Technology Day Ft. Lauderdale
November 1, 2011

Time	Session	Wireless Connectivity	Power Supply Design	Signal Chain & Prototyping Tools	Embedded Processing
8:30 to 9 a.m.	**Registration**				
9 to 10 a.m.	1	Adding Wi-Fi and *Bluetooth* ® to TI embedded processors (MCUs and MPUs)	Powering Modern Applications Processors and FPGAs	Hands-On Workshop: Texas Instruments - MAVRK™ (Modular And Versatile Reference Kit) - A modular, system level evaluation tool (Part 1 of 3)	Introduction to the Stellaris® ARM® Cortex-M4F Family
10 to 10:15 a.m.	**Break**				
10:15 to 11:15 a.m.	2	*Bluetooth* ® Low Energy and ANT: Very Low Power Wireless Connectivity Solutions	Small form factor Solar Charging Solutions	Hands-On Workshop: Texas Instruments - MAVRK (Modular And Versatile Reference Kit) - A modular, system level evaluation tool (Part 2 of 3)	What's Next for TI's DSPs and ARM MPUs?
11:15 a.m. to 12:30 p.m.	**Lunch**				
12:30 to 1:30 p.m.	3	Hands-on Workshop: Understanding and Developing a ZigBee® System using the CC2530 ZigBee Network Processor (Part 1 of 3)	Single Cell System Concerns and Solutions	Hands-On Workshop: Texas Instruments - MAVRK (Modular And Versatile Reference Kit) - A modular, system level evaluation tool (Part 3 of 3)	Introduction to Code Composer Studio v5
1:30 to 1:45 p.m.	**Break**				
1:45 to 2:45 p.m.	4	Hands-on Workshop: Understanding and Developing a ZigBee System using the CC2530 ZigBee Network Processor (Part 2 of 3)	Reducing EMI: PCB Design Techniques	Op Amp Stone Soup: A "Cookbook" Collection of Single Supply Op Amp Circuits	Under the Hood of FRAM and the New MSP430FR57xx MCU Family
2:45 to 3 p.m.	**Break**				
3 to 4 p.m.	5	Hands-on Workshop: Understanding and Developing a ZigBee System using the CC2530 ZigBee Network Processor (Part 3 of 3)	Switching Power Supplies Made Easy with SwitcherPro™ and the New, Powerful TINA-TI™ v9	Maximizing the Performance of Audio CODEC's	Concerto MCUs - Eliminate Compromise by combining ARM Cortex-M3 with C28x in a Single-chip Solution

Texas Instruments

Tech Day: Ft. Lauderdale - November 1, 2011

Track & Course	Abstracts
Track 1 - Wireless Connectivity	
Adding Wi-Fi and Bluetooth to TI embedded processors (MCUs and MPUs)	Quickly and easily add Wi-Fi and/or Bluetooth technology to systems using TI MPUs (AM/DM37x, AM18x) and MCUs (MSP430). In this session, we will start with an overview of the WL1271-TiWi 802.11b/g/n + Bluetooth transceiver and CC2560-PAN1325 Bluetooth transceiver, and then go into the details of the platform. The platform provides complete system integration of all components including WLAN & Bluetooth hardware, host hardware, Linux WLAN drivers, supplicant, TCP/IP integration, Bluetooth stack, profiles, example code for configuration, and sample source applications. We will walk through the sample applications and explain how you can get started developing WiFi and Bluetooth applications.
Bluetooth Low Energy and ANT: Very Low Power Wireless Connectivity Solutions	Bluetooth Low Energy and ANT represent wireless standards operating in the 2.4GHz arena which are gaining lots of momentum due to their small size, reasonable cost and Very Low Power requirements. They enable communication between self powered devices in an extensible network environment. This session will be presenting an overview of the BLE and ANT standards before diving into the key care-abouts and challenges when designing with these two protocols. The session will then cover on how to setup a quick BLE and ANT link.
Hands-on Workshop: Understanding and Developing a ZigBee System using the CC2530 ZigBee Network Processor (Part 1 of 3)	This 3-hour workshop will introduce you to ZigBee and how to build a ZigBee Application by understanding the design process for a ZigBee Network Processor. You will come away from this workshop understanding how to set up a ZigBee Mesh Network using ZigBee coordinators, routers, and end devices. You will run Packet Sniffers and then observe the Personal Area Network (PAN) traffic over the network. Other features to be learned are Mesh Routing, Network Commissioning, PAN Formation. Laptops will be provided and all attendees will leave with a CC2530ZNP Mini Development Kit (CC2530ZDK-ZNP-MINI).
Hands-on Workshop: Understanding and Developing a ZigBee System using the CC2530 ZigBee Network Processor (Part 2 of 3)	Continued
Hands-on Workshop: Understanding and Developing a ZigBee System using the CC2530 ZigBee Network Processor (Part 3 of 3)	Continued
Track 2 - Power Suppy Design	
Powering Modern Applications Processors and FPGAs	The presentation is centered about the power supply of FPGA and modern application processors like TI AM35xx, AM L1xx, DM3xx and processors from competitors like Freescale iMX, Samsung 3SC64xx, SiRF Atlas IV and Nvidia Tegra series. We will present the power and sequencing requirements and how they can be implemented using TI Catalog Power Managment ICs. Circuit examples, reference designs, and new power management ICs that make designing a power supply for FPGAs and processors easier will be shown.

Texas Instruments

Tech Day: Ft. Lauderdale - November 1, 2011

Track & Course	Abstracts
Small form factor Solar Charging Solutions	Much visibility has been given to photovoltaic (PV), or solar, energy as an alternative means for powering the grid and/or the home. Relatively small, portable type solar applications will dominate the market in terms of number of systems built and revenue generated. Small form factor solar system revenue is estimated to be 50-100 times larger than high power solar application revenue. The reason for this is a combination of cost, number of applications, and access to the grid. There is a great need for electrical energy in areas that have no access to the grid, nor could afford the high cost of the kilowatt solutions. Solar-charged battery applications such as solar lanterns and solar water pumps provide invaluable resources to regions of the world without prior access to such. This session helps you understand the basics of PV energy harvesting and the key care abouts in these types of systems. It introduces you to two new TI products specifically designed for medium- and low-power solar charging applications (bq24210 and bq24650). You will learn how to optimize these solutions to maximize overall charging efficiency. The presentation puts these concepts into practice with a solar lantern power design example. You will leave this presentation with the capability to optimize a solar charging solution which will help you beat the competition and generate design wins in solar applications
Single Cell System Concerns and Solutions	This session will focus on system level design concerns and solutions for system side and pack side single cell equipment. Emphasis placed on lessons learned and solving cusomer typical questions / issues. This session assumes attendance of Battery Basics session or equivilant knowledge level.
Reducing EMI: PCB Design Techniques	An application-based course that discusses PCB circuit design techniques to reduce EMI. Focus is on placement & partitioning of noise & victim circuits, understanding current paths, proper decoupling, identifying & reducing coupling paths, & identifying unintentional antennas. Other proven PCB design tips & strategies are included. Examples of measured EMC improvements are also shown for a couple different cases.
Switching Power Supplies Made Easy with SwitcherPro and the New, Powerful TINA-TI v9	In this hands-on training session you will learn to generate custom power solutions in minutes with SwitcherPro from Texas Instruments. SwitcherPro allows you to: Select TI parts and real world components. Analyze designs for efficiency, stability, size and other design factors. Modify designs to meet your needs with 'Design Options', 'What if Analysis', and 'User Defined Parts'. Review your designs in the Design Report complete with a full Bill of Materials and notes for Layout. Please bring a laptop if you wish to follow along.
Track 3 - Signal Chain & Prototyping Tools	
Hands-On Workshop: Texas Instruments - MAVRK (Modular And Versatile Reference Kit) - A modular, system level evaluation tool (Part 1 of 3)	During this workshop, customers will learn how to use Texas Instruments' common footprint of MAVRK modules which will allow participants to quickly evaluate multiple configurations without major modifications. Each MAVRK module is a reference level design that allows full performance evaluation of the device in the system. The MAVRK system is motherboard based, allowing multiple combinations of RF, ADC, DAC, MCU, transceiver, signal conditioning and driver circuits to be configured to a system level design. The MAVRK concept is not wholly designed around hardware. Its design methodology incorporates documented modular software, firmware, reference hardware, and an initiative GUI to enable rapid proof of concept of a system. The ultimate goal of the open source MAVRK platform is to reduce final system development time by up to 9 weeks. During this hands-on session we will utilize the MAVRK platform and several component level demos to show how they can be manipulated to design a multi-component system. Pre-requisites for this course are a working knowledge of C programming and a copy of Code Composer Studio 5.1. Please bring your own laptops and information will be provided on where to download the CCS5.1 prior to the session. Knowledge of the IAR EW430 or the Code Composer Studio C design environments are a bonus. For more information on MAVRK, please visit us at www.ti.com/mavrk
Hands-On Workshop: Texas Instruments - MAVRK (Modular And Versatile Reference Kit) - A modular, system level evaluation tool (Part 2 of 3)	Continued.

Texas Instruments

Tech Day: Ft. Lauderdale - November 1, 2011

Track & Course	Abstracts
Hands-On Workshop: Texas Instruments - MAVRK (Modular And Versatile Reference Kit) - A modular, system level evaluation tool (Part 3 of 3)	Continued.
Op Amp Stone Soup: A "Cookbook" Collection of Single Supply Op Amp Circuits	This presentation offers a “Stone Soup” collection of useful op amp circuits to solve linear application problems on a daily basis. Each op amp circuit (pre-built in the included TINA SPICE schematic) is presented as a definition-by-example with a brief overview of its functionality, applicable transfer function and/or waveforms and key equations for re-scaling the function to your exact application. A sampling of the ingredients include the following circuits: Voltage-to-Current Conversion, Drive Circuits (Bridge-Tied-Load, Parallel Op Amps, High Current Cascade Reference Buffer), Translation Circuits (Single-Ended to Differential, Differential to Single-Ended, Differential In to Differential Out), Conditioning Circuits (Full-Wave Rectifier, Supply Splitter, Integrator Amp in Feedback, Isolation Amplifier, G=1/G=-1 amp), and Comparator Circuits (AC Coupled, Comparator with Hysteresis).
Maximizing the Performance of Audio CODEC’s	This presentation will offer insight into maximizing the audio performance of your audio CODEC design. We will walk through several actual designs using the AIC310x family of CODECs and offer advice on how to avoid common pitfalls. Specifically, we will address avoiding clicks and pops, maximizing SNR and THD performance, using the PLL while avoiding software surprises, and how to properly use advanced features such as headphone detect.
Track 4 - Embedded Processing	
Introduction to the Stellaris® ARM® Cortex-M4F Family	In this session we will take an in-depth look at the new Stellaris(r) ARM(r) Cortex(tm)-M4F family.
What’s Next for TI’s DSPs and ARM MPUs?	TI’s embedded processors features a variety of DSP and ARM MPU options with peripherals specifically targeted to improve performance for applications from portable to infrastructure. Join this session to learn more about the roadmap for TI’s DSP and ARM based 16- and 32-bit fixed- and floating-point processors.
Introduction to Code Composer Studio v5	Learn about what is coming in Code Composer Studio v5. Get involved in the program early so that you can help guide its development. Code Composer Studio v5 is based on the latest Eclipse release and includes a lot of changes and improvements over CCSv4. This session will cover the objectives of CCSv5, beta program information, migration from previous versions of CCS. While CCSv5 will not replace CCSv4 until 3Q11 it is included in a number of SDKs and customers have already begun using it.
Under the Hood of FRAM and the New MSP430FR57xx MCU Family	This session is intended to introduce MCU designers to the latest in non-volatile memory technology – Ferroelectric RAM (FRAM). You will gain experience with MSP430’s first FRAM offering – the MSP430FR57xx family and become familiar with key architecture blocks such as the new power management module, clock system and FRAM controller. Advantages unique to FRAM such as ultra low active power, fast writes and unified code memory will be covered and attendees will learn about tools available to aid in starting development with this new addition to the MSP430 portfolio.
Concerto MCUs - Eliminate Compromise by combining ARM Cortex-M3 with C28x in a Single-chip Solution	Real-time control, connectivity, and software simplicity come together in TI’s Concerto MCU Series. Building on C2000’s industry-leading C28x core and control peripherals, Concerto MCUs add a host subsystem, consisting of the ARM Cortex-M3 core and new communications peripherals such as USB OTG and Ethernet. Combined, Concerto MCUs’ Host and Control subsystems make a cleanly partitioned, single-chip solution to eliminate compromises. Learn more about Concerto MCUs and how you can simplify hardware AND software development in application areas including industrial control, renewable energy, digital power, electric vehicles, and more.

Texas Instruments

Tech Day: Ft. Lauderdale - November 1, 2011

Track & Course	Abstracts