



Technology Day San Jose – May 3, 2011

Time	Session	Software Development I	Software Development II	Applications Solutions	Linux Track	Wireless Connectivity Solutions	Battery Management	Applications Solutions II	Power and Energy Solutions
8 to 9 a.m.	Registration & Booths / Continental Breakfast								
9 to 10 a.m.	1	Enabling and Accelerating Android on Sitara™, Integra™ and DaVinci™ Devices (Part 1)	Hands-on Workshop: Touch using MSP430™ – Design, Libraries and Programming with Capacitive Touch BoosterPack (Part 1)	TI Metering Solutions: ZigBee Smart Energy for the HAN	TI's Community Linux Strategy and Partners for DaVinci™, Integra™, OMAP™ and Sitara™ Processors	Design Solutions for High-Fidelity Wireless Audio Using TI's PurePath™ Technology	Wireless Power: Total Solution for Charging Using the Wireless Power Consortium Standard	Introduction to Touch-Screen and Haptic Technologies	SwitcherPro™ Software: Switching Power Supply Design Made Easy
10 to 10:30	Break / Booths								
10:30 to 11:30 a.m.	2	Enabling and Accelerating Android on Sitara™, Integra™ and DaVinci™ Devices (Part 2)	Hands-on Workshop: Touch using MSP430™ – Design, Libraries and Programming with Capacitive Touch BoosterPack (Part 2)	Home Entertainment and Streaming Systems <i>by Ittiam</i>	Go Green – Utilize New Linux Power Management APIs to Lower System Cost Via Reduced Power Requirements	Lower Power RF Design Tools to Help During Characterization and Testing of Your RF Products	Charging System Considerations for Single-Cell Products	ESD Protection: Protecting the Complete System	Energy Harvesting, Wireless Charging and Zero Power Devices <i>by Cymbet</i>
11:30 a.m. to	Lunch / Booths								
1 to 2 p.m.	3	StellarisWare™ Software (Advanced) – Taking Your Knowledge to the Next Level	Bringing the DSP Closer to ARM Developers	Video Communications – Consumer and Enterprise <i>by Ittiam</i>	Linux Application Debugging with Code Composer Studio™ IDE	CC2530ZNP: A Fast and Efficient Way to Get Your ZigBee/IEEE 802.15.4 Product Designed	High Efficiency Switch-Mode Charger Solution for Portable Applications Such as Tablets	Compensating for Sensor Drift and Nonlinearity	LED Lighting: Solutions that are ready by using TI Lighting Reference Designs
2 to 2:15 p.m.	Break / Booths								
2:15 to 3:15 p.m.	4	Accelerating Performance of Qt	Adobe Flash and AIR for TI Embedded Processors	Designing Motor Controls <i>by D3</i>	Linux Embedded Processing Development Made Easy (Part 1)	Bluetooth® Low Energy and ANT: Very Low Power Wireless Connectivity Solutions	Emerging High-Power Battery Gauging and Protection: Lithium Ion and Super Capacitor	3-D Measurement Using Structured Light	Save Energy with LED Lighting and Intelligent Sensing
3:15 to 3:30 p.m.	Break / Booths								
3:30 to 4:30 p.m.	5	C Compiler Tips and Tricks	Jumpstart your Digital Media Development with New TI SDKs	Analog Motor Drivers: Steppers, Microsteppers and DC Motors	Linux Embedded Processing Development Made Easy (Part 2)	How to Add Wi-Fi and Bluetooth® to OMAP™ and Sitara™ Processor-Based Systems	Battery Authentication Using Fuel Gauges with Security Features	Echo Cancellation and Noise Suppression for Voice-Band Applications Using TI Audio Codecs with miniDSP	Small-Form-Factor Solar-Charging Solutions

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Session Titles and Abstracts

Track and Course	Abstracts
Track 1 – Software Development I	
Enabling and Accelerating Android on Sitara™, Integra™ and DaVinci™ Devices (Part 1)	With the availability of Android for TI's Cortex™-A8-based devices, developers are now able to use the unique power of the Android application framework to create new, compelling designs. Attend this session to learn about Android fundamentals, including key benefits, architecture review, how Android can benefit different end equipments and applications (including voice/video applications), and the TI/Android roadmap.
Enabling and Accelerating Android on Sitara™, Integra™ and DaVinci™ Devices (Part 2)	With the availability of Android for TI's Cortex™-A8-based devices, developers are now able to use the unique power of the Android application framework to create new, compelling designs. Attend this session to learn about Android fundamentals, including key benefits, architecture review, how Android can benefit different end equipments and applications (including voice/video applications), and the TI/Android roadmap.
StellarisWare™ Software (Advanced) – Taking Your Knowledge to the Next Level	In this advanced session, we will cover the specific components that make up StellarisWare™ software, including the Stellaris peripheral driver library, USB library, graphics library, serial flash loader and boot loader. In addition, we will review the rich set of code examples provided in the Stellaris® processor family and the in-system programming support.
Accelerating Performance of Qt	At Texas Instruments, Qt is adopted as a standard application and UI framework to create and deploy "wow" out-of-box demos that showcase our chip's hardware capabilities. The various easy-to-use Qt modules and frameworks have enabled us to develop and deploy demo applications quickly, allowing better code access and faster software delivery to our customers. This presentation discusses why we chose Qt at Texas Instruments, how Qt is accelerated by leveraging the hardware capabilities of the device architecture, and explore some unique case studies of Qt-based demo applications used across TI's embedded processors.
C Compiler Tips and Tricks	This presentation is intended for those new to TI C/C++ compiler tools. It is a collection of tips and tricks beginners usually find useful. The information applies equally well to all TI compilers. Those with experience programming general-purpose processors will appreciate the tips on how things differ when programming for TI embedded processors.
Track 2 – Software Development II	
Hands-on Workshop: Touch using MSP430™ – Design, Libraries and Programming with Capacitive Touch BoosterPack (Part 1)	This session helps you expand the functionality of your MSP430™ Value Line LaunchPad kit with the Capacitive Touch Booster Pack. Learn how to use the capacitive touch software libraries to interface your value line devices with cap touch buttons, sliders and wheels.
Hands-on Workshop: Touch using MSP430™ – Design, Libraries and Programming with Capacitive Touch BoosterPack (Part 2)	This session helps you expand the functionality of your MSP430™ Value Line LaunchPad kit with the Capacitive Touch booster pack. Learn how to use the capacitive touch software libraries to interface your value line devices with cap touch buttons, sliders and wheels.
Bringing the DSP Closer to ARM Developers	For traditional ARM developers, the effort to understand DSP architecture and development environment seems like a difficult task. Also, if the application doesn't have a clear partitioning such that the application code can be split cleanly between the ARM and the DSP, it may seem easier to implement the entire application on the ARM processor. TI has been working on creating examples and techniques to allow such developers leverage the DSP MHz to extend the capabilities of their applications. This session will provide a detailed overview of the C6EZRun tools. These tools and techniques not only remove the bottle neck of the significant ramp-up needed to leverage DSP, but also present DSP as an extension to ARM. With the C6EZRun tool, we have a simple software migration strategy as customers move from ARM-only to ARM+DSP parts.
Adobe Flash and AIR for TI Embedded Processors	Adobe Flash 10 and AIR 2 are two very popular video and gaming players that have had huge success in the PC and mobile markets and are making their way into more consumer and general embedded electronics (think GoogleTV). Flash is embedded in a browser and runs in Linux, Android, Compact 7 and other OSs where the device is connected to the Internet and leverages open content such as video, animation and games. AIR is the follow-on to Flash Lite. It is used stand-alone (without a browser) and can be found in multifunction printers, industrial automation control panels and interactive kiosks. This session will provide an introduction to Adobe Flash 10 and AIR products for TI's embedded processors based on the ARM® Cortex™-A8 (Sitara™, Integra™ and DaVinci™ product families) and what markets they are prevalent in.
Jumpstart Your Digital Media Development with New TI SDKs	This session provides an overview of TI's latest SDKs featuring the Matrix user interface for intuitive set up and navigation among applications. A networked video application will be created on the DM3730 EVM using the included Linux board support package, codecs and industry-standard frameworks such as GStreamer and Qt. The application will take full advantage of the DM3730's ARM® Cortex™-A8, high-definition video accelerator and PowerVR 3-D graphics accelerator. Procedures for integrating your own codec as well as adding Wi-Fi and Bluetooth® support will also be highlighted. Join this session to understand TI's latest SDKs and how they can be used to quickly develop advanced networked video applications with sophisticated user interfaces.



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Track 3 – Application Solutions	
TI Metering Solutions: ZigBee Smart Energy for the HAN	This presentation provides an in-depth discussion of how the ZigBee Smart Energy application profile is used by devices in the home area network (HAN) for smart grid deployments. We will cover an example ecosystem of an energy service portal (ESP), an in-premise display (that displays price and consumption information to the user), load control and simple meter devices (such as a gas meter) to explain the secure communication model of such a network, as well as commissioning aspects related to ZigBee Smart Energy security. We will also discuss available TI system solutions for ZigBee HAN devices.
Home Entertainment and Streaming Systems by Ittiam	<p>In recent years, there has been a widespread deployment of Internet connectivity to homes across the globe and high-bandwidth availability that ranges in several megabits per second, in both wired as well as wireless topologies. Together with the streaming and storage capabilities enabled by the processors, this can enable a plethora of entertainment and data-access scenarios where media compression/decompression, packet handling and streaming are required. Also, the avenues for home access to data and media have multiplied manifold in terms of end equipment like laptops, DVDs and BluRay players, IPTVs, digital photo frames, digital video recorders (DVRs), IP set-top boxes, tablets, smart phones, gaming consoles, multimedia door-bells, security equipment, storage devices and VoIP phones. Topping it all is the advent of myriad new-age apps like Facebook, YouTube, Twitter, Skype, Flickr, blog sites and other interactive modes of data and media exchange/transfer (such as Netflix). The introduction of vectors like high-definition (HD) video and psycho-acoustic audio enhancements makes these even more attractive and lifelike. Products today allow for seamless i</p> <p>In this presentation, we intend to present the following topics to the audience:</p> <ul style="list-style-type: none">• Overview of typical home entertainment and streaming solutions• Overview of key technologies and standards• Software and hardware challenges in system design• Embedded multimedia offerings on home entertainment and streaming systems• System solutions that can be realized to leverage the true potential of TI next generation platforms with available technology solutions
Video Communications – Consumer and Enterprise by Ittiam	<p>Communication has always been a quintessential part of human interaction and hence at the pinnacle of invention. We have come far from the days of pigeon carriers to modern-day cell phone communications. However, this has always been either text-only or voice-only communication and often non-real-time. Today, with improvements in infrastructure, video communications promise to bring people closer than ever before through videophones or other video communications-enabled devices. Video conferencing, or video communication, is a real-time interactive event where the user feels truly and closely connected. The video in the video communication may range from pictures of the participants, video clips and documentations (such as photos, diagrams, charts, graphics, etc.) to live video; the audio may include real-time audio signals from participants, as well as other audio and sound signals. With rapid development of communication infrastructures, broadband, 3G/4G wireless technologies, and the availability of fast video processors, a simple peer-to-peer video telephony is no longer a big deal. The challenge needs to be taken to the next level of being able to connect multiple people at the same time via multiparty/bridging scenarios. In this presentation, we intend to present how video communication systems work, with a brief history and applications; audio and video compression for video communication (audio/speech and video codecs and their customization); quality of service (QoS) for video communication; protocols and standards (ITU H.3xx and SIP); design considerations and implementation on TI platforms; and what's next for the technology. We will also run a real-time demo of a videophone with a built-in HD AV bridge on a TI platform.</p>
Designing Motor Controls by D3	This session explores the process of designing a low-voltage motor and motion control system, including analog motor drivers, microcontrollers, hardware reference designs, modular software libraries, debugging tips and creating GUIs for interface and instrumentation.
Analog Motor Drivers: Steppers, Microsteppers and DC Motors	This session will walk thru the TI Solutions for Motor Drivers, which are all inclusive to the DRV8x product family. Solutions will be provided for several stepper motor examples such as micro-stepping, driving two stepper motors from a single driver, dual H-bridge driver with micro-stepping indexer, and motor driver control through a serial interface. Many other features will be discussed such as PWM current control, programmable decay modes, and all the protection features that a motor driver should have. Coming out of this session, you will fully understand what TI products fit your application best.



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Track 4 – Linux Track	
TI's Community Linux Strategy and Partners for DaVinci™, Integra™, OMAP™ and Sitara™ Processors	Initially, TI offered only a single commercial Linux offering – MontaVista Linux – to customers requiring Linux on TI devices. TI is now releasing community Linux kernels for its devices, along with the associated SDKs and DVSDKs. These community Linux kernels give full access to "free Linux" and have enabled multiple commercial Linux companies to support TI devices. This presentation will begin by describing the community Linux distributions TI is releasing, when they will be available, how to obtain them and the support model. It will conclude by overviews TI's commercial Linux product and consulting partners and the additional value they offer beyond pure community Linux.
Go Green – Utilize New Linux Power Management APIs to Lower System Cost Via Reduced Power Requirements	Embrace the green initiative by using power-reduction design techniques with AM1808/OMAPL138 processors, while also lowering system cost. Learn how to take advantage of new techniques that have recently become available such as "runtime power management" in Linux kernel 2.6.32. Embedded systems designers who liked the wide selection of I/O peripherals from the AM1808/OMAPL138 processor as well as its low overall power consumption can now harness these features via embedded Linux. This presentation will provide an overview of AM1808/OMAPL138 power control features and detail how embedded applications can take advantage of Linux and DSP/BIOS™ software kernel foundation power management APIs (OMAPL138 only) to save average power during runtime.
Linux Application Debugging with Code Composer Studio™ IDE	Learn how to develop and debug Linux applications using Code Composer Studio™ software v5. Many customers of Sitara™, Integra™ and DaVinci™ processors spend much of their time developing Linux applications. In this session, you will learn how the Code Composer Studio IDE can be used for both kernel-level as well as application debugging.
Linux Embedded Processing Development Made Easy (Part 1)	Linux development on ARM-based microprocessors can be a daunting task. The purpose of this session is to introduce the Texas Instruments Sitara™ Linux software development kit (SDK). The SDK provides customers with a unique out-of-the-box experience and a quick path to their application development. The Sitara Linux SDK accomplishes this by providing example applications for key, high-touch IP and peripherals. This session will also discuss Matrix, a Qt/Embedded Web kit-based HMI and application launcher; the SDK installer; and Code Composer Studio™ software v5, an Eclipse-based IDE for Linux application development and debugging.
Linux Embedded Processing Development Made Easy (Part 2)	Linux development on ARM-based microprocessors can be a daunting task. The purpose of this session is to introduce the Texas Instruments Sitara™ Linux software development kit (SDK). The SDK provides customers with a unique out-of-the-box experience and a quick path to their application development. The Sitara Linux SDK accomplishes this by providing example applications for key, high-touch IP and peripherals. This session will also discuss Matrix, a Qt/Embedded Web kit-based HMI and application launcher; the SDK installer; and Code Composer Studio™ software v5, an Eclipse-based IDE for Linux application development and debugging.
Track 5 – Wireless Connectivity Solutions	
Design Solutions for High-Fidelity Wireless Audio Using TI's PurePath™ Technology	TI is introducing the CC8520 wireless audio transceiver, which is capable of streaming uncompressed wireless audio at 44.1/48 kHz and 16 bits of resolution. This presentation will give a brief introduction to the CC8520 and demonstrate the development tools used to build a wireless audio application. A live demonstration and measurement results from coexistence and range testing will be presented to illustrate the robustness of the PurePath™ Wireless audio solution. Target applications for the CC8520 are wireless point-to-point audio streaming, wireless subwoofer, wireless speakers and wireless headphones.
Lower Power RF Design Tools to Help During Characterization and Testing of Your RF Products	SmartRF™ Studio is a development tool designed to help you understand the operation and analyzing of Texas Instruments Low Power RF products. The tool provides an easy to use graphical user interface to control all of the chip's main RF parameters and it can be used for performance testing and for finding the appropriate RF configuration settings for your system. The goal for this session is to familiarize you with SmartRF™ Studio and learn how it works and what it can do. You will learn how to use the tool to measure the output power from an RF transmitter, how to check the link quality and measure the packet error rate, how to export settings from Studio for direct integration in your software and how to customize the tool for your own needs.
CC2530ZNP: A Fast and Efficient Way to Get Your ZigBee/IEEE 802.15.4 Product Designed	A quick way to have your ZigBee/IEEE 802.15.4 product designed in a short timeframe is to use a ZigBee network processor such as the CC2530ZNP. The CC2530ZNP has the stack already loaded in the device and requires a very simple microcontroller to run the customer application code. It provides a simple, off-the-shelf ZigBee solution without requiring designers to learn the complexities of a full ZigBee stack. The CC2530ZNP also allows customers the flexibility to use their existing host processor to run application code, while the CC2530ZNP supports the networking component of the system. This session will focus on the CC2530ZNP as well as the key critical steps that need to be considered when designing with the CC2530ZNP. Presenters will show how to set up a very quick ZigBee or RF4CE link using the CC2530ZNP.
Bluetooth® Low Energy and ANT: Very Low Power Wireless Connectivity Solutions	Bluetooth® low energy (BLE) and ANT represent wireless standards operating in the 2.4-GHz arena, and 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 present an overview of BLE and ANT standards before diving into the key caveats and challenges when designing with these two protocols. The session will then cover how to set up a quick BLE and ANT link.
How to Add Wi-Fi and Bluetooth® to OMAP™ and Sitara™ Processor-Based Systems	Quickly and easily add Wi-Fi and Bluetooth® technology to systems using MPUs like the AM/DM37x and AM18x. In this session, we will start with a detailed overview of the WL1271-TiWi 802.11b/g/n + Bluetooth® transceiver and then go into the details of the platform. The platform provides complete system integration of all components including WLAN and Bluetooth® hardware (WL1271-TiWi), host hardware (AM/DM37x, AM18x), Linux WLAN drivers, supplicant, TCP/IP integration, Bluetooth® stack, profiles, example code for configuration, and sample source applications. We will demonstrate how to establish a Wi-Fi and Bluetooth® connection by showing a sample application running on an AM/DM37x EVM.



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Track and Course	Abstracts
Track 6 – Battery Management	
Wireless Power: Total Solution for Charging Using the Wireless Power Consortium Standard	TI launched its first wireless power solution for the mass market, called the bqTESLA100LP solution. This Qi-compatible kit includes both transmit and receive ICs, plus design, to take a Wireless Power Consortium-based solution to market today. We will discuss the basics of wireless power, the Wireless Power Consortium and the TI devices that make up our first-generation solution in this session.
Charging System Considerations for Single-Cell Products	With so many options available to design your charging systems on portable products, it can be confusing to decide which topology you should select for your system. This presentation will cover the typical problems encountered during charging system design and how TI's portfolio of single-cell battery chargers help you solve these problems. Example problems to be covered include instant system power-up need, USB charging, thermal issues, how to handle weak adaptors and others.
High Efficiency Switch-Mode Charger Solution for Portable Applications Such as Tablets	Portable equipment continues to be a promising growth area with products such as tablets, point-of-sale terminals, etc. This topic will review charger system requirements including battery pack configuration; charging requirements; and system configuration between the charger, battery and systems. Switch-mode charger topologies including power path and NVDC chargers and design for achieving best system performance will be discussed. Both single-cell and multicell battery charger solutions will be covered. This topic will be presented from a tablet point of view, but would be applicable to many systems.
Emerging High-Power Battery Gauging and Protection: Lithium Ion and Super Capacitor	Battery management has outgrown the mobile and PC space. Power tools, e-bikes, 48V UPS, enterprise SSD – all require intelligent control of the stored energy. High-power lithium chemistries and super capacitors provide the source, while TI provides the IC required for protection and energy management.
Battery Authentication Using Fuel Gauges with Security Features	Counterfeit batteries not only cause short system life but have also imposed safety issues. More and more battery-pack makers and system OEM/ODM manufactures are looking into battery authentication applications to eliminate the use of counterfeit batteries. Fuel gauges with security features can be used for power management as well as battery authentication. In this presentation, different topologies of battery authentication schemes will be discussed using stand-alone security IC and fuel gauges that have security features.
Track 7 – Applications Solutions II	
Introduction to Touch-Screen and Haptic Technologies	This session will discuss the fundamentals of operation and key design considerations when choosing between resistive and capacitive touch-screen technologies. No longer is multitouch a capacitive-only feature. Making multitouch affordable, we'll introduce the TI TSC2020 resistive multitouch controller. We'll also delve into the need for greater tactile response from touch-screens and the haptic options available to create a more immersive user experience.
ESD Protection: Protecting the Complete System	System-level ESD protection at the interface connector is particularly challenging. Semiconductor chips based off advanced-low-voltage, small-geometry process nodes enable miniaturization, more power savings and better economy of scale. But it poses an even bigger challenge to provide ESD immunity since it becomes more difficult to design robust ESD solutions as the process geometry gets smaller. External ESD clamp circuits or integrated protection devices are popular choices to enhance system-level ESD protection. This presentation will cover key system-level ESD challenges, common techniques to improve overall system-level ESD performance, TI's IPD solutions and selecting the right ESD clamps for a given application.
Compensating for Sensor Drift and Nonlinearity	This presentation will introduce PGA308/309 integrated programmable bridge sensor conditioners, Texas Instruments devices designed for sensor signal conditioning. Detailed reference designs will illustrate how to make the design reliable, robust and accurate through input/output filtering, EOS protection, and other tips and tricks. Practical mathematics needed to calibrate the drift and nonlinearity of sensors will be discussed, along with calibration techniques for the PGA309. Finally, we will introduce different Texas Instruments hardware and software tools that can be used to help engineers develop their sensor products.
3-D Measurement Using Structured Light	Structured light is one of the most commonly used techniques to obtain 3-D optical measurements. The goal of a 3-D optical measurement system is to capture the shape of an object in order to construct a three-dimensional model that can be used for measurements and analysis. Applications range from machine vision systems that perform volumetric inspection in an assembly line to biometric systems that perform 3-D facial recognition. Optical measurement systems offer various advantages over the traditional contact method – where a probe contacts an object multiple times – since the measurements can be taken at a faster rate and are not likely to disrupt the object. Three different techniques stand out when considering optical systems: stereoscopic, single-line scanner and structured light. All three are generally based on the same principle of triangulation, but perform differently in terms of speed, accuracy and resolution. DLP® technology-based structured light systems speed up the measurement process by using a digital projector to display a known pattern onto the object and a camera to capture the distortion of the pattern as it reflects from it. System considerations, including accuracy, resolution and speed for the three optical measurement techniques will be discussed.
Echo Cancellation and Noise Suppression for Voice-Band Applications Using TI Audio Codecs with miniDSP	TI provides a solution for voice-band echo cancellation and noise suppression using the signal processing capabilities of audio codecs with miniDSP. We'll discuss the problem of echo, microphone and speaker considerations, echo cancellation and noise suppression implementation using components and process flows in PurePath™ Studio software. We will show an actual example implementation using TI audio codecs and demonstrate how to use the PurePath Studio graphical development environment.



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Track and Course	Abstracts
Track 8 – Power and Energy Solutions	
SwitcherPro™ Software: Switching Power Supply Design Made Easy	In this hands-on training session, you will learn to generate custom power solutions in minutes with SwitcherPro software from Texas Instruments. SwitcherPro software allows you to select TI parts and real-world components and 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.
Energy Harvesting, Wireless Charging and Zero Power Devices <i>by Cymbet</i>	New techniques and technologies are now available to create self-powered devices by harvesting ambient energy. Actual energy harvesting (EH)-based designs will be reviewed that use photovoltaic, piezoelectric, thermoelectric and electromagnetic EH transducers. New technologies in the areas of ultra-low power MSP430™ MCUs, CC430 combination MCU/integrated radios, wireless charging and communications using the TI passive low frequency interface device (PaLFI), energy processors, solid-state batteries, and solar energy harvesting for the TI MSP430 LaunchPad kit will be detailed. The last portion of the session will include hands-on lab demos of various energy-harvesting implementations.
LED Lighting: Solutions that are ready by using TI Lighting Reference Designs	As LED Lighting is becoming more prominent, Texas Instruments continues to develop solutions for different LED Lighting situations and applications. This session will walk through several solutions that are available from TI in a reference design and discuss the technical details behind each such as operating voltage range, power-factor correction, efficiency, dimming, isolation methods, etc. We will also explain what we mean by an EVM (Evaluation Module) vs a Reference Design. Examples of some of the referenced designs discussed will be a 20W T8 Light Bulb Replacement that uses a single stage PFC Flyback Topology, a 9W PAR30/38 Light Bulb Replacement which uses a buck topology and is TRIAC dimmable, a 13W Light Bulb replacement using an isolated PFC Flyback topology which would take in a universal AC Input, and an MR16 Light Bulb replacement using new LEDs from Cree.
Save Energy with LED Lighting and Intelligent Sensing	The main benefit of LEDs is that you can save energy by dimming the light. So what about an intelligent light that is aware of its environment and communicates to other lights on the need for illumination? From simple temperature measurement, ambient light and occupancy sensing using TI MCUs and DSPs, to wired and wireless communication protocols, TI's software and hardware solutions help to design intelligent lighting.
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 or areas that cannot afford high-cost 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. This session helps you understand the basics of PV energy harvesting and the key careabouts 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 that will help you beat the competition and generate design-wins in solar applications.

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