Arrow Technology Expo – Technical Class Descriptions

Thursday, October 23, 2025
8:30am to 3:00pm

Sessions

Session #1 - 8:30am to 9:30am

Adam Tech
Solving Design Challenges with Custom Connectivity

Join Adam Tech to explore our latest interconnect solutions. Showcasing connectors, cable assemblies, and custom offerings for EV, AI, industrial, energy, medical, and consumer devices. Learn how our integrated manufacturing and global support accelerate development and deliver tailored quality solutions.

Honeywell
Pressure Sensors & NPI

Pressure and Liquid Flow Sensors for Medical, Industrial and Aerospace applications. Pressure and flow sensors are crucial components in various critical systems across industries, from aerospace to healthcare. Their ability to provide accurate and reliable measurements of pressure changes makes them indispensable in ensuring the safety and functionality of critical requirements. You will find our components performing in potential applications including dialysis equipment, blood analysis, centrifuging and oxygen and nitrogen gas distribution, HVAC devices, data storage, process controls, industrial machinery, pumps, and robotics.

Nuvoton
Designing for Efficiency: Leveraging Low Power Features of Nuvoton M2L31 for Power-Sensitive Applications

As the demand for battery-powered and energy-efficient devices continues to grow, developers are increasingly seeking microcontrollers that balance performance with ultra-low power operation. This session explores how Nuvoton's M2L31 Series, based on the Arm® Cortex®-M23 core, enables highly optimized, power-sensitive product designs. Attendees will gain insight into the M2L31's rich suite of low power modes, autonomous power domains, low power peripherals, the Power-Down Wake-Up Controller (PDWC) and power saving Resistive RAM technology. Real-world use cases will illustrate how to take full advantage of these features to extend battery life, reduce energy consumption, and achieve robust performance in IoT, wearable, and industrial sensing applications.

Qualcomm
Moving AI/ML to the Edge is getting easier with a little help from Qualcomm.

Today, more intelligence is moving to end devices. Building on the smartphone foundation and the scale of mobile, Qualcomm envisions making AI ubiquitous expanding well beyond mobile and powering other end devices, machines, vehicles, and things. We are inventing, developing, and commercializing power-efficient on-device AI, edge cloud AI, Wi-Fi, BT/BLE, and 5G to make this a reality. And it's getting easier!

TDK

Optimizing FPGA, ASIC, MCU/MPU, and SoC Power Designs with TDK's µPOL Power Modules

Designing efficient, scalable power solutions for FPGAs, ASICs, MCUs/MPUs, and SoCs requires innovation in both size and performance. In this session, we will explore how TDK's ultraminiature, chip-embedded power modules enable streamlined DC-DC conversion from 3A to 200A, with options for SmartVID compatibility. Attendees will gain insight into schematic best practices, view the applicable simulation models using QSPICE and SIMPLIS models, and discuss how TDK's evaluation tools can speed development. Live simulation demos and hardware examples will illustrate how to bring high-efficiency FPGA designs to life quickly and effectively.

Toshiba

Powering the Future with Toshiba

Discover Toshiba's latest advancements in Analog and Discrete semiconductors, featuring Silicon (Si), Silicon Carbide (SiC), and Gallium Nitride (GaN) technologies. These high-performance devices enable efficient power conversion and precise control in demanding industrial environments, from robotics and factory automation to motor drives and industrial inverters. Learn how Toshiba's innovations are shaping the future of reliable, scalable, and energy-efficient industrial solutions.

Session #2 - 9:40am to 10:40am

ams OSRAM

Sensing in a Whole New Light

Sensors continue to shape the way electronics interact with the real world and ams OSRAM will discuss and demonstrate a variety of sensor types in this class. We open with ams OSRAM's New Multizone ToF (Time of Flight) sensor, the TMF8829 and a demonstration of its capabilities. We will then demonstrate an Impedance/Capacitive Sensor and show applicability in applications ranging from human/machine interaction to automated driving "hands-on-wheel" detection, and fluid level sensing. A brief introduction to the new Optical Force Sensor will be included. Also in this class, ams OSRAM will review their spectral sensor offering and demonstrate the latest ams OSRAM spectral sensor, the TCS3530, highlighting its strengths in applications ranging from indoor farming to visual inspection equipment.

Diodes Incorporated

Power Management Solutions for Industrial and Automotive Applications

This technical session will explore power management techniques specifically tailored for industrial and automotive environments. We will delve into the critical aspects of energy efficiency, thermal management, EMI performance, and area efficiency. Techniques for power sequencing, scalability and modularity will also be discussed. The presentation will conclude with examples of real-world applications and the tangible benefits of implementing advanced power management solutions in both industrial machinery and next-generation vehicles.

MCC Semi
TVS selection guidelines

Selecting an appropriate Transient Voltage Suppressor (TVS) diode is essential for safeguarding electronic circuits against voltage transients. This seminar focuses on the methodology for choosing TVS devices based on application-specific peak of current. It details how to calculate peak pulse power using parameters such as transient duration, pulse shape (typically 8/20), and clamping behavior.

Phoenix Contact
Connectivity challenges with high-voltage DC power systems

The integration of high-voltage DC (HVDC) power systems in applications such as microgrids and data centers presents a promising pathway toward improved energy efficiency, reduced conversion losses, and enhanced compatibility with renewable energy sources. However, the adoption of high voltage DC power also introduces a range of technical, operational, and safety challenges. Safety risks, particularly from DC arc faults, require advanced protection systems. This seminar explores this risk in depth and discusses emerging solutions for high voltage DC connectors.

STMicroelectronics
Machine learning at the edge with STMicroelectronics

During this session we will introduce ST's solutions for edge AI applications. From software to hardware, we will cover the solutions available to develop, implement and deploy AI solutions on STM32. Throughout this session we will cover the tools necessary for applications ranging from predictive maintenance in industrial systems to real time vision for the smart city and everything in between.

YAGEO Group
Antenna Basics: How to Choose the Right Antenna for Your Application

Antennas come in a wide variety of form factors and with a multitude of integration options. Each of these that you may come across was designed to be useful for some installation case. With so many options, what can be done to figure out which is the right choice for each application? This presentation will discuss some of the simpler and more critical RF parameters of antennas but will focus on different mechanical types of antennas and their strengths. We will review antennas for IoT, Industrial, Infrastructure, Wearable, Vehicular, Base Station, RFID applications and more, while analyzing whether embedded, internal, external, or other integration methods could be right for each use case.

Session #3 - 10:50am to 11:50am

Altera

Altera FPGAs: DSP processing doesn't need to be one size fits all, join us to learn how you can tailor Altera's Agilex 3 & 5 devices unique DSP capabilities to fit your specific needs.

We will be reviewing Altera's Agilex 3 & 5 DSP capabilities and DSP Builder tools. Altera's Agilex 3/5 Family DSP Blocks have been infused with AI across the entire device. Every DSP block can be configured to run in tensor mode for incredibly efficient AI processing at the edge! Complex multiplication, (a + bi) * (c + di), is supported in 16-bit mode within every DSP block. Additional lower-precision modes, FP16 and FP12, are also supported. We will show how Altera's DSP Builder tool also creates incredibly efficient RTL for algorithms. We will demonstrate FIR filtering using new Agilex 5 DSP FIR tensor mode IP along with a Marine Radar solution using the Altera Agilex 5 dev kit.

Infineon Technologies

Untapping GAN and SiC for the Motor Control world

Learn how Infineon is advancing motor control. Utilizing expertise in wide bandgap semiconductors and microcontroller design, Infineon has combined wide bandgap drivers with their newly released PSOC Control microcontrollers to create the ultimate motor control processor. We will review the newest products and packaging solutions and solutions for the challenges of designing for these new technologies using digital control.

Littelfuse

Making Sense of Sensing: A Guide to Magnetic and Thermal Sensor Technologies

This presentation explores the key technologies, performance characteristics, and application domains of Littelfuse's magnetic and temperature sensors. Magnetic sensors, including reed switches, Hall Effect, and TMR digital sensors, enable precise, non-contact detection for position, proximity, and motion applications. This type of sensing is vital in industries such as appliances, industrial automation, and security. In parallel, Littelfuse temperature sensors, including thermistors, and RTDs, deliver accurate thermal monitoring across HVAC, medical, and automotive systems. Together, these sensor families support engineers in building smarter, safer, and more efficient electronic systems through reliable sensing solutions tailored for demanding environments

Microchip

Configurable Logic Blocks: Harnessing the Power of Programmable Logic in PIC® Microcontrollers

Enhance your applications by integrating complex logic designs using the Configurable Logic Block (CLB) on PIC® microcontrollers. You will explore the CLB architecture, including Look-Up Tables (LUTs), interconnections, sequential logic, storage elements, and clocking. Additionally, you will learn to use the CLB Logic configuration tool, including schematic capture, library elements, and circuit hierarchy.

Panasonic

Electronic Components are seemingly boring, until your failed design has customers roaring

An introduction to differentiated electronic components that meet the needs of demanding design requirements in evolving industries. Elevated temperatures up to +175°C, protection from corrosive sulfurization, vibration exposure of 30Gs or more, high voltage load switching in limited space, just one of these conditions could be a disaster. Overcome these challenges and more by joining our technical component seminar, featuring development trends, design ideas, and general application block diagrams. Don't resist the fun!

Silicon Labs

Enable Accurate Distance Estimation Using Channel Sounding

Explore the latest advancements in Bluetooth 6.0, with a special focus on Channel Sounding. Channel Sounding is a new standardized, interoperable, and secure method for distance measurement that is set to revolutionize a variety of applications. This session will also feature a comparative analysis of Channel Sounding with other ranging methods.

Session #4 - 12:50pm to 1:50pm

HARTING

How to Select the Right Ethernet Connectivity Technology for Industrial Applications.

Ethernet has become the dominant communication protocol for industrial networks, however, choosing the right kind of Ethernet connection can be a challenge. This seminar will guide the audience on how to select the right Ethernet solution for various industrial applications. The seminar will focus on different Ethernet technologies, single versus multi pair wiring, connector environmental and size options, and termination technologies, including choosing between a pre-made or field-attachable cable.

Seminar Agenda:

- Overview of Ethernet Connectivity technologies
  - Comparing copper with Fiber Optic
  - Comparing 4 and 8 wire copper technology with Single Pair Ethernet
- Pre-made cable assemblies vs assemblies made on-site
  - How to decide between both options
- Ethernet communication in industrial applications
  - How to select appropriate connectivity technology for industrial devices and machinery based on given requirements and pain points
  - Identifying future applications for Single Pair Ethernet
- Fiber Optic Ethernet in industrial markets
  - How to select appropriate Fiber Optic connectivity technology based on application and environment

Molex

Empowering Connectivity: Molex RF's Total Solution with Expert Design Collaboration

Molex delivers a complete RF solution portfolio, from connectors to custom cable assemblies, offering seamless integration and high-quality components. Our global engineering teams collaborate closely with customers to optimize designs and solve complex challenges. This personalized support ensures reliable, innovative, and efficient RF solutions tailored to unique applications.

What you'll learn about:

- Comprehensive range of RF products and custom assemblies
- Personalized design assistance to enhance performance and reliability Collaborative approach for end-to-end RF system development and integration.

NXP

Unlock the Power of Time Series Modeling with NXP Machine Learning Tools

Join us for an engaging seminar that explores the cutting edge of embedded machine learning with a focus on time domain modeling. Discover how NXP's eIQ® Time Series Studio (eIQ TSS) empowers engineers to efficiently process and model time series data for intelligent edge applications. Learn how to integrate these capabilities into your workflow using NXP's robust toolchain and experience the performance and flexibility of the i.MX93 Freedom Board, designed to accelerate your ML development journey. Whether you're building predictive maintenance systems, anomaly detection solutions, or smart sensor applications, this seminar will provide insights and tools to bring your ideas to life.

onsemi

Get the test results before you sample, with onsemi's Elite Power Simulator Tool!

Novel power device simulation reduces development time. Onsemi's Elite Power Simulator enables power electronic engineers to accelerate time to market. The Elite Power Simulator now includes Power Trench Si FETs, EliteSiC FETs; CJFETs: Silicon Carbide (SiC) Cascode JFETs for various target end applications.

SiliconExpert

Redefining the Future of Engineering & Supply Chains

The next era of engineering isn't just about solving design challenges. It's about redefining how efficient work gets done across the organization. Agentic AI is starting to reshape workflows including autonomously optimizing component selection, predicting supply chain risks before they arise, and dynamically adapting to real-time constraints. In this session, SiliconExpert unveils how Agentic AI can accelerate design cycles, streamline procurement strategies, and enable seamless collaboration between engineering and sourcing teams. Discover how these innovations are eliminating bottlenecks, reducing engineering change requests, and ensuring engineers spend more time innovating and problem solving. Join us to explore the game-changing role of Agentic AI in engineering efficiency and gain a competitive edge in the evolving landscape of product development.

Winbond
Using Winbond Flash Memory Solutions to Solve Common Design Problems

Does your over-the-air firmware update take way too long? Winbond's QSPI NAND and Octal NAND products offer fast program time and erase time features designed to reduce the update time by ten or even one hundred-fold. Does your SoC or FPGA need IO voltages in the 1.2V range? Winbond offers both pure 1.2V flash devices and 1.8V flash devices with 1.2V IO to solve the issue, all while reducing power consumption by 33%. Lastly, to get the most life out of your layout effort, Winbond offers an All-In-One Footprint Layout. The All-In-One layout supports the five most popular Flash memory package types to reduce PCB redesign effort and manufacturing cost.

Session #5 - 2:00pm to 3:00pm

Arrow
Supplier Market Update

Stay informed with Arrow Electronics as we explore the latest global market trends and tariff developments.

Bourns
Low Power, Wide Bandgap, Magnetics Analysis: A focus on high-frequency power design and construction

As the call for higher frequency magnetics components is even more prevalent in the industry today, design methodology and construction focus are evolving. This presentation will give insight into construction aspects of low power magnetics design and highlight some aspects of the design process.

1. How do GaN FETs really affect the magnetics in a design?
2. What about losses? Both AC and DC loss for core and coil design will be presented. What are the design tradeoffs and effects of actual construction changes versus simulation modelling.
3. How do parasitic effects change your design? We will explore the tradeoffs between both core and coil AC capacitive and inductive issues as they relate to SMPS topology.
4. What about safety? In which ways do the safety standard requirements contribute to size, cost and performance of the magnetics?
5. What the design impact of EMI and EMC mitigation? What magnetic construction properties affect conducted and radiated emissions? Internal shielding concepts for transformer and inductor design will be presented.

Critical Link LLC
SOMs: Leveraging Asymmetric Multiprocessing (AMP) and AI at the Edge to Achieve Scalable Embedded Systems

This seminar will include a technical discussion and demonstration of implementing AI at the edge and present alternative techniques for employing Asymmetric Multiprocessing (AMP) on multi-core embedded systems. We will explore the benefits, challenges, and implementations for both AI at the edge and AMP using Altera, Qualcomm, and TI-based system-on-modules.

Kingston Technology

Designing embedded systems with managed NAND and small for factor SSD's

Join Kingston for a comprehensive training session offering an in-depth overview of our complete Industrial SSD portfolio, including both Commercial Temperature and Industrial Temperature solutions. We'll cover the latest innovations and product updates engineered to meet the demanding requirements of embedded, industrial, and edge applications. In addition, the session will delve into managed NAND and eMMC technologies, with a particular focus on small-capacity MLC devices commonly used in embedded systems. Topics include flash organization, key management algorithms such as wear leveling, and an overview of our rigorous validation efforts across industry partners. Stay for a live Q&A to get expert insights on storage technologies, performance, and reliability in mission-critical environments.

NIC Components

Passive Component Best Practices and Selection Guidance by Performance, Size, and Cost

NIC Components (NIC), a market leader in high-performance passive components, offers an extensive product portfolio that includes antennas, capacitors, magnetics, resistors, and circuit protection devices, all engineered to meet the demands of cutting-edge industries. As technology and design evolve across current and emerging markets, the critical factors of performance, reliability, and environmental sustainability take center stage. This underscores the importance of selecting the right electronic passive components, such as capacitors, to achieve optimal results. Join us for an engaging presentation where we will explore essential design considerations for applications in Artificial Intelligence and Machine Learning, Electrification, Battery Systems, Energy Storage, Motion/Motor Control, and Radio/RF/Wireless systems. With a dedicated focus on NIC's capacitor line, including aluminum electrolytic capacitors, ceramic capacitors, and film capacitors.

- Component selection: How to choose one technology over another.
- Component Derating and Design Guidelines: Best practices for ensuring reliability.
- Environmental Factors: Operating temperature ranges, lifetime, and reliability considerations
- Failure Modes: Understanding how environmental factors impact component longevity and strategies to mitigate these risks
- Applying these principles to power inductors, resistors, and antennas for a complete passive solution.

By the end of the presentation, you will gain a comprehensive understanding of how your choices in passive components can influence key factors such as supply chain efficiency, material optimization, performance, and component size.

Skyworks

Increasing communication range using Skyworks Front End Modules

In today's modern communications systems, range is becoming ever more important. Ever increasing data rates, crowded RF environments and increased link reliability all demand RF components that deliver increased transmission power and have best in class receive sensitivity while still maintaining low power consumption. In today's seminar you will learn how Skyworks Front End Modules (FEMs) help customers deal with all these conflicting requirements to deliver increased range at lower power consumption for your RF applications.