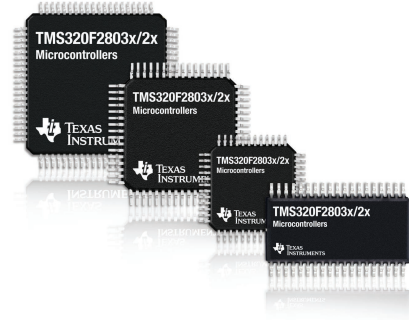


Piccolo™

Real-time 32-bit Microcontrollers – TMS320F2802x/2803x



The new F2802x/F2803x Piccolo™ family of C2000™ MCUs provides unparalleled performance with increased integration to help drive processor intensive real-time control into cost-sensitive applications. Initial F2802x/F2803x devices will include 40 to 60 MHz variations, up to 128 kB of flash memory, high speed 12-bit ADC, high-resolution enhanced pulse width modulators (ePWMs), along with a host of other modules such as high-precision on-chip oscillators, analog comparators, communication interfaces, and general purpose I/O. Available in multiple package options starting at 38 pins, the Piccolo family is the ultimate combination of performance, integration and size.

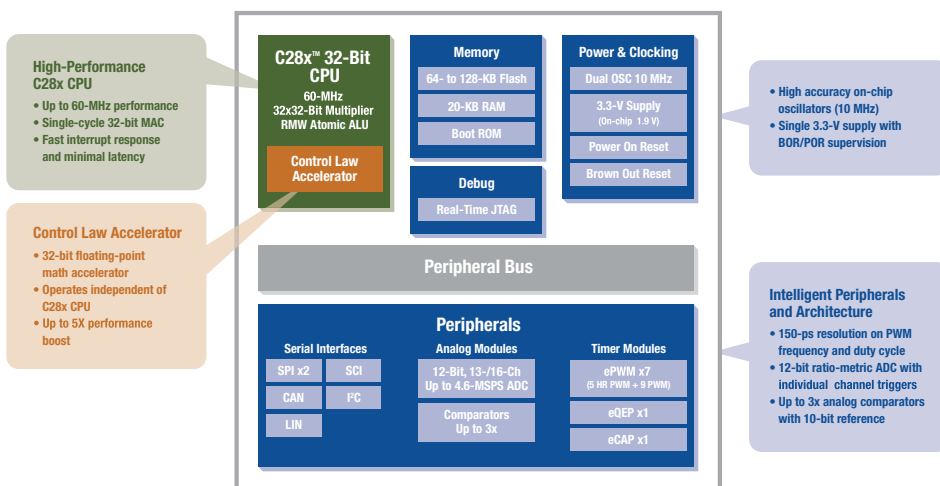
The F2802x/3x MCUs include zero-pin integrated oscillators enabling many applications to utilize the internal clock source without external components. Enhanced power management features such as the on-chip voltage regulator reduces external power supply requirements. F2803x/F2802x devices require only a single 3.3-V supply and regulate core voltage internally while providing brown-out protection and power-on reset. The F2802x/3x devices are 100 percent code-compatible across the series and with earlier-generation C2000 devices, making upgrades easy and allowing options from the entire portfolio for applications.

Key Features

- Up to 60-MHz, 32-bit C28x™ CPU
- 32-kB to 128-kB embedded Flash
- 12-bit ADC, up to 4.6 MSPS
- 150-ps high-resolution ePWM
- Control law accelerator
- Package options starting at 38-pin TSSOP

The F2802x/3x MCU's ePWMs support the industry's highest resolution with frequency and duty cycle resolution down to 150 ps to enable more control over harmonics and reduce sample-to-output delay. The on-chip 12-bit ADC operates up to 4.6 MSPS and includes robust triggering mechanisms enabling easier support for multi-frequency and phase sampling. In addition, peripherals such as the enhanced capture and enhanced quadrature encoder pulse make the Piccolo series an ideal solution for real-time control.

The F2803x series of Piccolo MCUs will also feature new advancements such as the control law accelerator (CLA) designed to offload control algorithms from the main CPU. The CLA is designed to run complex high-speed control algorithms leaving the C28x™ CPU free to perform other tasks such as system management. This combination of the C28x CPU plus the CLA provides significant performance boost to many real-time control applications.



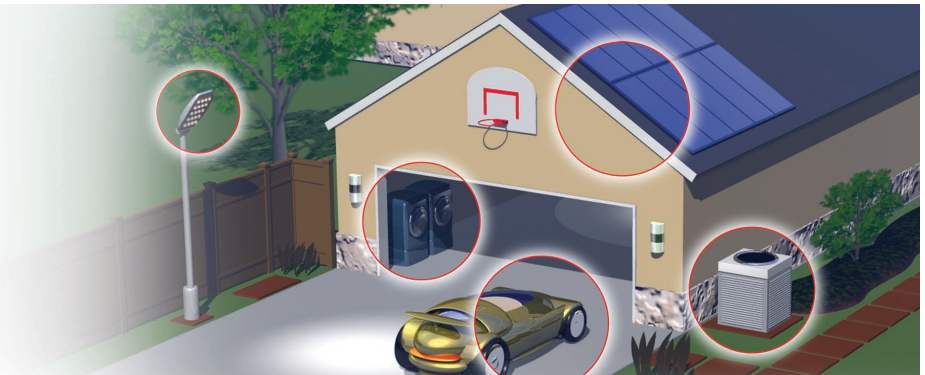
TMS320F2803x microcontroller block diagram. For more information, visit www.ti.com/piccolo

Preliminary Configuration Details

Device	Processor						Memory						Control Interfaces						External Memory Bus	I/O Pins	Core Voltage	Packaging	100-U Price*
	Speed (MHz)	FPU	DMA	CLA	RAM (KB)	Flash (KB)	ROM (KB)	PWM Channels	HiRes PWM	Timers	Event Captures	Quadratura Encoder	12-Bit A/D		Communications Ports								
													Chan/Conversion Time (ns)	12-Bit A/D	SPI	SCI	CAN	I ² C					
TMS320F2802x	40-60	No	No	No	12	32-64	Boot	8	4	7	1	0	7-13/ 325-216	1	1	—	1	—	20-22	1.8	38 TSSOP or 48 LQFP	TBD	
TMS320F2803x	60	No	No	Yes ¹	20	64-128	Boot	14	5	7	1	1	13-16/ 216	2	2	1	1	1	33-44	1.8	64 TQFP or 80 LQFP	TBD	

¹Configuration options may be offered with and without CLA.

Real time control offers greater system efficiency and precision through the implementation of advanced algorithms for applications such as, solar power inverters, white goods appliances, hybrid automotive batteries and LED lighting.



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