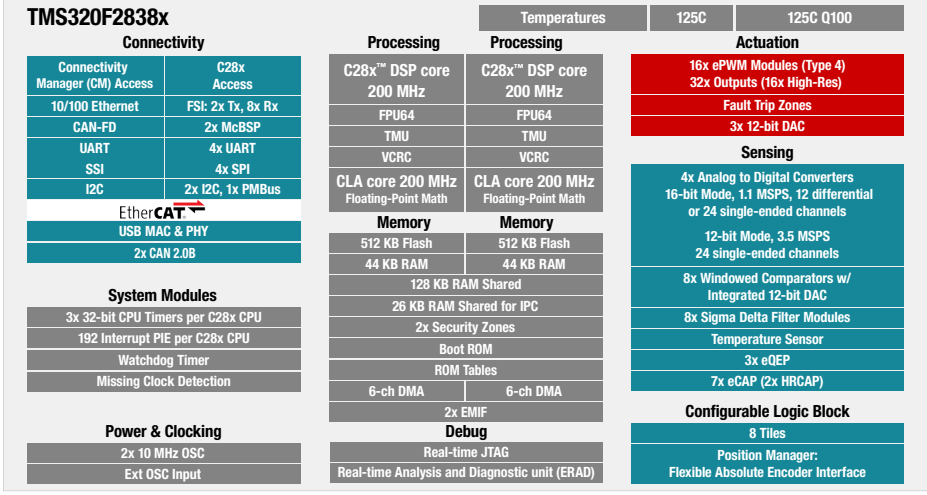
# Texas Instruments C2000™ TMS320F28388D real-time controller series

TEXAS INSTRUMENTS

***High-performance C2000 real-time controller enhanced with rich connectivity***

- **Real-time connectivity**
  - Arm® Cortex®-M4: 125 MHz/512 KB/96 KB
  - Dedicated, fully programmable communications sub-system
  - EtherCAT Industrial Fieldbus or 10/100 Ethernet MAC
  - CAN-FD, CAN, USB, 200 Mbps FSI, multiple serial ports
- **Real-time control**
  - 800/400 MIPS performance with extended 64-bit FPU and HW divide
  - Most flexible and advanced timers and PWMs
- **System flexibility**
  - Premium A/D converters, comparators and Sigma Delta filters
  - CLB for FPGA-like customization and absolute encoder support

Real-time control meets real-time connectivity with the C2000 F2838x series of MCUs. Ideal for high-performance, connected servo drives, motion controllers, variable frequency AC drives, remote I/O, solar inverters and industrial power applications.



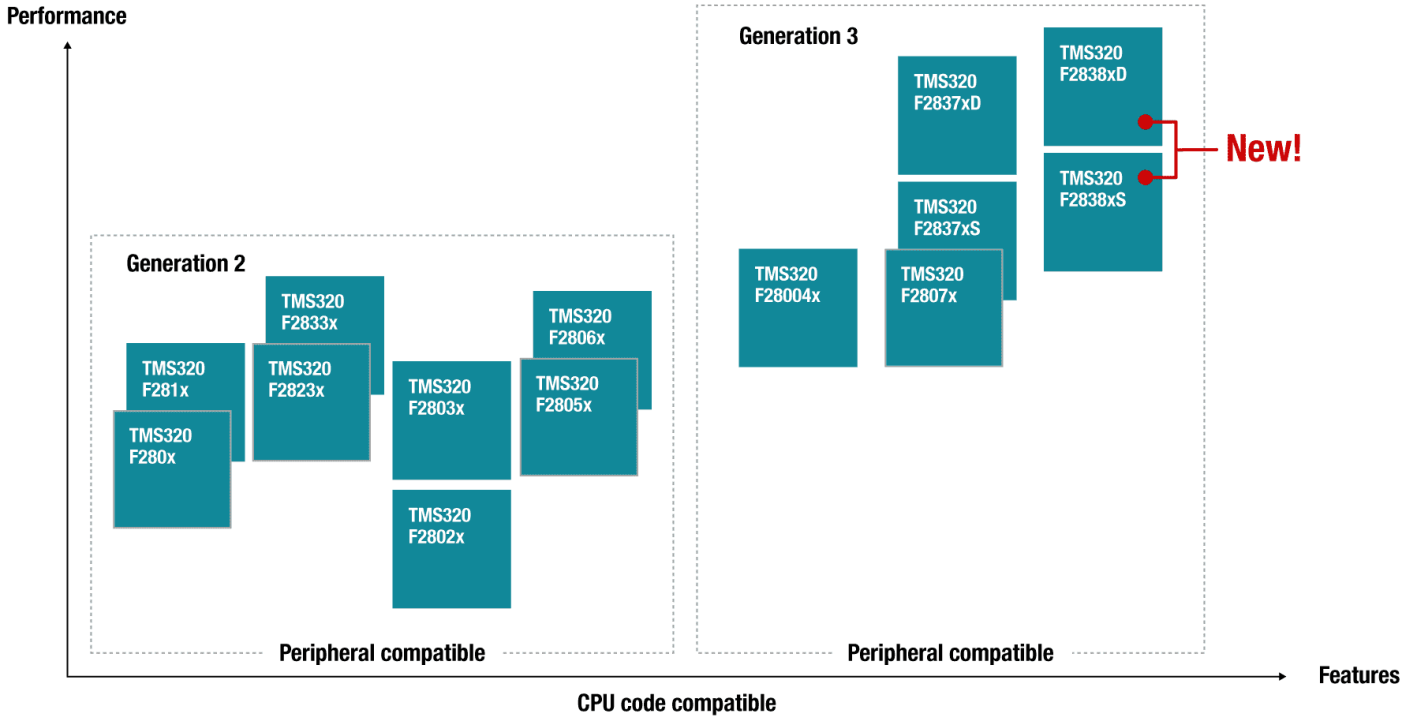

www.ti.com/product/tms320f28388d

| F2838x MCU | Connectivity manager | C28x CPUs/ MIPS | CLA Co-processors /MIPS | Flash memory | Ethernet | EtherCAT | Configurable logic block |
|---|---|---|---|---|---|---|---|
| TMS320F28388D | YES | 2/400 MIPS | 2/400 MIPS | 1.5 MB | YES | YES | YES |
| TMS320F28388S | YES | 1/200 MIPS | 1/200 MIPS | 1.0 MB | YES | YES | YES |
| TMS320F28386D | YES | 2/400 MIPS | 2/400 MIPS | 1.5 MB | YES | -- | YES |
| TMS320F28386S | YES | 1/200 MIPS | 1/200 MIPS | 1.0 MB | YES | -- | YES |
| TMS320F28384D | YES | 2/400 MIPS | 2/400 MIPS | 1.5 MB | YES | -- | -- |
| TMS320F28384S | YES | 1/200 MIPS | 1/200 MIPS | 1.0 MB | YES | -- | -- |

| | Part number | Description |
|---|---|---|
| Getting Started | SPRSP14 | Datasheet |
| | SPRUII0 | Technical reference manual |
| | TMDSCNCD28388D | F28388D controlCARD and experimenter's kit bundle |
| | C2000WARE | C2000 foundational software |
| | C2000WARE-DIGITALPOWER-SDK | Digital power software development kit |
| | C2000WARE-MOTORCONTROL-SDK | Motor control software development kit |

## C2000 Portfolio

The C2000 F2838x MCU series builds on the third generation improvements introduced in the F2837x and F28004x series. These new real-time control solutions offer code compatibility with existing C2000 MCUs, allowing customers to take advantage of the family's unique combination of premium performance in a variety of offerings.




## Comparison of F28388D to F28379D series

| | F28388D | F28379D |
|---|---|---|
| Connectivity manager<br>125 MHz Arm M4<br>512 KB flash / 96 KB RAM | Yes | No |
| Total flash | 1.5 MB | 1.0 MB |
| Total RAM | 338 KB | 204 KB |
| Ethernet | Yes | No |
| EtherCAT | Yes | No |
| CAN FD | Yes | No |
| Fast serial interface | Yes | No |
| 16-bit ADC | single or double ended | double ended |
| PWM channels | 32 | 24 |
| Configurable logic block | 8 Tiles | 4 Tiles |
| FPU | FPU64 | FPU32 |
| Hardware divide | Yes | No |
| Background CRC | Yes | No |
| VCU | VCU-CRC | VCU-II |

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