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## CMOS 16-Bit Microcontrollers

### TMP91FY22F

#### 1. Outline and Features

TMP91FY22F is a high-speed 16-bit microcontroller designed for the control of various mid- to large-scale equipment.

TMP91FY22F comes in a 100-pin flat package.

Listed below are the features.

- (1) High-speed 16-bit CPU (900/L1 CPU)
  - Instruction mnemonics are upward-compatible with TLCS-90/900
  - 16 Mbytes of linear address space
  - General-purpose registers and register banks
  - 16-bit multiplication and division instructions; bit transfer and arithmetic instructions
  - Micro DMA: 4-channels (1.0 us/2 bytes at 16 MHz)
- (2) Minimum instruction execution time: 148 ns (at 27 MHz)
- (3) Built-in RAM: 16 Kbytes  
Built-in ROM: 256 Kbytes Flash memory  
2 Kbytes mask ROM (used for booting)
- (4) External memory expansion
  - Expandable up to 16 Mbytes (shared program/data area)
  - Can simultaneously support 8-/16-bit width external data bus  
... Dynamic data bus sizing
- (5) 8-bit timers: 8 channels
- (6) 16-bit timer/event counter: 2 channels
- (7) General-purpose serial interface: 2 channels  
UART/ Synchronous mode: 2 channels  
IrDA ver1.0 (115.2 kbps) supported