TMS320C553x DSPs

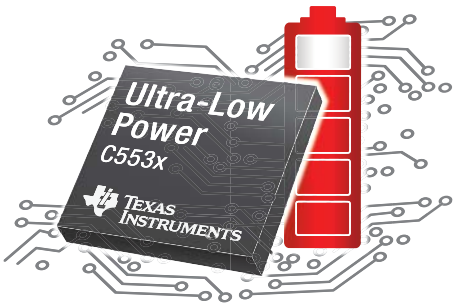
Industry's lowest power DSPs now at the unbelievable price of $1.95

Key Features

- Industry's lowest-price DSPs – starting at U.S. $1.95 for 1Ku
- Industry's lowest-power DSPs offer up to six times lower-power levels than closest DSP competitor – less than 0.15 mW/mHz active power at 1.05 V and less than 0.15 mW standby power
- Quick and easy development with C5535 eZdsp™ development kit as well as a free complete software framework for USB audio class and human interface device (HID) applications
- Large on-chip memory and optimized FFT coprocessor for faster, cost- and energy-efficient performance
- Extensive connectivity options as well as peripheral support

Lowest-price DSPs in the industry

Texas Instruments' new ultra-low-power TMS320C553x DSPs include the lowest price fixed-point 16-bit DSPs in the industry by 30 percent. This generation of power-efficient DSPs is the first to break the U.S. $2 DSP barrier and includes the TMS320C5532, TMS320C5533, TMS320C5534, and TMS320C5535 DSPs. In addition to being the lowest-price DSPs in the industry, TMS320C553x DSPs offer up to six times lower power consumption than the nearest DSP competitor. These value-line DSPs allow designers to add sophisticated real-time signal processing to consumer audio and voice applications, portable medical equipment, biometric security, voice-activated home automation and flow meters.



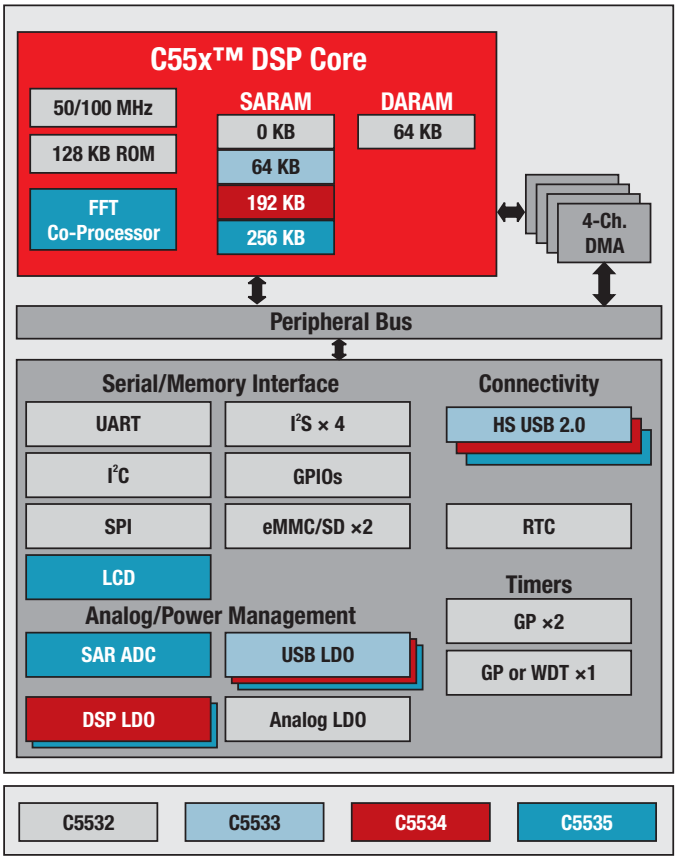
The TMS320C553x DSPs include a comprehensive set of integrated peripherals that reduce the system bill of materials (BOM) by 15 percent. The peripherals include high-speed USB 2.0 with PHY, SD/eMMC, I^2S, I^2C, UART, SPI, and GPIO, LCD display controller and 10-bit, four-channel successive approximation (SAR) analog-to-digital converter (ADC) and deliver seamless and flexible connections to media, analog devices, and other processors, further reducing overall system cost.

The C553x DSPs are available in a 12 mm × 12 mm BGA package with 0.8-mm pitch. This packaging allows designers to reduce the overall system cost by 20 percent by using a four-layer PCB, while saving board space in size-sensitive applications.

With on-chip memory ranging from 64 KB to 320 KB, the C553x DSPs give many options for a variety of storage needs. This memory range allows the entire code to be loaded at boot-up from an external memory for applications, saving system cost as well as power and enables faster access to data.

Ultra-low-power DSPs for extended battery life

The TMS320C553x DSPs offer more than just a low price point – they also have the



industry's lowest power consumption. The C553x generation of DSPs delivers up to six times lower power consumption compared to the nearest DSP competitor (active power less than 0.15 mW/mHz at 1.05V and standby power less than 0.15 mW), allowing extremely power-efficient portable devices.

To further improve power efficiency, the C553x DSPs also include from one to three low-dropout regulators (LDOs), simplifying power management as well as reducing the BOM cost and solution size. An integrated 1024-point programmable Fast Fourier Transform (FFT) co-processor on the TMS320C5535 DSP further improves computational throughput while providing energy efficiency for long battery life and a reduction in total system power.

Quick and easy development

TI has made it easy to begin development with the TMS320C553x DSPs today with the credit-card sized TMS320C5535 eZdsp™ development kit priced at U.S. $99. The kit includes a credit-card-sized development board, a free, full-featured version of Code Composer Studio™ (CCStudio) integrated development environment (IDE) (U.S. $495 value), headphones with microphone, a micro-SD card and an on-board emulator (up to U.S. $500 value). It also comes preloaded with the USB audio class and HID demo for an easy and comprehensive out-of-the-box experience. TI's free software framework for USB audio class and HID applications, including an out-of-the-box demo, is also available for download.

Customers can easily migrate between the C553x DSPs and also to the software-compatible C5515, C5514, C5505 and C5504 ultra-low-power DSPs to rapidly create multiple unique end products that maximize R&D investment and existing software base. In addition, devices within the C553x DSP generation are also pin-to-pin compatible, enabling easy scalability to add varying functionality to a customer's product portfolio.

50-MHz and 100-MHz performance options deliver flexibility based on the needs of the application.

For more information on TMS320C5532/5533/5534/5535 DSPs, please visit **www.ti.com/cheapdsp**.

C553x ultra-low-power DSPs:
Flexibility enables customization and differentiation

C5532 Ultra-Low-Power DSP	C5533 Ultra-Low-Power DSP	C5534 Ultra-Low-Power DSP	C5535 Ultra-Low-Power DSP
50-MHz and 100-MHz performance options for each DSP			
Total active power <0.15 mW/MHz at 50 MHz and 1.05 V; <0.22 mW/MHz at 100 MHz and 1.3 V			
Integrated high-speed peripherals; SD/MMC, I^2C UART, SPI and GPIO			
12 mm × 12 mm BGA package with 0.8-mm pitch			
1 LDO	2 LDOs	3 LDOs	
64 KB internal memory	128 KB internal memory	256 KB internal memory	320 KB internal memory
	High-speed USB 2.0 with PHY		
			LCD controller, SAR ADC, FFT co-processor

Increasing memory, peripheral and power management options

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