Product Bulletin

TMS320C672x Floating-Point DSPs

Key Benefits

- **Offer professional features and quality at consumer prices** – leverage DSP price/performance to expand your product lines
- **Choose device to fit specific needs** – DSPs range from high-performance to low-cost devices to fit your needs
- **Improve audio effects** – dMAX DMA engine offloads DSP core during effects generation
- **Deliver highest digital audio quality** – use single precision (32-bit), mixed precision (32-/64-bit) or double precision (64-bit) floating-point operations
- **Accelerate code development** – utilize optimized C Compiler and Code Composer Studio™ Development Tools
- **Eliminate need for prototyping hardware** – start algorithm development immediately with the C672x-based Professional Audio Development Kit (PADK)

TI's floating-point DSPs are ideal for a host of professional audio, musical instruments, broadcast audio and commercial audio applications. These devices will also perform exceptionally well in a variety of industrial, biometric, control and medical applications.

With the enhanced C67x+™ DSP core, new memory architecture and enhanced peripherals, TMS320C672x DSP-based devices offer substantially improved performance at lower price points than previous floating-point DSPs.

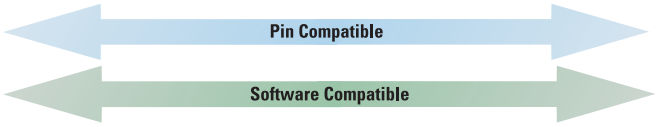
Improvements to the C672x DSP generation include:

- CPU registers doubled from 32 to 64
- Instruction cache increased from 4 kBytes to 32 kBytes
- Simultaneous floating-point additions increased from 2 to 4 per cycle
- dMAX DMA engine adds increased I/O options
- Flat memory model for data
- New boot options help reduce system costs
- DSP/BIOS™, DSPLIB and FastRTS libraries are included in the ROM code of the device

Together, these innovations provide up to a greater than 25 percent lift in performance for real-world audio applications.

Comparison of Floating-Point DSPs Now Available

	C6722 DSP	C6726 DSP	C6727 DSP	C6720 DSP
	200–250 MHz	225–266 MHz	250–300 MHz	200 MHz
MFLOPS	1200–1500	1350–1596	1500–1800	1200
Memory	128 KBytes Internal RAM 32 KBytes Instr. Cache	256 KBytes Internal RAM 32 KBytes Instr. Cache	256 KBytes Internal RAM 32 KBytes Instr. Cache	64 KBytes Internal RAM 32 KBytes Instr. Cache
McASP	2	3	3	2
I^2C	2	2	2	2
SPI	2	2	2	2
Universal HPI (UHPI)	N/A	N/A	Yes	N/A
EMIF	16-bit	16-bit	32-bit	16-bit
dMAX	Yes	Yes	Yes	Yes
U.S. 2007 Price (10 KU)	$8.95–$10.40	$11.15–$13.40	$16.75–$18.95	$5.75
Availability	Shipping	Shipping	Shipping	Samples today!



Target Applications

- Professional audio products
  - Mixers
  - Effects boxes
  - Audio synthesis
  - Instrument/Amplifier modeling
  - Audio conferencing
  - Audio broadcast
  - Audio encoders
- Emerging audio applications
- Biometrics
- Medical
- Industrial applications

TI's DSP Platform Software and Development Tools

TI's software and development tools feature:

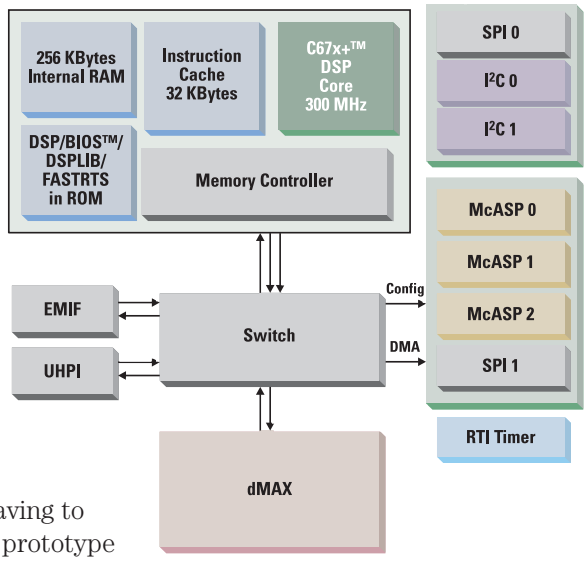
- **Code Composer Studio™ IDE** – integrates familiar PC host tools needed to take a real-time, embedded application quickly through the design process. Integration allows designers complete access from beginning to end of development.
- **DSP/BIOS Kernel** – this scalable real-time kernel, eliminates the need to develop and maintain custom operating systems or control loops.

- **C Compiler** – eliminates assembly in most cases saving time and effort.
- **Reference Frameworks and Chip Support Library** – provide the base foundation code necessary to get real-time applications up and running quickly.
- **TI DSP Third Party Network** – an extensive array of companies provide off-the-shelf software.

Pro Audio Development Kit (PADK)

The PADK integrates the C6727 DSP with TI's complementary analog technology, including Burr-Brown A/D and D/A converters. Designed by Lyrtech, the PADK is tuned for high-end pro-audio applications and demonstrates the efficiency of the C672x DSPs with the inclusion of real-world pro-audio algorithms and software examples. An onboard expansion slot provides flexible I/O connectivity and enables developers to develop daughter cards to expand the functionality of the board. With the PADK, developers are able to quickly evaluate C672x DSP performance and begin product development immediately without having to first develop their own prototype board.

TMS320C672x DSP Block Diagram



Availability/Pricing

TMS320C672x DSPs are available today.

For more information, go to **www.ti.com/proaudio** or contact your local TI representative for samples.

TI Worldwide Technical Support

Internet

TI Semiconductor Product Information Center Home Page
support.ti.com

TI Semiconductor KnowledgeBase Home Page
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