C2834x Floating Point Microcontroller

The next generation in **TI's Delfino™ Series** of floating point MCUs

The new C2834x builds on the Delfino™ family of C2000™ floating point microcontrollers and brings floating-point processing to performance-hungry real-time control applications. The C2834x devices deliver twice the performance of existing floating point devices while offering code compatibility with all other C28x devices.

Enabling greater intelligence and efficiency, the Delfino family solution is designed for applications needing the most control optimized performance available. The C2834x devices feature an integrated 32-bit floating-point unit running at 300 MHz. The C2834x MCUs flexible real-time control peripherals,

such as the high-resolution PWM modules, enable optimized control loops. The devices offer a scalable platform and innovative tools for reduced development cost and time to market.

The high-performance C28x floating point core improves computational bandwidth by up to 50 percent enabling more complex control schemes to be implemented and allowing headroom for diagnostics and other system tasks. The unmatched real-time control architecture features programmable PWM modules with flexible trip options, 32-bit quadrature encoder interfaces for position decoding, and 32-bit enhanced capture modules for accurate time stamping. The on-chip communication

peripherals simplify system interfacing. The C2834x MCUs offer a scalable architecture that is code compatible with other C2000 processors from the 40 MHz Piccolo family to the 300 MHz Delfino floating point family.

All C2000 devices are focused on delivering real-time control to a wide variety of applications. Piccolo MCUs target cost sensitive applications while Delfino floating devices target high-performance applications. The new C2834x devices offer the highest performance for control applications by providing customers with 300 MHz of floating point performance, up to 516 KB of high speed access RAM, and unmatched control peripherals.

To order samples and download data sheets, visit **www.ti.com/delfino**.
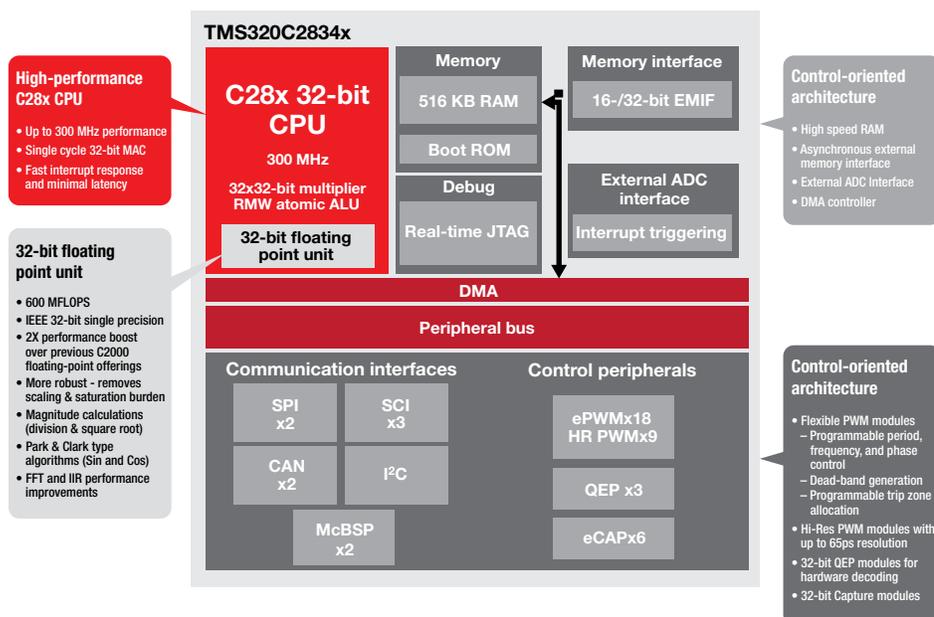
Key features

- 2x performance lift with 300 MHz C28x core
- 32-bit floating-point precision
- Up to 65 ps resolution PWM modules
- Multiple capture and 32-bit QEP modules
- Code compatibility across C2000 platform
- Modular controlCARD based development

▲ *TMS320C2834x microcontroller block diagram*

C2834x Series

TMS320	MHz	Flash (KB)	RAM (KB)	FPU	12-bit ADC Chan.	PWM (HRPWM) Outputs	Capture inputs	QEP encoder	External interface	Comm ports	Supply voltage	Package/temp	Pricing (100u)
C28346	300	—	516		—	18+1* (9)	6	3		2xSPI, 3xSCI, I²C, 2xCAN, 2xMcBSP	3.3V I/O, 1.2V Core, 1.8V PLL		$19.70
C28345	200	—	516		—	18+1* (9)	6	3		1xSPI, 3xSCI, I²C, 2xCAN, 2xMcBSP	3.3V I/O, 1.1V Core, 1.8V PLL		$17.40
C28344	300	—	260	Yes	—	18+1* (9)	6	3	32-/16-bit	1xSPI, 3xSCI, I²C, 2xCAN, 2xMcBSP	3.3V I/O, 1.2V Core, 1.8V PLL	256-BGA, 179-u*BGA -40°C to 105°C/ 125°C (256-BGA)	$15.40
C28343	200	—	260		—	18+1* (9)	6	3		1xSPI, 3xSCI, I²C, 2xCAN, 2xMcBSP	3.3V I/O, 1.1V Core, 1.8V PLL		$13.50
C28342	300	—	196		—	12+1* (6)	4	2		1xSPI, 3xSCI, I²C, 2xCAN, 1xMcBSP	3.3V I/O, 1.2V Core, 1.8V PLL		$12.30
C28341	200	—	196		—	12+1* (6)	4	2		1xSPI, 3xSCI, I²C, 2xCAN, 1xMcBSP	3.3V I/O, 1.1V Core, 1.8V PLL		$10.80

F2833x Series

TMS320	MHz	Flash (KB)	RAM (KB)	FPU	12-bit ADC chan.	PWM (HRPWM) outputs	Capture inputs	QEP encoder	External interface	Comm ports	Supply voltage	Package/temp	Pricing (100u)
F28335	150	512	68			18+1* (6)	6			1xSPI, 3xSCI, I²C, 2xCAN, 2xMcBSP			$18.80
F28334	150	256	68	Yes**	16	16+1* (6)	4	2	32-/16-bit	1xSPI, 3xSCI, I²C, 2xCAN, 2xMcBSP	3.3V I/O 1.9V Core	176-QFP, 176-BGA, 179-u*BGA -40°C to 85°C/ 125°C (176-BGA)	$17.70
F28332	100	128	52			16+1* (4)	4			1xSPI, 2xSCI, I²C, 2xCAN, 1xMcBSP			$16.70

*The capture unit can provide one additional PWM output.
**Fixed point versions available.

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