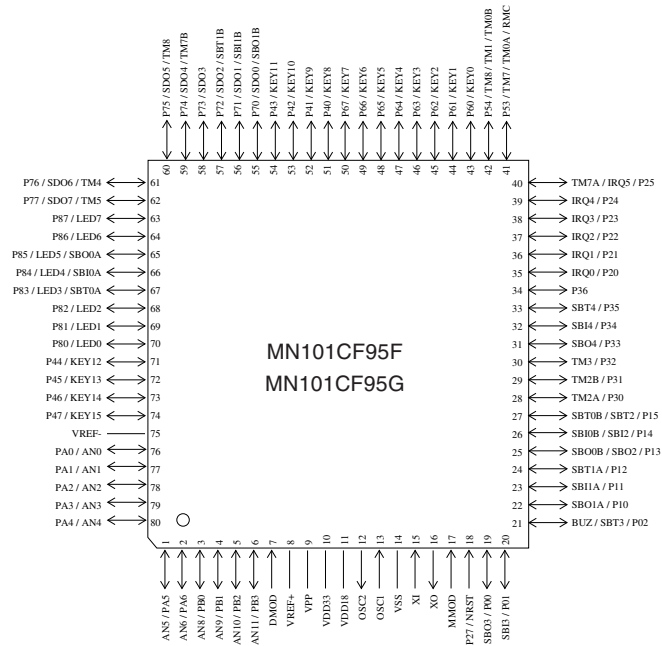


# □ MN101CF95F, MN101CF95G

<b>Type</b>	MN101CF95F (under planning)	MN101CF95G (under development)
<b>ROM (×8-bit)</b>	96K	128K
<b>RAM (×8-bit)</b>	4K	6K
<b>Package</b>	TQFP080-P-1212D *Lead-free	
<b>Minimum Instruction Execution Time</b>	Standard: 0.2 μs (at 2.7 V to 3.6 V, 10 MHz)* 0.5 μs (at 2.7 V to 3.6 V, 4 MHz)* 62.5 μs (at 2.7 V to 3.6 V, 32 kHz)* Double speed: 0.1 μs (at 2.7 V to 3.6 V, 10 MHz)*	
<b>Interrupts</b>	<ul style="list-style-type: none"> <li>• RESET • Watchdog • External 0 • External 1 • External 2 • External 3 • External 4 • External 5 • Timer 0</li> <li>• Timer 1 • Timer 2 • Timer 3 • Timer 4 • Timer 5 • Timer 6 • Timer 7 • Timer 8 • Time base • Serial 0 reception</li> <li>• Serial 0 transmission • Serial 1 reception • Serial 1 transmission • Serial 2 • Serial 3 • Serial 4 reception</li> <li>• Serial 4 transmission • Automatic transfer finish • A/D conversion finish • Key interrupts (12 lines)</li> </ul>	
<b>Timer Counter</b>	<p>Timer counter 0: 8-bit × 1            (square-wave/8-bit PWM output, event count, pulse width measurement, serial clock output, real-time output control, generation of remote control carrier)            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</p> <p>Timer counter 1: 8-bit × 1 (square-wave output, event count, synchronous output event, serial clock output)            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 1</p> <p>Timer counter 0, 1 can be cascade-connected.</p> <p>Timer counter 2: 8-bit × 1            (square-wave output, PWM output, event count, pulse width measurement, synchronous timer, serial clock output)            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</p> <p>Timer counter 0, 1, 2 can be cascade-connected.</p> <p>Timer counter 3: 8-bit × 1 (square-wave output, event count, serial clock output)            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</p> <p>Timer counter 2, 3 can be cascade-connected.</p> <p>Timer counter 0, 1, 2, 3 can be cascade-connected.</p> <p>Timer counter 4: 8-bit × 1            (square-wave/8-bit PWM output, event count, pulse width measurement, real-time output control, serial clock output)            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;            1/1 of external clock input frequency            Interrupt source ..... coincidence with compare register 4</p>	

<p><b>Timer Counter (Continue)</b></p>	<p>Timer counter 5: 8-bit × 1                      (square-wave/8-bit PWM output, event count, pulse width measurement, serial clock output)                      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 5</p> <p>Timer counter 4, 5 can be cascade-connected.</p> <p>Timer counter 6: 8-bit freerun timer                      Clock source ..... 1/1 of system clock frequency; 1/1, 1/128, 1/8192 of OSC oscillation clock frequency; 1/1, 1/128, 1/8192 of XI oscillation clock frequency                      Interrupt source ..... coincidence with compare register 6</p> <p>Timer counter 7: 16-bit × 1                      (square-wave/16-bit PWM output, cycle / duty continuous variable, event count, synchronous output event, pulse width measurement, input capture, real-time output control)                      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)</p> <p>Timer counter 8: 16-bit × 1                      (square-wave output, PWM output (duty continuous variable), event count, pulse width measurement, input capture)                      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 8 (2 lines)</p> <p>Time base timer (one-minute count setting)                      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                      Interrupt source ..... 1/65536, 1/262144, 1/1048576 of system clock frequency</p>
<p><b>DMA Controller (Automatic Data Transfer)</b></p>	<p>Max. Transfer cycles: 255                      Starting factor: various types of interrupt, software                      Transfer mode: 1-byte transfer, word transfer, burst transfer</p>
<p><b>Serial Interface</b></p>	<p>Serial 0: synchronous type / UART (full-duplex) × 1                      Clock source ..... 1/2, 1/4 of system clock frequency; pulse output of timer counter 1, 2; 1/2, 1/4, 1/16, 1/64 of OSC oscillation clock frequency</p> <p>Serial 1: synchronous type / UART (full-duplex) × 1                      Clock source ..... 1/2, 1/4 of system clock frequency; pulse output of timer counter 2, 3; 1/2, 1/4, 1/16, 1/64 of OSC oscillation clock frequency</p> <p>Serial 2: synchronous type / multi-master I<sup>2</sup>C × 1                      Clock source ..... 1/2, 1/4 of system clock frequency; pulse output of timer counter 3, 4; 1/2, 1/4, 1/16, 1/32 of OSC oscillation clock frequency</p> <p>Serial 3: synchronous type / single-master I<sup>2</sup>C × 1                      Clock source ..... 1/2, 1/4 of system clock frequency; pulse output of timer counter 4, 5; 1/2, 1/4, 1/16, 1/32 of OSC oscillation clock frequency</p> <p>Serial 4: synchronous type / UART (full-duplex) × 1                      Clock source ..... 1/2, 1/4 of system clock frequency; pulse output of timer counter 0, 5; 1/2, 1/4, 1/16, 1/64 of OSC oscillation clock frequency</p>

<b>I/O Pins</b>	<b>I/O</b>	67	• Common use • Specified pull-up resistor available • Input/output selectable (bit unit)
<b>A/D Inputs</b>		10-bit × 11-ch. (with S/H)	
<b>Special Ports</b>		Buzzer output, remote control carrier signal output, high-current drive port	
<b>Pin Assignment</b>			



TQFP080-P-1212D \*Lead-free

## Support Tool

<b>In-circuit Emulator</b>	PX-ICE101C/D+PX-PRB101C95-TQFP080-P-1212D
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MN101CF95F, MN101CF95G □

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