TI Tech Day–Chicago

Analog Design Seminars Technology Exhibits

Donald E. Stephens Convention Center

5555 North River Road • Rosemont, Illinois • Phone: (847) 692-2222

Technical Exhibits

Texas Instruments Booths

Audio Solutions
C2000™ Digital Signal Controllers
Chipcon Low-Power RF Products
Complete Signal Chain Prototype in Minutes
DaVinci™ Technology
DC/DC Power Supply Solutions
Digital Interface Products
High-Speed Interface Products
Industrial PID Loop Controller
Low-Level Data Acquisition System
Low-Phase Noise Clocks
MSP430 Ultra-Low-Power MCUs
Plug-In Power
TI Analog and Web Design Tools
TMS470 – Unmatched ARM7™ MCU Performance
Segway and TI's C2000
Standard Linear and Logic

3rd Party Booths

Delta Mobile
Fractus
Ittiam Systems
Logic Product Development
L.S. Research
Object Video
Silicon Engines

Channel Partners

Arrow – Strength and Performance at Your Fngertips
Avnet...Support Across the Board
TEQ Sales – If we don't have it, you don't need it

Contract Manufactures

Arctronics
Circuit Service, Inc.
Circuit Works Corporation
SigmaTron International, Inc.
The Morey Corporation

- **Register for FREE**
- **Reception to follow**
- **Time with TI experts**
- **Presentation materials**
- **Demos available**
- **Build your own agenda**

Technology Exhibits

TI Audio Solutions

TI's Audio Solutions has the widest range of audio products. From analog to digital, integrated to standalone, portable to professional, we have it all. Come by and hear the difference at TI Tech Days. These demos will be available: TLV320AIC33 Audio Codec – New Software GUI. TI's newest audio codec with 10 inputs and 7 outputs, TDM and easy Bluetooth connection, has endless options for personalization. Our demo will show you how easy it is to connect and customize this device for your audio needs. TPA3100D2 20W Stereo Class-D. TI's highest power analog input stereo speaker driver evaluation module will demo the small space PCM layout perfect for portable or space constrained designs that require high output power. USB Audio Demo. This demo will show how to use two TI audio devices powered directly from a USB source. No need for additional power sources. Standalone evaluation module includes speaker and headphone outputs perfect for any application with powered USB. Thermal comparison of our newest Class-D and Class-AB amps. TI is the industry leader in Class-D and continues to make it better demonstrating how to reduce heat dissipation and increasing efficiency in smaller packaging.

C2000 Digital Signal Controllers

MCU ease of use & DSP performance for Motor Control, Power Conversion, and Advanced Sensing. Two demos will be available using the F2808 DSP in a Dual Motor Control Application and also in a DC-DC Converter.

Chipcon Low Power Wireless provided by Texas Instruments

With the acquisition of Chipcon, a leading company in the design of short-range, low-power wireless RF ICs, TI now provides industry leading ZigBee™-compliant solutions and a broad range of proprietary RF-ICs that enable innovative low-power wireless applications. TI's portfolio of high-performance analog and ultra-low-power MCUs combined with the Chipcon products give customers an immediate low-power RF offering and a strong roadmap for future integrated solutions. At this tech day we will present the Low Power RF product line of RF-ICs, SoCs, and ZigBee solutions, as well as our software, development kits and reference designs that will speed your time to market.

Complete Signal Chain Prototype in Minutes

Imagine being able to prototype your entire signal chain - input signal conditioning, A/D conversion, processor, D/A conversion, and output signal conditioning – with simple building blocks. Imagine not having to lay out a printed circuit board just to evaluate a system signal processing idea. With TI's modular evaluation modules (EVMs), you can put together a complete data acquisition system featuring signal conditioning, A/D converter, and a processor, all in just a few minutes. And you can add on from there - a D/A converter, or more output signal conditioning. The modular EVM boards go together easily thanks to standardized connectors, so you can quickly build a complete hardware prototype, and get to write your application code faster.

DaVinci Technology Simplifies Digital Video Innovation

DaVinci technology is the industry's first synergistic solution for digital video innovations. The DaVinci Evaluation Module (EVM) will be used as the platform to demonstrate the capabilities of the TMS320DM6446, the first processor in the DaVinci family. Software, hardware and connectivity will be shown; these will include items such as MPEG4, H.264, AAC and G.711 codecs (encode/decode) and network connectivity via 10/100 EMAC. Information on TI's DaVinci offerings can be accessed at www.ti.com/davinciproducts

TI Digital Interface Business

Texas Instruments provides complete interface solutions for differentiating your products while accelerating your time-to-market delivery. TI's interface portfolio includes 1394, USB, UART and PCI Express products. On hand demonstrations of PCIe and 1394 will be available. The TI Digital Interface team works with you to provide expertise in high-speed, mixed-signal circuits, system-on-a-chip integration and advanced product development processes. Our goal: to ensure you receive the resources you need to deliver the best products at competitive prices. Before your devices talk to each other, come talk to us … TI's Digital Interface team.

High Speed Interface Products

Texas Instruments offers the industry's widest selection of high speed interface products such as LVDS, M-LVDS, PECL buffers, translators, muxes and crosspoint switches and also Serializer-Deserializer (SerDes) transceivers. LVDS and M-LVDS EVMs will be featured at the Tech Day.

Industrial PID Loop Controller

This PID Loop Demo uses the MSC1211, OPA548, XTR300, and XTR108 to create a complete industrial control loop in which you can command 40C to 90C in 0.05C resolution through a user potentiometer. Closed loop temperature is maintained to <0.08C in a "patentable" temp chamber (12V tail light).This PID Loop Demo uses the MSC1211, OPA548, XTR300, and XTR108 to create a complete industrial control loop in which you can command 40C to 90C in 0.05C resolution through a user potentiometer. Closed loop temperature is maintained to <0.08C in a "patentable" temp chamber (12V tail light).

Low Level Data Acquisition System

This low level DAS demo has a built-in buzzer to track heart rate, and can also measure blood pressure, air pressure, EMI, etc. An external oscilloscope will display real time signals. <400uVpp signals are acquired within >2Vpp 60Hz noise! A virtual cornucopia of low level real world signals conditioned from a single supply using TI instrumentation amps, op amps, references, and power supply regulators.

Low Phase Noise Clocks

Texas Instruments offers a wide selection of timing support devices, from non-PLL-based buffers to high-performance PLL clock synthesizers. Included in the TI clock family are programmable clock generators with output selection, low jitter clock synthesizers and LVPECL clock drivers. These Evaluation Tools will be demonstrated: 1)CDCE706/906 EVM, Programmable Clock Generator, 2) CDCM7005 EVM, Low Phase Noise Clock Synthesizer and Jitter Cleaner, 3) CDCLVP110 EVM, Low-Voltage 1:10 LVPECL/HSTL clock driver with Selectable input, 4) CDCP1803 EVM, LVPECL Fanout buffer with dividable outputs.

MSP430 Ultra-Low-Power Microcontrollers

The MSP430 will show various demos that showcase it's ultra-low-power and embedded analog advantages:

- The MSP430 running a real time clock on LCD, powered by 3 grapes
- The MSP430 running a real time clock on LCD powered by a small solar cell
- Passive Infrared(PIR)Sensor using an MSP430F2013 and very few external components. Flashes an LED when motion is detected.
- Heart rate monitor based on an MSP430FG439 using the integrated op amps. Combines digital FIR filters in software with MSP430. Generates a clean EKG wave form and calculates the heart rate with minimal artifacts

Segway and TI's C2000

The Segway HT leverages TI's TMS320C2000 DSP controllers because of their small size and peripheral integration, delivering an innovative, first-of-a kind, self-balancing, personal transportation system that's designed to operate in any pedestrian environment. Segway HT can self-balance because of a technology called dynamic stabilization. Dynamic stabilization uses inputs from solid-state gyroscopes and tilt sensors that are analyzed by the C2000 DSP controller in real time. The DSP controller then makes minute adjustments to 2 powerful electric motors one hundred times a second allowing Segway HT to instantaneously adjust to rider input. The Segway will be available for rides if you are daring enough!

TI Plug-In Power

Plug-In Power's second generation of POLA modules, nick-named T2, offer many new features that have been developed to meet the demanding power requirements of the latest DSPs, ASICs, and FPGAs. Of all these features, most notable is TurboTrans™. TurboTrans™ allows the designer to "tune" the control loop to meet a specific transient response target. The end result is greatly improved transient response at the lowest system cost. Demos of the T2 Power Modules with Fast Transient Response will be available.

Total Power Management Solutions for Line-Powred Systems

TI's Power Supply group will showcase several products at this booth:

- TPS40140 Dual Output or 2-Channel Multi-phase Stackable DC/DC Controller. Stackable. Scalable. Flexible.
- UCC28600 8-pin Quasi-resonant Green Mode PWM Controller for meeting EnergyStar efficiency and standby power consumption requirements.
- Wide Input DC/DC Point-of-Load Prodcts: DC/DC Controllers with integrated MOSFETs, DC/DC Converters with External MOSFETS, and DC/DC POL Modules. TI has POL solutions to meet your needs.
- The new and upcoming UCD9080 Power Supply Sequencer.
- The new and upcoming TPS23750 Integrated PoE Powered Device Controller

TI Standard Linear & Logic (SLL) Products

Broadest portfolio in the industry and growing… investing heavily in new products to offer more value-added solutions targeting key end equipments. SLL's commitment to the older technologies is unmatched as we still produce technologies that were offered in the 1960's. Our best-in class obsolescence policies support this commitment. SLL offers competitive price and lead-times. TI is the market leader in Pb-free/ Green conversion. Products focused on: Signal Switches, Interface (RS-232, USB Transceiver, ESD/ EMI Protection), Level Translation, I2C, TPIC Low Side Driver, Op-Amps, Power management (V-regs, Voltage Supervisor).

TMS470 – Unmatched ARM7™ MCU Performance

Demos present at this booth will be:

1. DMA boosts system performance – ADC continuously converts data in buffered mode and displays ADC data on LEDs. DMA allows no CPU interaction to execute data transfers.
2. Stepper Motor Control – Using the interface capability of TMDS-FET470R1B1M EVM to the HPA-MCUINTERFACE card, the TMS470 communicates via SPI to TPIC 2603 6-channel serial interface low-side driver to control a stepper motor.
3. Vocoder -The TMS470 generates clear, concise sounding voice messages using the RISC coprocessor PWM without CPU intervention.

TI Analog & Web Design Tools

This booth will provide attendees to see live demonstrations of the latest developments and high level roadmaps in the area of TI Analog Website and Design Tools. Session will include recent updates to the Analog website and well as updates on Tina 7 Pro (with SMPS) simulation environment as well as updates to the TI Pro Series of design tools (SwitcherPro, Filter Pro, and OpAmp Pro) and Amplifier and Interface Quick Searches.

Delta Mobile

Delta Mobile specializes in development of advanced wireless communication solutions and OEM Products across a wide range of wireless technologies including: VoIP, 802.11a/b/g, 802.15.4, GSM, CDMA, 3G, WiMax and Bluetooth. We employ powerful technology platforms to implement uniquely customized solutions based on flexibility, cost, fast time-to-market, high quality and strong collaborative relationships with key wireless chip suppliers.

Fractus: Optimized Antennas for Wireless Devices

Fractus designs and manufactures miniature and multi-band antennas using the space-filling and multilevel properties of fractals. Applying this unique technology to the short-range wireless applications, we help product developers increase their device competitiveness by increasing performance in a very small size and reducing BoM cost. Our standard antenna portfolio covers BluetoothR, WLAN, UWB and ZigBee standards, among other ISM bands. Fractus complements this product excellence with unparalleled technical support to give clients the confidence they need during all product development phases. Fractus' products are distributed in 73 countries worldwide by Richardson Electronics (www.rell.com).

Technology Exhibits

Ittiam Systems
Ittiam is a 3rd Party DSP Software and Systems Company. Ittiam has capabilities in all aspects of DSP application development: algorithm development, processor benchmarking and selection, optimized software implementation, and reference board design. On hand will be DM6446, DM642, DM320 demos running various audio/video clips in various different formats: H.264, MPEG4, MPEG2, WMV.

Logic Product Development
Logic PD is a world-class Product Development Services and Embedded Computing Products provider. Logic's Product Development Services group offers a comprehensive array of capabilities from initial product concept and design to volume production and fulfillment. Logic specializes in TI Davinci and OMAP designs and is a certified TI Application Solutions Provider (ASP). Logic's embedded solutions reduce product development time, cost, and risk, which enables our customers to rapidly develop their product.

L.S. Research: Wireless Product Development
L.S. Research provides a complete range of design services to get your wireless product from concept to production. Development teams consist of experienced engineers capable of handling a wide range of product applications. The project scope can range from turnkey, specific design service support, integration, product testing, or FCC/CE certification.

ObjectVideo
ObjectVideo is the leading provider of intelligent video software for security, public safety, business intelligence gathering, process improvement and other applications. Based upon patented computer vision technology, ObjectVideo products turn video into data to detect, classify and track objects of interest according to user defined rules. ObjectVideo intelligent analytics are available to original equipment manufacturers (OEMs) as ObjectVideo OnBoardTM, a DSP based application for inclusion into edge security and IT devices. The technology is being used in a variety of environments, from protecting U.S. Marines in a war zone to monitoring schools for student safety and security. ObjectVideo products address the needs of a variety of vertical markets that include Homeland Security, Transportation, Banking and Education.

Silicon Engines: DSP Design Consultants
Silicon Engines is an embedded systems design consultant working on a variety of industrial, automotive, and communications applications. Recent successful projects involving TI DSPs include the image scanning front end for an election machine (morphological image processing), and an audio spectrum analyzer for sound professionals. We will demonstrate these products at the Technology Day Exhibit.

Arrow- Strength and Performance at Your Fngertips
Come view the partnership of TI and Arrow. Experience leading edge technology and easy accessibility. TI and Arrow partner to offer customers the broadest selection of products; the most in-depth expertise from Arrow design engineers; the use of free tools through Arrow Testdrive program; extensive overall tool selection from arrowdevtools.com; and extensive industry design help from Arrow-certified design firms and engineers through Arrow ACES. Come experience the difference that TI and Arrow can make for you today.

Avnet...Support Across the Board
Learn about Avnet's ADS (Avnet Design Services) board offerings and our Power Products Support capabilities.

TEQ Sales – If we don't have it, you don't need it
TEQ Sales is a progressive manufacturer's representative offering a broad spectrum of marquee lines to help you be successful in your endeavors.

Arctronics
Arc-tronics is full service EMS provider for printed circuit boards, cable/harness assemblies, higher level integration and box build. We have a state of the art facility with the latest technology available in equipment for all aspects of the manufacturing process. We handle proto builds thru production in low to medium volume high mix production runs.

Circuit Service, Inc. – Error-Free Product On Time
From the simplest to the most complex boards, CSI's quick-turn prototype department delivers turnkey service for error-free assemblies delivered on time. CSI's focus on engineering and complex technologies (and RoHS-ready boards) equips customers to reliably and cost-effectively meet the demands of the most sophisticated end products. www.circuitservice.com

Circuit Works Corporation
Complete electronic manufacturing services from prototype through production. Capabilities include surface mount (BGA and fine pitch), through-hole, final assembly, conformal coating and test. Locations in Lake Bluff, IL and Mexico. RoHS conversion and assembly.

SigmaTron International, Inc.
SigmaTron is a leading provider of Electronic Manufacturing Services headquartered in Elk Grove Village, IL. With plants located in Illinois, California, Mexico(2), and China, SigmaTron is ready to offer you a single source for comprehensive electronic manufacturing and assembly. Our promise to our customers is to deliver world class quality at competitive prices with on time delivery all the time.

The Morey Corporation
People who demand enthusiasm, optimism, loyalty, stability, accuracy, directness, and immediate results choose Morey to design, develop, and manufacture world class hardened electronic assemblies. Morey is the low cost provider of reliable hardened electronics.

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Following are URLs where you can obtain information on other Texas Instruments products and application solutions:

Products		**Applications**	
Amplifiers	amplifier.ti.com	Audio	www.ti.com/audio
Data Converters	dataconverter.ti.com	Automotive	www.ti.com/automotive
DSP	dsp.ti.com	Broadband	www.ti.com/broadband
Interface	interface.ti.com	Digital Control	www.ti.com/digitalcontrol
Logic	logic.ti.com	Military	www.ti.com/military
Power Mgmt	power.ti.com	Optical Networking	www.ti.com/opticalnetwork
Microcontrollers	microcontroller.ti.com	Security	www.ti.com/security
Low Power Wireless	www.ti.com/lpw	Telephony	www.ti.com/telephony
		Video & Imaging	www.ti.com/video
		Wireless	www.ti.com/wireless

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