

Analog and Mixed-Signal Products

Analog Applications Journal

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New DSP development environment includes data converter plug-ins	1
System designs that include a DSP and one or more data converters are steadily increasing in complexity while design engineers are asked to quicken the release of new applications to market. Previous compilers were developed in close conjunction with simulators and hardware emulators. These modules have been integrated into one development system, the TI Code Composer Studio™ (CCS).	
Higher data throughput for DSP analog-to-digital converters	5
A method for executing algorithms is presented that will increase ADC-to-DSP throughput by as much as a factor of 10.	
Efficiently interfacing serial data converters to high-speed DSPs	10
This article highlights the application of McBSP and DMA for sampling to a serial analog-to-digital converter—specifically, the TLV2548 ADC. This method frees the DSP for tasks more deserving of its power and speed.	
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The optimal output filter design for a power supply with a high-slew-rate transient load, such as a microprocessor or DSP, is described in detail.	
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Low-voltage differential signaling is very fast. How fast the operations take place and how far the usable signal travels depends on technology, system circumstances (noise, crosstalk, stubs, etc.) and the connection media.	
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Op amp oscillators are restricted to the lower end of the frequency spectrum because they do not have the required bandwidth to achieve low phase shift at high frequencies. Various types of op amps and spectrum solutions are described in this article.	
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This article is a tutorial on differential signaling, which has been used successfully for audio, data transmission, and telephone systems for many years because of its inherent resistance to external noise sources.	
The PCB is a component of op amp design.	42
Most analog designers are familiar with how to use ICs and passive components to implement a design. There is one additional circuit component, however, that must be considered for the design to be a success—the traces and planes of the printed circuit board on which the circuit is located.	
Reducing PCB design costs: From schematic capture to PCB layout	48
Modern EDA software packages provide a host of tools that allow designers to draw schematics in order to produce printed circuit boards. Understanding the basic requirements of these tools and the interactions between them can help to reduce the cost of PCB designs.	
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Introduction

Analog Applications Journal is a collection of analog application articles designed to give readers a basic understanding of TI products and to provide simple but practical examples for typical applications. Written not only for design engineers but also for engineering managers, technicians, system designers and marketing and sales personnel, the book emphasizes general application concepts over lengthy mathematical analyses.

These applications are not intended as “how-to” instructions for specific circuits but as examples of how devices could be used to solve specific design requirements. Readers will find tutorial information as well as practical engineering solutions on components from the following product categories:

- Data Acquisition
- Power Management
- Interface (Data Transmission)
- Amplifiers

Where applicable, readers will also find software routines and program structures. Finally, *Analog Applications Journal* includes helpful hints and rules of thumb to guide readers in preparing for their design.

Because this book is limited in size, readers should refer to more detailed technical information, which can be found on TI's product-specific websites listed at the end of each article.

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