



India MASTERS 2026

Technical Training Conference
on Embedded Control



December 15–18, 2026
The Leela Palace, Bengaluru



mchp.us/inmasters26

PCIe® Solutions

High-Performance Connectivity for Today and Tomorrow



Data Center

High-Performance Interconnect for AI and Cloud Infrastructure



Servers



NIC / DPU



Storage
(NVMe)



AI Accelerators



Automotive

Reliable, High-Speed Connectivity for Advanced Vehicle Systems



ADAS



Surround View
& Cameras



Sensors
(Radar, LiDAR)



In-Vehicle
Computing



High-Performance
Maximum bandwidth and low latency



Reliable
Proven connectivity for mission-critical systems



Scalable
Flexible solutions for future growth



Versatile
One architecture for automotive and data centers

ASA-ML Automotive SerDes Alliance Motion Link

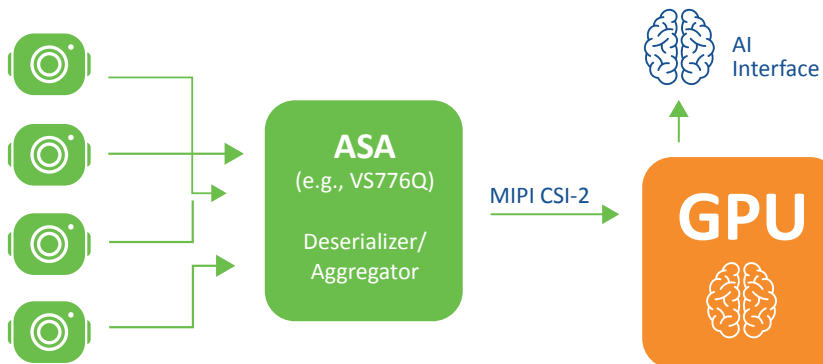
Solutions for Automotive ADAS Applications



ASA

(Automotive SerDes Alliance)

High-speed camera connectivity over coax/STP cable
Reliable, low latency data transport



High-Bandwidth
Supports multi-camera high-resolution video



Long Distance
Robust transmission over automotive cabins



Reliable
Designed for harsh automotive environments



Functional Safety
Built for ASL ready systems

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Overview

India MASTERS 2026

Now entering its 19th year, India MASTERS 2026 is Microchip's premier annual in-person learning conference on embedded control, crafted to equip engineers with latest technical training and industry insights. The conference delivers an exclusive platform to elevate your expertise via in-depth courses, hands-on workshops and expert-facilitated sessions.

Taking place at The Leela Palace Bengaluru from December 15–18, 2026, India MASTERS 2026 features 63 classes including 22 hands-on sessions and 41 lecture/demo sessions to empower innovation, streamline learning curves and speed up product development.

New sessions for 2026 include Zephyr® builds, connectivity to the edge, CMSIS, Digital Signal Processing (DSP) using dsPIC33A, PolarFire® FPGAs, AI and Machine Learning on Microchip MPUs, SiC power technologies, advanced EMI/EMC practices, 64-bit RISC-V processors and dsPIC® Digital Signal Controllers (DSCs) with double-precision FPU. In-depth classes will continue to cover Ethernet, USB/SerDes/PCIe®, Wi-Fi®, Bluetooth®, motor control, touch and gesture sensing, power management and graphics solutions.

Attendees will also experience over 50 live demos and reference solutions covering connectivity, edge AI, vision, wireless, power, security and system-level design.

Special highlights include a Microchip keynote address by Kyle Gaede, Senior Director, Worldwide Field Applications Engineering of Microchip Technology, along with two industry keynotes exploring the future of embedded solutions, EVs, edge computing and AI.

Gain first-hand knowledge from the engineers building your daily tools, equipping you to deliver your next design faster and smarter.

December 15–18
The Leela Palace, Bengaluru



Target Attendee

Those who are seeking solutions to embedded control challenges or in-depth training on Microchip's product portfolio will find immense value here. Design engineers and engineering managers can explore targeted solutions and engage directly with Microchip experts throughout the conference.

Attendees graduating from the MASTERS program will be equipped to go out and use Microchip products to full advantage. Certificates are awarded following conference participation.

Registration

All attendees should register via
mchp.us/inmasters26

Registration deadline: December 8, 2026

- ☉ A confirmation email will be issued upon successful registration
- ☉ If you have any enquiries, please contact us at:
indiamasters@microchip.com



Conference Fee

Rs. 15,000 (tax included)

- ☉ Access to all conference classes
- ☉ Discounted development tools coupon
- ☉ Complete set of class materials
- ☉ Microchip giveaway
- ☉ Digital completion certificate
- ☉ Conference meals

Dec 15 (Tue)		Dec 16 (Wed)		Dec 17 (Thu)		Dec 18 (Fri)	
Lunch	Dinner	Lunch	Dinner	Lunch	Dinner	Lunch	Dinner
✓		✓	✓	✓		✓	

Early Bird Offer – Rs. 12,000 (tax included)

- ☉ Register and complete payment by November 15, 2026

Other Discount Offers

- ☉ For inquiries on discounts for design partners, training partners, academic partners and group bookings, please contact us at: indiamasters@microchip.com

Payment

1. Complete your payment using one of the options below:

Option 1: Online Electronic Payment

Make your payment through EASYEMI with HDFC Bank credit cards

Option 2: Online Wire Transfer

Transfer your payment to Microchip using the following bank details:

Bank name	DBS BANK INDIA LTD.
Beneficiary	Microchip Technology (India) Pvt Ltd
IFSC Code	DBSS0IN0811
Branch Code	IN0811
Account Number	100947801356
SWIFT Code	DBSSINBB (Head Office)
Address	Salapuria Windsor, No. 3, Ulsoor Road, Ward No 78, Bangalore - 560042

After payment, email your **payment proof** along with your

Confirmation Number and **GST Number** to:

indiamasters@microchip.com

2. All attendees **MUST** register and complete conference fee by December 8, 2026. Full payment is required prior to attending the conference.

Cancellation

Cancellations made less than 14 days before the start of India MASTERS 2026 will incur the full conference fee. If your seat is confirmed and you do not notify Microchip of your cancellation or fail to attend, full payment is still required.

Attire

Business casual attire is required for all sessions and activities.

Location and Local Transportation

The Leela Palace, Bengaluru

Location

- © Address: 23, Kodihalli, Old Airport Road, Bengaluru, Karnataka 560008
- © Phone: 080 2521 1234
- © Website: <https://www.theleela.com/the-leela-palace-bengaluru>



Local Transport

By **Metro**

- Nearest metro line: **Purple Line**.
- Get off at **Indiranagar Metro Station**, then take a short auto or cab ride to the hotel.

By **Bus**

- BMTC buses like **328-K, 329A, KBS-1I, SBS-1K** or **V-335E** stop near **Kodihalli**, which is close to the hotel.
- From **Kempegowda Bus Station**, take a direct bus to Kodihalli (approx. 37–50 mins).

By **Taxi** or **Car**

- From **Bangalore City Railway Station**: approx. 11 km, approx. 11 mins by taxi.
- From **MG Road** or **Central Business District**: approx. 10–15 mins depending on traffic.

Hotel Recommendations

India MASTERS 2026 is a non-residential program and does not include on-site accommodation. Attendees can contact the host hotel The Leela Palace Bengaluru directly to check room rates and vacancy status.

A curated selection of nearby lodging options is listed below to support your accommodation planning:

Hotel Name	Distance from The Leela Palace Bengaluru
Sterling's Mac Hotel Bengaluru	Directly opposite
Bloom Hotel – HAL Old Airport Road	5 mins walking distance (350m)
Treebo Greenwood Premier Suites	5 mins walking distance (400m)
Lazdana Hotel Bangalore	7 mins walking distance (550m)

Keynote Speech

Attend the featured Microchip keynote address delivered by Kyle Gaede, Senior Director, Worldwide Field Applications Engineering, Microchip Technology, taking place on Day 2 (December 16). Gain valuable real-world perspectives from a senior leader with deep industry exposure, as he shares actionable insights addressing real-world embedded-design challenges, practical implementation strategies, and evolving market priorities shaping today's engineering landscape.

Join two dedicated industry keynotes scheduled for Day 1 and Day 3 (December 15 and 17) and dive into the fast-evolving landscape of embedded solutions, electric vehicles, edge computing and AI-driven systems. Hear expert analysis on critical industry shifts, practical design trade-offs, and emerging business opportunities to guide your product development strategy.

Microchip Keynote Speaker



Kyle Gaede

Senior Director
Worldwide Field Applications Engineering
Microchip Technology



Evening Events

Following the Microchip keynote address on Day 2 (December 16), join our lively evening-networking event featuring catering, live music and dance performances.

Take a well-deserved break from MASTERS' intensive technical sessions to relax, socialize and connect with other attendees. Seize this casual opportunity to network, share ideas and foster meaningful industry relationships outside classroom sessions.



Ask the Experts

The Ask the Experts (ATE) area serves as your prime destination for hands-on technical engagement and direct access to Microchip's experienced technical experts. Attendees can explore live demos featuring the latest innovations, discuss real-world design integration challenges, and receive tailored guidance on hardware, software and development tools — from microcontrollers, microprocessors and analog devices to connectivity, FPGA, edge solutions and AI-powered systems.

Whether you're troubleshooting, brainstorming or optimizing, our experts are ready to provide dedicated support. The interactive setup fosters innovative thinking and practical problem-solving while offering an excellent opportunity to network and exchange industry ideas. Gain practical, immediately applicable insights to take your designs to the next level.

Visit the ATE area daily from 9:00 a.m. to 5:00 p.m. to explore our core technologies and application segments available at each dedicated station:

- Embedded Software
- Microcontroller Systems
- Analog and Mixed-Signal Design
- Programmable Logic & FPGA
- Safety and Security
- Human Interface
- Motor Control
- Power Conversion
- Sensor Systems
- Wireless Connectivity
- Advanced Wired Connectivity
(Ethernet, PCIe®, 10BASE-T1S, and others)
- Artificial Intelligence & Machine Learning
- Development Systems & Tools
- Timing and Synchronization Solutions
- Automotive and Electric Vehicle Applications
- Data Center and Computing Systems





Conference Agenda

Dec 15 (Tue)

Time	Agenda	
8:00 a.m. – 9:00 a.m.	Registration	
9:00 a.m. – 10:30 a.m.	Class 1	Ask the Experts
10:30 a.m. – 11:00 a.m.	Break	
11:00 a.m. – 12:30 p.m.	Class 2	
12:30 p.m. – 1:30 p.m.	Lunch	
1:30 p.m. – 3:00 p.m.	Class 3	
3:00 p.m. – 3:30 p.m.	Break	
3:30 p.m. – 5:00 p.m.	Class 4	
5:00 p.m. – 5:30 p.m.	Break	
5:30 p.m. – 6:30 p.m.	Industry Keynote	

Dec 16 (Wed)

Time	Agenda	
9:00 a.m. – 10:30 a.m.	Class 5	Ask the Experts
10:30 a.m. – 11:00 a.m.	Break	
11:00 a.m. – 12:30 p.m.	Class 6	
12:30 p.m. – 1:30 p.m.	Lunch	
1:30 p.m. – 3:00 p.m.	Class 7	
3:00 p.m. – 3:30 p.m.	Break	
3:30 p.m. – 5:00 p.m.	Class 8	
5:00 p.m. – 5:30 p.m.	Break	
5:30 p.m. – 6:00 p.m.	Microchip Keynote	
6:30 p.m. – 7:30 p.m.	Evening Events	

Dec 17 (Thu)

Time	Agenda	
9:00 a.m. – 10:30 a.m.	Class 9	Ask the Experts
10:30 a.m. – 11:00 a.m.	Break	
11:00 a.m. – 12:30 p.m.	Class 10	
12:30 p.m. – 1:30 p.m.	Lunch	
1:30 p.m. – 3:00 p.m.	Class 11	
3:00 p.m. – 3:30 p.m.	Break	
3:30 p.m. – 5:00 p.m.	Class 12	
5:00 p.m. – 5:30 p.m.	Break	
5:30 p.m. – 6:30 p.m.	Industry Keynote	

Dec 18 (Fri)

Time	Agenda	
9:00 a.m. – 10:30 a.m.	Class 13	Ask the Experts
10:30 a.m. – 11:00 a.m.	Break	
11:00 a.m. – 12:30 p.m.	Class 14	
12:30 p.m. – 1:30 p.m.	Lunch	
1:30 p.m. – 3:00 p.m.	Class 15	
3:00 p.m. – 3:30 p.m.	Break	
3:30 p.m. – 5:00 p.m.	Class 16	
End of Conference		



Class List

Class code	Title	Hands-on	Hours	Tech Level
26018 RTOS2	Mastering Zephyr® Builds: From West Basics to Automated Workflows		3.0	2
26020 RTOS4	Hands-On Zephyr® Driver Development and Deployment on SAME54		3.0	3
26023 AIML1	Shining a Light on AI/ML: An Introduction to Machine Learning		3.0	2
26024 AIML2	End-to-End Object Detection: From Training to Embedded Deployment		3.0	3
26025 LNX1	Master Linux® Application Architecture and Deployment With VS Code®		3.0	2
26026 LNX2	Custom Linux® Hardware Integration		3.0	3
26027 LNX3	Unlocking Multicore Power: Building and Booting Asymmetric Multi-Processor Applications With Linux® and Zephyr® on the PIC64GX1000		3.0	4
26032 FRM3	CMSIS Unlocked: Building Smarter and Portable Embedded Systems		3.0	2
26033 FRM4	Mastering Cross-Platform GUI Design With Microchip Graphics Suite		3.0	2
26037 FPGA3	Beginner's Walkthrough: Designing Your First FPGA Application With Libero® SoC Design Suite		3.0	2
26038 FPGA4	FPGA Design With RISC-V® Microcontroller Using Libero® SoC Design Suite Tools		3.0	2
26041 MCU1	Exploring the Performance of the Microchip's 32-bit Digital Signal Controllers		3.0	3
26042 MCU2	Breaking the Barrier: Designing With Microchip's Hybrid (Crossover) MPUs Made Easy		3.0	2

Class code	Title	Hands-on	Hours	Tech Level
26043 MCU3	Low-Power Design With Microchip's Arm®-based Cortex®-M Microcontrollers: Essential Techniques		3.0	3
26046 MCU6	Configurable Logic Block — Advanced Applications and Practical Labs		3.0	3
26056 MTR1	High-Performance Motor Control Using Low-Cost MCUs		3.0	3
26059 MTR4	Brushless Motor Control Workshop		3.0	3
26071 SEC3	Building Trustworthy Devices: Hands-On Embedded Security Essentials		3.0	2
26080 SENS5	Optimizing Sensor Data for AI/ML Applications		3.0	2
26082 ETH2	Using Microchip Ethernet Switches to Provide Deterministic, Reliable and Scalable Connectivity		3.0	2
26083 ETH3	Revolutionizing Connectivity to the Edge: Remote Control Endpoints Over 10BASE-T1S Single-Pair Ethernet		3.0	1
26090 LPW2	Concept to Connectivity: Building a Zephyr®-Based Bluetooth® LE Multimeter Using a Microchip MCU		3.0	2

Tech Levels:

- 1: No prior knowledge on the topic necessary
- 2: Basic knowledge of the topic is necessary
- 3: Previous hands-on working experience with the topic is necessary
- 4: Thorough knowledge and working experience with the topic is necessary



Class List

Class code	Title	Hands-on	Hours	Tech Level
26001 PNS1	Analog Offerings From Microchip		1.5	1
26003 PNPR7	High-Power, High-Reliability and the SiC Revolution: Portfolio Update and Silicon Carbide Deep Dive		1.5	1
26004 PNS4	Microchip is Enabling the Next Generation of 32-bit and 64-bit MPU Embedded Systems		1.5	1
26005 PNS5	Microchip's Timing Solutions		1.5	1
26006 PNS6	Empowering Innovation: Microchip MCU and dsPIC® Roadmap		1.5	1
26009 PNS9	Building Intelligent Systems With Microchip Edge AI		1.5	1
26010 PNS10	Optimizing Cost, Schedule, and Reliability With Microchip's Aerospace and Defense Ecosystem		1.5	1
26012 PCB2	From Source to Silicon: Designing Robust Power Delivery Networks for Embedded Systems		3.0	2
26013 PCB34	What Really is EMI and How Do I Tackle It?		3.0	4
26015 PCB5	Using AI to Create Your Next Proof-of-Concept Within Minutes		1.5	2
26017 RTOS1	Using Zephyr® RTOS on Microchip MCUs		3.0	2
26028 DEV1	Getting Started With MPLAB® Extensions for VS Code®		1.5	2
26029 DEV2	Advanced Use of the Microchip AI Coding Assistant		1.5	3

Class code	Title	Hands-on	Hours	Tech Level
26035 FPGA1	Getting Started With Microchip FPGAs		1.5	1
26036 FPGA2	FPGA Edge AI Basics: Concepts, Tools and Demos With Microchip VectorBlox™		3.0	2
26047 MCU7	Digital Signal Processing Using the dsPIC33A 32-bit Digital Signal Controller		1.5	2
26048 MCU8	Microchip Device Firmware Update Ecosystem		1.5	3
26049 MCU9	PIC64: The King of Real-Time Processing		1.5	3
26050 FUSA1	Functional Safety Fundamentals: Navigating Standards and Achieving Compliance		1.5	1
26053 FUSA4	Choosing a Safe Software Framework: RTOS Solutions for Embedded Systems With Functional Safety Requirements		1.5	1
26054 HMI12	Capacitive Touch and Level Sensing 2026: New Applications, New Parts, Updated Tools and Noise-Robust Level Sensing		1.5	1
26058 MTR3	Software Tools to Simplify Motor Control Development and Debugging: motorBench® Development Suite		1.5	3
26060 MTR5	Position Control and Motion Profiling With dsPIC33AK		1.5	1

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Class List

Class code	Title	Hands-on	Hours	Tech Level
26061 MTR6	Developing Motor Control Applications Using MATLAB®/Simulink®		3.0	1
26062 PWR1	Mastering Digital Power Supply Designs With the dsPIC33A Digital Signal Controller		3.0	2
26066 PWR5	Mastering FPGA Power Management With the MCP16701 PMIC: Beginner Guide, Tools and Best Practices		1.5	2
26067 PWR6	Simulation-Driven SiC Power Design: From Device Selection to Advanced Thermal Modeling		3.0	2
26069 SEC1	Introduction to Cryptography and Post-Quantum Cryptography: Demystifying the Magic		1.5	1
26070 SEC2	Cyber Resilience Act: A Practical Walkthrough		3.0	2
26072 SEC4	Managed Firmware-Over-The-Air Updates Made Easy, Secure and Scalable		3.0	3
26074 SEC6	Quantum-Proof Your Embedded Systems: Hybrid Secure Boot		3.0	2
26075 SEC7	Leaking Secrets: A Hands-On Side-Channel Attack Lab		3.0	3
26077 SENS2	Inductive Position Sensor Design: From Concept to Production Utilizing Publicly Available Software Resources		3.0	2
26084 ETH4	Gateway Communication Between Single-Pair Ethernet (10BASE-T1S) and CAN-FD in Automotive Networks		1.5	2
26085 ETH5	Securing Ethernet With MACsec and MACsec Key Agreement (MKA)		1.5	1

Class code	Title	Hands-on	Hours	Tech Level
26086 USB1	Understanding USB 3.0, Type-C & Power Delivery — Fundamentals, Use Cases and Troubleshooting		1.5	2
26087 USB2	Confident High-Speed Digital Design: Practical Layout & Simulation Demos for High-Speed SerDes (Ethernet/USB/PCIe®)		3.0	2
26089 LPW1	Bluetooth® in a Blink: Rapid Wireless Integration With RNBD Bluetooth LE Modules		1.5	1
26091 LPW3	Rocket Science: Live Bluetooth® LE Data Acquisition and Visualization via Long Range Data Link		1.5	1
26092 HAILO1	Real-Time AI, On the Device: Inside Hailo's Accelerators and Vision Processors		1.5	2
26093 MTR7	e-Scooter Reference Design Masters Class		1.5	3

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Class Description

26018 RTOS2

Mastering Zephyr® Builds: From West Basics to Automated Workflows

Hands-on	Hours	Tech Level
Y	3.0	2

Imagine you are an embedded engineer working with a team of firmware developers. You are ready to move beyond simple demos and build your first serious Zephyr® application. The Zephyr build environment, with its powerful West tool, can seem like a maze of options and configurations. In this class, you will step into the shoes of a developer tasked with architecting a robust, multi-module project for a real-world device. Guided by hands-on activities and practical examples, you will learn how to streamline your workflow, leverage existing drivers, and automate your builds — all while gaining the confidence to tackle complex Zephyr projects with ease.

26020 RTOS4

Hands-On Zephyr® Driver Development and Deployment on SAME54

Hands-on	Hours	Tech Level
Y	3.0	3

Learn the Zephyr® device driver model by starting with:

1. Writing an LED driver and developing Application Programming Interfaces (APIs) for LED on, LED off and LED toggle.
2. Then levelling up by bringing up Ethernet (assign IP and link up) using the network interface abstraction layer.
3. Finally deploying a web server hosting an HTTP sensor page (using the Ethernet interface) — all on the SAME54 Xplained Pro.

You will see how Zephyr’s common driver APIs, device tree and Kconfig cleanly separate hardware from application code, so your app logic will barely change when you swap boards or MCUs.

We will highlight why Zephyr’s standardized driver interfaces, and built-in networking make portability practical — not a rewrite. Leave with working code, a mental model for Zephyr drivers, and a repeatable pattern to scale features across Microchip’s 32-bit portfolio.

26023 AIML1

Shining a Light on AI/ML: An Introduction to Machine Learning

Hands-on	Hours	Tech Level
Y	3.0	2

This class introduces the MPLAB® Machine Learning Development Suite. You will conduct a complete Machine Learning (ML) workflow, identify and extract relevant features from time-variant signals, and deploy a trained machine learning model onto hardware. By the end of the class, you will have created a useful real-world implementation using MPLAB Machine Learning Development Suite, from data collection to real-time testing and validation.

26024 AIML2

End-to-End Object Detection: From Training to Embedded Deployment

Hands-on	Hours	Tech Level
Y	3.0	3

Unlock the full lifecycle of object detection for embedded systems in this hands-on session. You will learn how to select the right object detection model for embedded applications and gain practical experience using Google® Colab or Jupyter® Notebook to train, simulate, and test object detection models with popular frameworks. Finally, you will discover how to convert your trained model into LiteRT format using TensorFlow® and deploy it on an MPU, enabling efficient edge Artificial Intelligence (AI) solutions. Whether you are new to embedded AI or looking to streamline your deployment workflow, this class will equip you with the skills and confidence to take your object detection projects from concept to edge deployment.



Class Description

26025 LNX1

Master Linux® Application Architecture and Deployment With VS Code®

Hands-on	Hours	Tech Level
Y	3.0	2

In this hands-on class, you will learn to build and deploy a custom Linux® distribution that is tailored to your hardware platform, including the creation of cross-compiling toolchains for seamless development. You will configure VS Code® for efficient program editing and master remote debugging techniques to troubleshoot applications running on your target device. The class will also guide you through the core principles of Linux application architecture, empowering you to analyze and select the most effective system design for your projects. By the end of the class, you will have gained practical experience in setting up your development environment, deploying applications, and making informed architectural decisions for robust Linux solutions.

26026 LNX2

Custom Linux® Hardware Integration

Hands-on	Hours	Tech Level
Y	3.0	3

In this hands-on class, you will learn how to integrate a custom hardware design into a Linux® image. The class will focus on making the necessary modifications to bootloaders, the Linux kernel, the device tree, and on building system integration. Using a Microchip evaluation board, you will simulate a custom microprocessor design and various boot scenarios. By the end of the class, you will be able to support custom hardware and adapt the boot process to your application requirements.

26027 LNX3

Unlocking Multicore Power: Building and Booting Asymmetric Multi-Processor Applications With Linux® and Zephyr® on the PIC64GX1000

Hands-on	Hours	Tech Level
Y	3.0	4

This hands-on class guides you through the complete process of developing and deploying Asymmetric Multi-Processing (AMP) images on the PIC64GX1000 platform. You will start by building Linux® and Zephyr® images that are tailored for this hardware. Next, you will use the Hart Software Services (HSS) payload generator tool to seamlessly combine these images into a single AMP image, ready for multicore execution. Finally, you will gain a clear understanding of how the PIC64GX1000's HSS bootloader manages the boot process and enables efficient AMP image execution. Whether you are new to multicore embedded systems or looking to deepen your expertise, this class provides practical, step-by-step instruction and valuable insights into the PIC64GX1000's unique capabilities.



Class Description

26032 FRM3

CMSIS Unlocked: Building Smarter and Portable Embedded Systems

Hands-on	Hours	Tech Level
Y	3.0	2

This hands-on class introduces developers to the fundamentals of the Common Microcontroller Software Interface Standard (CMSIS), a set of APIs, software components, tools and workflows that help to simplify software re-use, reduce the learning curve for microcontroller developers, and thus reduce the time to market for new applications. Designed for embedded systems engineers and hobbyists, this session demystifies the various components of the CMSIS ecosystem — core, Peripheral Library (PLIB) and drivers — and demonstrates how to practically use the key programming references in this ecosystem (from ARM’s own CMSIS GitHub examples, to Microchip CMSIS solutions and template examples). Learn how to efficiently use the new Arm Keil Studio Pack (MDK v6), in VS Code® in the process of creating key components of a comprehensive application for the PIC32CM-PL10 CNano board, leveraging Microchip’s CMSIS drivers and PLIBs.

26033 FRM4

Mastering Cross-Platform GUI Design With Microchip Graphics Suite

Hands-on	Hours	Tech Level
Y	3.0	2

This hands-on class introduces the cross-platform capability of Microchip Graphics Suite (MGS), a unified graphics development environment that enables developers and designers to build, simulate and deploy portable Graphical User Interface (GUI) applications across microcontroller and microprocessor platforms. You will learn how to use the MGS Composer, Figma® Import and Simulator along with VS Code® using MPLAB® Extensions, streamlining the end-to-end workflow for embedded graphics design. The class covers advanced topics such as configuring composer widgets for vector rendering and portability across different hardware platforms, from 32-bit microcontrollers to microprocessors and Field-Programmable Gate Arrays (FPGAs), as well as different software platforms, such as Linux® and MPLAB Harmony. Through hands-on labs, you will deploy the same graphics solution from a microcontroller to a microprocessor. By the end of the class, you will have gained comprehensive experience in MGS’s cross-platform toolchain and learnt how to efficiently create scalable, hardware-agnostic embedded GUI applications.

26037 FPGA3

Beginner’s Walkthrough: Designing Your First FPGA Application With Libero® SoC Design Suite

Hands-on	Hours	Tech Level
Y	3.0	2

This hands-on class is tailored for engineers who are interested in — but not yet familiar with — Field-Programmable Gate Arrays (FPGAs) and the FPGA design process. Expose non-FPGA designers to the capabilities, possibilities and advantages of designing with FPGAs using Libero® System-on-Chip (SoC) Design Suite by providing an overview of the complete process and then walking through the steps of building, simulating and running a custom application.



Class Description

26038 FPGA4

FPGA Design With RISC-V® Microcontroller Using Libero® SoC Design Suite Tools

Hands-on	Hours	Tech Level
Y	3.0	2

In this class, you will gain hands-on experience in implementing a simple Field-Programmable Gate Array (FPGA)-based RISC-V® microcontroller with customized memory and peripherals using Libero® System-on-Chip (SoC) Design Suite tools. You will select and configure RISC-V processor, memory, and peripheral IP cores, use a SmartDesign® canvas to interconnect IP cores, and build your custom microcontroller. By the end of the class, you will have developed the skills required to design a custom microcontroller tailored to your unique needs.

26041 MCU1

Exploring the Performance of the Microchip's 32-bit Digital Signal Controllers

Hands-on	Hours	Tech Level
Y	3.0	3

Are you curious about what sets Microchip's dsPIC33A 32-bit Digital Signal Controllers (DSCs) apart from a general-purpose MCU? Microchip's dsPIC33A processors are powerful digital signal controllers with advanced integrated analog and are ideal for real-time control and advanced sensing applications. In this class, you will explore the key details about the architecture of the dsPIC33A, including its 32-bit DSC core and Digital Signal Processing (DSP) capabilities, communication buses, clocking systems and interrupts. The class will also provide an overview of some of the advanced peripherals, including the 40 Msps Analog-to-Digital Converter (ADC), double-precision hardware Floating Point Unit (FPU) and high-resolution Pulse-Width Modulation (PWM). You will learn the details necessary to get started writing code and developing an application using the dsPIC33A through instructor-led and hands-on labs.

26042 MCU2

Breaking the Barrier: Designing With Microchip's Hybrid (Crossover) MPUs Made Easy

Hands-on	Hours	Tech Level
Y	3.0	2

Do you spin designs all the time with MCUs, but every time you consider stepping up to an MPU, you are met with a wall of complexity — high-speed DRAM interfaces, complicated operating systems, storing the program in external memory, a mysterious boot process, etc.? In this hands-on class, you will discover that Microchip's hybrid (crossover) MPUs provide a path beyond high-end MCUs to more processing power without as much complexity as you fear. Your Microchip MPU projects can be designed, programmed and debugged with the tools and techniques you already know from your MCU designs. You will write code that works directly with the MPU hardware — the MPUs will not run Linux® in this class. Through guided exploration and practical labs, you will break through the barriers, gaining the confidence to bring your next project to life with an MPU.

26043 MCU3

Low-Power Design With Microchip's Arm®-based Cortex®-M Microcontrollers: Essential Techniques

Hands-on	Hours	Tech Level
Y	3.0	3

In this class, you will learn essential techniques for low-power applications design with Microchip's Arm®-based Cortex®-M microcontrollers, including sleep modes, automatic clock request systems, power domains/regulator selection, and inter-peripheral communication/triggering using the event system. In the hands-on labs you will start with an active mode light sensor application example (no low-power techniques utilized) and use MPLAB® Code Configurator (MCC)/MPLAB Harmony to progressively apply microcontroller sleep modes, power management systems, and peripheral automation of tasks to reduce the power consumption. At each step along the way, you will measure and observe the reduction in power consumption obtained from utilizing each low-power technique.



Class Description

26046 MCU6

Configurable Logic Block — Advanced Applications and Practical Labs

Hands-on	Hours	Tech Level
Y	3.0	3

Advance your skills with the Configurable Logic Block (CLB) through hands-on labs that cover a variety of applications. In this class, you will use the CLB’s logic circuits to create a custom microcontroller peripheral. You will also gain proficiency in using schematic tools, library elements and hierarchical design through practical exercises. Additionally, in one of the labs, you will use Verilog® code provided to you to configure the CLB (prior experience with Verilog is not necessary for this class). The class will show examples of advanced applications that can be created with the CLB, to help you explore ideas of what you could accomplish with the CLB in your next design.

26056 MTR1

High-Performance Motor Control Using Low-Cost MCUs

Hands-on	Hours	Tech Level
Y	3.0	3

In this class, you will explore the methodologies and techniques necessary for designing and implementing advanced motor control solutions using affordable microcontrollers (MCUs). You will understand the motor control capabilities of low-end MCUs, learn how to use Microchip tools to achieve maximum performance, and how to tune and debug motor control systems. Through hands-on labs, you will develop robust motor control systems that meet stringent performance criteria without exceeding budget constraints.

26059 MTR4

Brushless Motor Control Workshop

Hands-on	Hours	Tech Level
Y	3.0	3

This class offers an extensive exploration of Brushless DC (BLDC) motor control techniques. You will learn about brushless motors, how they can be driven (block/sine/sensorless/sensor), and which Microchip tools are best suited to which application. Through hands-on labs, you will gain practical experience with various motor control methodologies, including forced commutation, sensored and sensorless drives, and Field Oriented Control (FOC).



Class Description

26071 SEC3

Building Trustworthy Devices: Hands-On Embedded Security Essentials

Hands-on	Hours	Tech Level
Y	3.0	2

The PIC32CZ CA-9x family of microcontrollers is equipped with an integrated Hardware Security Module (HSM) running on a dedicated core. The PIC32CM SG family features an on-chip Crypto Accelerator Module (HSM-Lite). These families are optimal solutions for automotive, industrial, and other applications demanding secure communications, secure boot, authentication, secure key storage and comprehensive security capabilities.

In this comprehensive, hands-on class, you will master the latest techniques in embedded device security. You will learn to utilize on-chip hardware security modules and accelerators for cryptographic operations, key management and secure storage. Through practical exercises, you will implement secure services and enforce isolation between the application and HSM cores using wolfHSM. The class also covers how to establish a secure device identity and attestation using the Device Identifier Composition Engine (DICE), building a hardware-rooted chain of trust for robust device authentication.

Additionally, you will explore Static Random-Access Memory Physical Unclonable Function (SRAM PUF) technology to generate cryptographic keys without persistent storage and enhancing security. A guided secure boot implementation with Trust Platform Design Suite (TPDS) will demonstrate how to ensure only authorized firmware runs on your device. Finally, you will deploy key revocation and rollback counter mechanisms to prevent unauthorized firmware downgrades, further strengthening your embedded system’s security posture. You will leave the class equipped with actionable skills to protect your devices from evolving threats.

26080 SENS5

Optimizing Sensor Data for AI/ML Applications

Hands-on	Hours	Tech Level
Y	3.0	2

Unlock the full potential of Microchip’s Microcontrollers (MCUs) in this hands-on lab focused on sensor integration and data preparation for Artificial Intelligence/Machine Learning (AI/ML) projects. You will learn how to set up sensors, select optimal sampling rates and apply best practices for reducing noise, filtering, logging data, pre-processing, cleaning and storing. Through practical exercises, you will collect, format, and organize sensor data to ensure your datasets are optimized for machine learning applications. By the end of the session, you will have the skills to create high-quality datasets using Microchip’s products, empowering you to innovate and expand your capabilities within the Microchip ecosystem and streamline your data pipeline.



Class Description

26082 ETH2

Using Microchip Ethernet Switches to Provide Deterministic, Reliable and Scalable Connectivity

Hands-on	Hours	Tech Level
Y	3.0	2

Gain hands-on experience in setting up Ethernet switches for industrial networks using the Microchip LAN96xx switch System-on-Chip (SoC) and Linux® Switchdev. This hands-on class guides you through the essentials of Ethernet switch architecture, highlighting the practical differences between managed and unmanaged switches. You will learn step-by-step how to set up and manage network links in Linux, leveraging Switchdev to unlock advanced features such as Virtual Local Area Networks (VLANs) and Precision Time Protocol (PTP). Discover how these capabilities lay the foundation for implementing Time-Sensitive Networking (TSN) protocols, enhancing reliability and determinism in your network.

Experience a live demonstration of IStAX, Microchip’s switch operating system, and see how to activate time-aware shaping and redundancy protocols. You will be equipped to deploy scalable, standards-based Ethernet solutions and enable TSN features for high-performance industrial connectivity.

By the end of the class, you will have an understanding of Ethernet TSN standards, practical experience in configuring Microchip switches, and the ability to apply TSN features to improve network performance in industrial applications.

26083 ETH3

Revolutionizing Connectivity to the Edge: Remote Control Endpoints Over 10BASE-T1S Single-Pair Ethernet

Hands-on	Hours	Tech Level
Y	3.0	1

Learn and explore how Microchip’s LAN866x Ethernet endpoint solutions can simplify and revolutionize the integration of a wide variety of functions into scalable, secure networks — without the need for a connectivity MCU or complex and expensive custom code development. You will use Microchip’s endpoint devices to seamlessly add audio, lighting and sensor capabilities to your 10BASE-T1S single-pair Ethernet network and discover how quickly and easily the devices can be connected to enable smart embedded control and processing.

26090 LPW2

Concept to Connectivity: Building a Zephyr®-Based Bluetooth® LE Multimeter Using a Microchip MCU

Hands-on	Hours	Tech Level
Y	3.0	2

Imagine stepping into a design lab where innovation meets practicality. In this hands-on workshop, professional embedded engineers will embark on a journey to transform a simple idea into a fully functional, Bluetooth® LE-enabled multimeter. Guided by expert instruction and using the PIC32-BZ6 Curiosity Board, VS Code® and Zephyr®, you will learn to architect, build, and test a complex Microcontroller Unit (MCU) application. Along the way, you will demystify a Bluetooth LE stack, master essential Application Programming Interfaces (APIs), and discover how to balance application logic with wireless connectivity. You will also understand how to integrate various Zephyr software modules into an application, such as wired networking and Artificial Intelligence/Machine Learning (AI/ML). By the end of the class, you will walk away with a working prototype and the confidence to tackle future Bluetooth LE projects with ease.



Class Description

26001 PNS1

Analog Offerings From Microchip

Hands-on	Hours	Tech Level
N	1.5	1

This class provides an overview of Microchip’s latest products for mixed signal, linear, analog power, gate drive, CAN and LIN interface devices. You will receive a broad understanding of our latest products across multiple technologies for power and interface needs, leaving with high-level insight for potential integration into your applications and projects. We will also discuss Microchip’s product selection tools, to help you find Microchip solutions for your application needs.

26003 PNPR7

High-Power, High-Reliability and the SiC Revolution: Portfolio Update and Silicon Carbide Deep Dive

Hands-on	Hours	Tech Level
N	1.5	1

This class combines a portfolio update from Microchip’s High-Power Solutions (HPS) and High-Reliability and Radio Frequency (HRR) teams, with a focused technical look at Silicon Carbide (SiC). We begin with the latest product releases and near-term roadmap — advances in SiC and silicon power devices, high-voltage modules, space-grade power and RF solutions — and how these enable higher efficiency, power density and reliability across industrial, energy, aerospace, defense and medical applications. We then go deeper into SiC itself: the material properties behind its performance advantages, and the trade-offs between discrete devices and module-based packaging for electrical performance, thermal behavior and system integration. The class closes with where SiC is making the greatest impact today — pulsed power systems, data centers, renewable energy, electric vehicles, industrial power supplies and motor drives, smart grids and high-voltage power transmission.

26004 PNS4

Microchip is Enabling the Next Generation of 32-bit and 64-bit MPU Embedded Systems

Hands-on	Hours	Tech Level
N	1.5	1

Have you reached a processing and memory ceiling with traditional MCUs? Explore Microchip’s portfolio of 32-bit and 64-bit high-performance MPUs which are used across industrial automation, automotive solutions and edge computing. The first part of this session focuses on the practical system level tradeoffs that drive the transition from MCUs to MPUs, including hardware and packaging considerations, software architecture choices, and development using bare metal, RTOS, and Linux®. Building on this foundation, the session then examines how evolving market requirements, such as increased performance, security, determinism and software scalability — are shaping the move towards 64-bit MPUs. You will be introduced to Microchip’s PIC64 platform and how it addresses these trends for secure, deterministic, AI-enabled edge compute in aerospace, defense and industrial applications. The session concludes with guidance on identifying the right MPU solution using Microchip’s development ecosystem, reference designs and evaluation platforms.

26005 PNS5

Microchip’s Timing Solutions

Hands-on	Hours	Tech Level
N	1.5	1

Explore our timing solutions for applications in automotive, industrial, data center and communications, including Advanced Driver Assistance Systems (ADAS) computing, Global Navigation Satellite System (GNSS) synchronization and holdover, data center synchronization, industrial networking and more. Learn about our Micro-Electro-Mechanical Systems (MEMS) oscillators, clock generators, jitter attenuators, clock buffers and network synchronization Phase-Locked Loops (PLLs) that make complete clock trees for these applications.



Class Description

26006 PNS6

Empowering Innovation: Microchip MCU and dsPIC® Roadmap

Hands-on	Hours	Tech Level
N	1.5	1

Explore Microchip’s current and near-term MCU and dsPIC® Digital Signal Controller (DSC) portfolio and discover how it enables the next-generation embedded designs. This session highlights recently released and upcoming MCUs alongside the latest dsPIC33 devices, with a focus on system capability, scalability and ease of development. You will learn how Microchip’s expanding tools, software and reference solutions accelerate innovation across power, motor control, sensing, connectivity and Artificial Intelligence (AI) at the edge — helping teams to move from concept to production faster.

26009 PNS9

Building Intelligent Systems With Microchip Edge AI

Hands-on	Hours	Tech Level
N	1.5	1

Edge AI enables intelligent processing directly on embedded devices, reducing latency, power consumption and cloud dependence. This work demonstrates an end-to-end embedded Machine Learning (ML) workflow using Microchip’s Edge AI framework and MPLAB® Machine Learning Development Suite, which is applied to a fall-detection use case using accelerometer time-series data.

The pipeline includes data collection, preprocessing, feature extraction, AutoML-based model generation, and optimization for resource-constrained MCU/MPU platforms. Models are validated using cross-validation and deployed as C-based knowledge packs for real-time inference.

The results show that accurate ML inference can be achievable on low-power devices, validating Edge AI for intelligent embedded applications.

26010 PNS10

Optimizing Cost, Schedule, and Reliability With Microchip’s Aerospace and Defense Ecosystem

Hands-on	Hours	Tech Level
N	1.5	1

Aerospace and defense programs are operating under increasing pressure to reduce cost and schedule while maintaining technical rigor and supply continuity. This course reviews Microchip’s evolving aerospace and defense portfolio — including recent product introductions — from a system perspective, highlighting how integrated solutions support efficient design, architectural consistency, and predictable sourcing across diverse applications and mission profiles.

26012 PCB2

From Source to Silicon: Designing Robust Power Delivery Networks for Embedded Systems

Hands-on	Hours	Tech Level
N	3.0	2

Voltage droops, unexpected resets, sensor glitches and communication errors often trace back to power delivery issues — yet many embedded engineers overlook these until it is too late. This class bridges power delivery fundamentals with system and firmware behavior, showing how supply noise, decoupling and Power Delivery Network (PDN) design affect real embedded systems.

You will learn practical, hardware-aware strategies to prevent power-related failures — from improving MCU boot reliability to ensuring stable peripheral operation — without requiring deep hardware specialization. The class also includes an instructor-led demonstration of impedance-versus-frequency simulation analysis to reinforce key concepts and build intuitive understanding.



Class Description

26013 PCB34

What Really is EMI and How Do I Tackle It?

Hands-on	Hours	Tech Level
N	3.0	4

This combined class covers the full Electromagnetic Interference/ Electromagnetic Compatibility (EMI/EMC) story in a single sitting, condensed from the original two-part series. The first half introduces the fundamental principles of EMI/EMC: the mechanisms by which interference is generated and coupled, the regulatory limits that apply, and how conducted and radiated emissions are measured and interpreted. The second half turns to mitigation in practice — filter topologies, and how to design a filter for conducted emissions, together with the layout and grounding techniques that prevent EMI problems from arising in the first place. This is an advanced session that assumes prior board-design experience, and attendees should come with a working knowledge of power supplies, PCB design fundamentals and laboratory measurement equipment.

26015 PCB5

Using AI to Create Your Next Proof-of-Concept Within Minutes

Hands-on	Hours	Tech Level
N	1.5	2

Imagine a world where hardware engineers can bring their ideas to life in record time, with no coding expertise required. In this session, you will follow the journey of an engineer, creating a Proof-of-Concept (PoC) to demonstrate a home automation system. With the help of the Microchip AI Coding Assistant for VS Code®, watch as they overcome coding hurdles, generate working scripts and rapidly iterate their design. The class shows how AI can transform the prototyping process, making it faster and more accessible than ever before.

26017 RTOS1

Using Zephyr® RTOS on Microchip MCUs

Hands-on	Hours	Tech Level
N	3.0	2

Zephyr® Operating System (OS) is an open-source Real-Time Operating System (RTOS) targeted towards embedded systems that includes community support for many Microchip development boards. This class will introduce an engineer to the coding environment, Software Development Kit (SDK), and debug tools available within the Zephyr OS Ecosystem. Using worked examples shown live, the engineer will become familiar with useful OS primitives and tasks, explore the hardware Device Tree, and see how projects are built and deployed to target hardware.

26028 DEV1

Getting Started With MPLAB® Extensions for VS Code®

Hands-on	Hours	Tech Level
N	1.5	2

This course introduces attendees to the MPLAB® Extensions for VS Code®, offering a familiar development environment for existing VS Code users. You will be walked through the MPLAB Extensions for VS Code, seeing how to download and install the extensions, create new projects using the project wizard, and build and program projects on a development board. The class will also cover debugging techniques for running targets and introduce the MPLAB AI Coding Assistant. By the end of the course, you will have the foundational skills to efficiently develop, program, and debug embedded applications using MPLAB Extensions in VS Code.



Class Description

26029 DEV2

Advanced Use of the Microchip AI Coding Assistant

Hands-on	Hours	Tech Level
N	1.5	3

Imagine a team of developers who have mastered the basics of the Microchip AI Coding Assistant (MAICA), but are ready to unlock its full potential. In this advanced masterclass, you will journey beyond simple code suggestions, diving into the world of MPLAB® Agent, Model Context Protocol (MCP) servers, automated code generation and seamless Continuous Integration/Continuous Delivery (CI/CD) integration. Through live demonstrations and real-world scenarios, you will transform your workflow, boost productivity and become leaders in AI-powered development.

26035 FPGA1

Getting Started With Microchip FPGAs

Hands-on	Hours	Tech Level
N	1.5	1

This class is designed for engineers who are new to Field-Programmable Gate Arrays (FPGAs). You will gain an understanding of what FPGAs are, examine the fundamental components of Microchip FPGA architecture, and evaluate the unique advantages of Microchip FPGAs. By the end of the class, you will have a comprehensive understanding of FPGA architecture, design flow and development tools. You will be equipped with the knowledge to start incorporating Microchip FPGA designs into your projects.

26036 FPGA2

FPGA Edge AI Basics: Concepts, Tools and Demos With Microchip VectorBlox™

Hands-on	Hours	Tech Level
N	3.0	2

This class introduces you to deploy AI at the edge using Microchip Field-Programmable Gate Arrays (FPGAs). The class covers the essentials of edge computing, key performance and accuracy metrics, and the advantages of Microchip FPGA architecture for low-power, secure, and deterministic AI applications. Through an instructor-led demo, you will learn the workflow for accelerating Artificial Intelligence/Machine Learning (AI/ML) models and a neural network on Microchip FPGAs using the VectorBlox™ Software Development Kit (SDK) and Libero® System-on-Chip (SoC) Design Suite, running on the PolarFire® SoC Video Kit. The session also highlights real-world use cases and future trends, equipping participants to evaluate, implement and optimize edge AI solutions on Microchip FPGA platforms.



Class Description

26047 MCU7

Digital Signal Processing Using the dsPIC33A 32-bit Digital Signal Controller

Hands-on	Hours	Tech Level
N	1.5	2

Are you comfortable with general-purpose microcontrollers but curious about what a Digital Signal Processing (DSP) digital signal controller can really do? In this class, you will learn the fundamentals of digital signal processing on the dsPIC33A digital signal controller. The class will cover the acquisition of signals from the analog domain, processing of signals in the digital domain and reconstruction of signals back into the analog domain. You will also learn about the capabilities of the 40 MSPS Analog-to-Digital Converter (ADC), how to use oversampling/averaging techniques to increase resolution, and how to implement digital signal processing algorithms using the Floating-Point Unit (FPU), DSP engine and DSP libraries. Finally, you will learn how to use high-speed Pulse-Width Modulation (PWM) modules to reconstruct the analog output as either a Digital-to-Analog Converter (DAC) or a class D amplifier. While this class will demonstrate these capabilities using the dsPIC33A to implement an audio effects processor, the techniques you will learn can be applied to any DSP application you may encounter.

26048 MCU8

Microchip Device Firmware Update Ecosystem

Hands-on	Hours	Tech Level
N	1.5	3

Embedded system designs frequently require a method for updating microcontroller firmware via standard communication buses such as Universal Asynchronous Receiver/Transmitter (UART), Inter-Integrated Circuit (I²C), Serial Peripheral Interface (SPI), and others. Microchip has developed the Microchip Device Firmware Update (MDFU) ecosystem that includes all the tools you need to update client microcontroller firmware. In this class, you will learn about the host tools available in Python® and C that support both development and production use cases. Through instructor-led demonstrations, you will see how the host tools are used to update a variety of client microcontrollers (PIC16/18, AVR®, dsPIC33A, PIC32C) over a variety of different communication buses (UART, I²C, SPI, Controller Area Network [CAN]).

26049 MCU9

PIC64: The King of Real-Time Processing

Hands-on	Hours	Tech Level
N	1.5	3

Are you facing real-time safety and time-critical task constraints while also wishing to run Linux®? Come along and find out about Microchip's PIC64 multi-core Reduced Instruction Set Computer V (RISC-V®) microprocessors (MPUs), where Linux meets real-time with asymmetric multiprocessing. This class will introduce the PIC64 System-on-Chip (SoC) architecture, quell any fears about RISC-V and show you how you can run a fully fledged operating system (OS) alongside a real-time OS all on one device, to bring determinism to a non-deterministic world.



Class Description

26050 FUSA1

Functional Safety Fundamentals: Navigating Standards and Achieving Compliance

Hands-on	Hours	Tech Level
N	1.5	1

This class provides embedded engineers with a clear overview of functional safety principles and the major industry standards: International Electrotechnical Commission (IEC)/Underwriters Laboratories (UL) 60730 for appliances, International Electrotechnical Commission (IEC) 61508 for industrial applications, and International Organization for Standardization (ISO) 26262 for automotive systems. You will learn how to identify which standard applies to your projects, understand the core concepts of functional safety, and gain practical knowledge about Safety Integrity Levels (SIL), including how they are determined and achieved. The class is designed to help engineers address compliance requirements, improve product safety and support customer needs in a competitive market.

26053 FUSA4

Choosing a Safe Software Framework: RTOS Solutions for Embedded Systems With Functional Safety Requirements

Hands-on	Hours	Tech Level
N	1.5	1

This class helps embedded engineers understand how to select and implement safety-certified software frameworks and Real-Time Operating Systems (RTOS) for microcontrollers (MCUs). You will learn the differences between Software Of Unknown Provenance (SOUP), such as Linux® or Zephyr®, and safety-certified solutions like safety-critical RTOS for AVR® MCUs, safety scheduler for dsPIC33A, Threadx®, and PX5 for Arm® or Reduced Instruction Set Computer V (RISC-V®). The session will highlight the efforts and risks involved in using SOUP versus the streamlined path offered by certified solutions from Microchip and third parties. By the end of the course, you will be able to choose the right framework for your application and understand the implications for functional safety compliance.

26054 HMI12

Capacitive Touch and Level Sensing 2026: New Applications, New Parts, Updated Tools and Noise-Robust Level Sensing

Hands-on	Hours	Tech Level
N	1.5	1

This lecture and live-demo class covers Microchip’s capacitive sensing portfolio across both touch interfaces and level sensing. The first half introduces new use cases for Microchip’s proprietary touch technology and shows how modern touch addresses common design challenges, such as moisture, high-noise environments and safety certification, using new parts and tools. You will see how the unified touch toolchain minimizes development effort and become familiar with the turnkey touch parts that require no sensitivity tuning and no host I²C code, alongside the growing maXTouch® touch screen controller family for multi-touch user interfaces. The second half turns to capacitive level sensing with Microchip’s Digital Level Sensor (DLS) technology, covering the True Differential Synchronous Capacitive Voltage Divider (CVD) acquisition algorithm that delivers superior noise immunity and grounding-independent level reporting. Topics include sensor Printed Circuit Board (PCB) design, use of the DLS library (no capacitive sensing experience required) and system characterization with the MPLAB® Data Visualizer GUI, giving you a fast-to-implement and accurate method for fluid and solid level detection.



Class Description

26058 MTR3

Software Tools to Simplify Motor Control Development and Debugging: motorBench® Development Suite

Hands-on	Hours	Tech Level
N	1.5	3

In this instructor-led demonstration, you will see how sensed and sensorless Field-Oriented Control (FOC) code is generated using the motorBench® development suite for Brushless Direct Current (BLDC) and Permanent Magnet Synchronous Motor (PMSM) motors, streamlining your development process. The motorBench development suite is a tool that enables you to generate working motor control code without writing a single line of code! At the end, we will also see how to easily modify the code to have your own state machine for controlling the motor. We will also look into algorithm tuning and live debugging with X2Cscope, which will teach you how to troubleshoot motor control projects in real time. Additionally, we will provide a brief overview of how to use pyX2Cscope to create custom Graphical User Interface (GUI) applications that can interact with the motor control project in real time. If you are looking to accelerate prototyping or reduce development complexity, this class will equip you with the right techniques for rapid deployment of robust motor control solutions.

26060 MTR5

Position Control and Motion Profiling With dsPIC33AK

Hands-on	Hours	Tech Level
N	1.5	1

This session discusses the fundamentals of position and motion control for Permanent Magnet Synchronous Motors (PMSMs) using Microchip's dsPIC33A Digital Signal Controllers (DSCs). You will gain a comprehensive understanding of position control, control loop tuning, Field-Oriented Control (FOC) and integration of position sensors. Key motion control aspects, including motion parameters and motion trajectory profiles (S-curve and trapezoidal) for smooth and precise motion are covered. Additionally, homing and braking operations are discussed. The session is guided by live demonstrations for practical understanding.

26061 MTR6

Developing Motor Control Applications Using MATLAB®/Simulink®

Hands-on	Hours	Tech Level
N	3.0	1

When designing complex motor control applications, model-based design is a preferred approach. MATLAB®/Simulink® from MathWorks® is popular in the industry and integrates well with Microchip's dsPIC® Digital Signal Controllers (DSCs), PIC32 and SAM devices. This class will start with an introduction to the peripheral blocks of dsPIC DSCs, create simple models using such blocks, generate code, program and run the code on dsPIC DSC, entirely from Simulink. Subsequently, the class will move to model-based development of a motor control application, implement current/speed control loop and run the motor with field-oriented control. This class will also include a live demonstration of the entire development process. After attending, you will learn how to reduce your development time and simplify your next motor project with model-based design.



Class Description

26062 PWR1

Mastering Digital Power Supply Designs With the dsPIC33A Digital Signal Controller

Hands-on	Hours	Tech Level
N	3.0	2

Designing digitally controlled power supplies involves navigating a complex toolchain and multidisciplinary design choices. This session provides a start-to-finish, practical methodology for developing a working digital power supply. You will be guided through each stage, from initial specification to firmware implementation and hardware validation, demystifying the most challenging aspects and ensuring you gain a clear, actionable workflow to immediately apply to your next design.

In addition to comprehensive instruction, the session features instructor-led demos that reinforce key concepts. You will see firsthand how Microchip’s MPLAB® PowerSmart™ development suite and MPLAB Code Configurator (MCC) tools are used to expedite the development of robust digital power applications, gaining practical experience that you can leverage in your own projects.

The session will also examine the key performance improvements that make the dsPIC33A MCU ideal for advanced digital power applications. You will review the dsPIC33A core architecture and explore essential peripherals, such as the high-resolution Pulse-Width Modulation (PWM) and the new high-speed Analog-to-Digital Converter (ADC), to understand how these features enable superior control and performance in modern power supply designs.

26066 PWR5

Mastering FPGA Power Management With the MCP16701 PMIC: Beginner Guide, Tools and Best Practices

Hands-on	Hours	Tech Level
N	1.5	2

Designing a reliable and efficient power solution for any Field-Programmable Gate Array (FPGA) requires understanding more than just voltage levels — it demands mastery of sequencing, soft-start behavior, protection mechanisms and thermal management. This practical class explores the FPGA power design workflow using Microchip’s MCP16701 Power Management Integrated Circuit (PMIC), a highly integrated solution designed to support Microchip PolarFire®, IGLOO® 2 and SmartFusion® 2 FPGA families. You will learn how to configure the PMIC for real-world applications, implement critical power management fundamentals, simulate and validate your solutions, and review reference designs to cement your understanding. By the end of this session, you will have the confidence and practical knowledge to deliver robust, efficient and cost-effective power solutions for any FPGA project.



Class Description

26067 PWR6

Simulation-Driven SiC Power Design: From Device Selection to Advanced Thermal Modeling

Hands-on	Hours	Tech Level
N	3.0	2

This class provides a practical guide to simulation strategies, reviewing tools such as Piecewise-Linear Electrical Circuit Simulation (PLECS), MPLAB® Mindi™, Linear Technology Simulation Program with Integrated Circuit Emphasis (LTspice®), and the MPLAB Silicon Carbide (SiC) Power Simulator. You will learn how to select appropriate SiC devices and evaluate thermal and switching performance using simulation, enabling smarter design decisions. By the end of the session, you will be equipped with both the technical understanding and simulation skills needed to optimize power stage designs using SiC technology.

The session also includes a practical case-study. In practical use cases of power supply, it is either forced-air or liquid cooling. This study presents a methodology demonstrating the integration of a forced-air cooling system model within the PLECS simulation environment. The technique leverages standard manufacturer data sheets for heatsink thermal resistance and capacity, allowing designers to directly incorporate these parameters into the PLECS model. The resulting simulation provides an accurate, early-stage estimate of power device junction temperatures under various operating conditions, significantly reducing the need for costly physical prototyping and accelerating the design cycle.

26069 SEC1

Introduction to Cryptography and Post-Quantum Cryptography: Demystifying the Magic

Hands-on	Hours	Tech Level
N	1.5	1

This class introduces key security concepts, such as ECC256, SHA256, AES128, Message Authentication Code (MAC), Hash-based Message Authentication Code (HMAC), Cipher-based Message Authentication Code (CMAC) and Rivest-Shamir-Adleman (RSA). It also introduces National Institute of Standards and Technology Post-Quantum Cryptography (NIST PQC) Algorithms, such as Leighton-Micali Signature (LMS), Module-Lattice-Based Digital Signature Algorithm (ML-DSA) (Di-lithium), Module-Lattice-Based Key-Encapsulation Mechanism (ML-KEM) (Kyber), to highlight differences and implications in embedded systems. You will learn to identify the security aspects required in a design, describe methods of storage and protection of critical keys, and explain the basic principles of cryptography, including authentication, hashing, sign and verification. By the end of the class, you will have a solid understanding of cryptography and its application in secure designs.

Class Description

26070 SEC2

Cyber Resilience Act: A Practical Walkthrough

Hands-on	Hours	Tech Level
N	3.0	2

Are you feeling pressured by the Cyber Resilience Act (CRA) with no clear starting point? This class gives you a practical route to conformity. In a world where cyber threats are ever-evolving and regulatory demands are intensifying, designing embedded products that can withstand hostile environments is no longer optional. Learn how to fill the gap in your existing products, how to identify threats and categorize them in a structured way. See these concepts materialize on a live system, where a hardware trust anchor controls the boot process, protects long-lived keys, and underpins secure updates over the product lifecycle. Gain an overview of the tools available and how to compose a threat and risk assessment. Learn about the operational backbone required to fulfill the CRA obligations. What are your next steps? This class is designed for lead engineers, product managers, and security leads responsible for deployed or legacy designs.

26072 SEC4

Managed Firmware-Over-The-Air Updates Made Easy, Secure and Scalable

Hands-on	Hours	Tech Level
N	3.0	3

Imagine a world where your company's connected devices are deployed across continents, each one a potential target for cyber threats and regulatory scrutiny. As governments and industry bodies worldwide raise the bar for Internet of Things (IoT) security, organizations face the daunting challenge of delivering secure firmware updates and managing cryptographic keys at scale. In this demonstration-led session, you will step into the shoes of a security architect and see how to leverage the keySTREAM™ platform and TrustMANAGER secure element to build a robust, scalable and compliant security infrastructure. By the end, you will have the practical skills to protect your devices, satisfy global standards and future-proof your organization's IoT deployments.

26074 SEC6

Quantum-Proof Your Embedded Systems: Hybrid Secure Boot

Hands-on	Hours	Tech Level
N	3.0	2

Step into the role of a security-focused engineer in this immersive, demonstration-led session. You will learn how to implement secure boot processes and configure remote firmware updates using the dsPIC33A's advanced cryptographic accelerator and security module. Through real-world scenarios and live walkthroughs, you will learn techniques to safeguard your company's valuable firmware against unauthorized access and malicious updates. The session will also introduce post-quantum cryptography strategies, ensuring your embedded applications are future-proof. By the end, you will be equipped to confidently deploy robust security measures for your embedded devices, balancing protection with the flexibility of remote updates.

26075 SEC7

Leaking Secrets: A Side-Channel Attack Lab

Hands-on	Hours	Tech Level
N	3.0	3

Cryptography is only as strong as the hardware it runs on. Even mathematically perfect algorithms can be broken when their real-world implementation betrays their secrets. Modern cybersecurity standards for everything from medical devices to consumer electronics require the use of cryptography to protect stored and transmitted data. In this instructor-led demonstration, you will see how secrets can be leaked directly from microcontrollers through side-channels. We will start with simple power analysis to visualize how a device's code execution paths leak information. This foundation will then build to a full Correlation Power Analysis (CPA) attack, breaking Advanced Encryption Standard (AES) and extracting a 128-bit key live from a hardware target. This session shows how software-only cryptography can be exposed through side-channel attacks and why dedicated hardware, such as Hardware Security Modules (HSMs), are needed to protect keys in practice.



Class Description

26077 SENS2

Inductive Position Sensor Design: From Concept to Production Utilizing Publicly Available Software Resources

Hands-on	Hours	Tech Level
N	3.0	2

Imagine you are part of a team of innovative engineers, eager to solve new product challenges and deliver robust, reliable position sensing solutions. However, you face a critical barrier: the complexity of designing inductive sensor coils and understanding the physics behind them. This practical class guides you through the journey from concept to prototype, using real-world case studies and proven reference designs. By the end, you will have the confidence and skills to create your own inductive sensor designs, ready to tackle demanding applications and take the next step toward production.

26084 ETH4

Gateway Communication Between Single-Pair Ethernet (10BASE-T1S) and CAN-FD in Automotive Networks

Hands-on	Hours	Tech Level
N	1.5	2

Imagine a world where automotive engineers can effortlessly connect the latest Single-Pair Ethernet technology to established CAN-FD networks — without the need for major hardware redesigns. In this class, you will join a team of engineers as they demonstrate how to build a gateway that unites 10BASE-T1S and CAN-FD networks, using real hardware and practical applications. Through live demonstrations and interactive discussions, you will discover how this approach can transform vehicle network architectures, making them more modular, adaptable and ready for the future.

26085 ETH5

Securing Ethernet With MACsec and MACsec Key Agreement (MKA)

Hands-on	Hours	Tech Level
N	1.5	1

Are you currently using Ethernet and are wondering how to protect your data? If so, you should consider Media Access Control Security (MACsec). In this class, you will learn about the Institute of Electrical and Electronics Engineers (IEEE®) MACsec and IEEE MACsec Key Agreement (MKA) specifications, and how they can be applied using a 10BASE-T1S network as an example. Topics include how MACsec works, encryption/decryption and authentication, the MKA protocol, key exchange and handshaking. These topics will be reinforced with an instructor-led discussion around an in-class demo showcasing MACsec and MKA demo in a 10BASE-T1S multi-drop setup.

26086 USB1

Understanding USB 3.0, Type-C & Power Delivery — Fundamentals, Use Cases and Troubleshooting

Hands-on	Hours	Tech Level
N	1.5	2

This class provides a comprehensive overview of Universal Serial Bus (USB) 3.0 architecture, protocol and power management, along with an introduction to USB Type-C®, Power Delivery (PD) and alternate modes. Additionally, we will cover common software and hardware issues in USB communication and demonstrate how to analyze USB 3.0 enumeration and packet transfers using a protocol analyzer. Through real-world examples, we will explore how USB 3.0 is used in various applications. We will also showcase how Microchip's USB 3.0 hubs, USB bridges, and PD controllers can be leveraged to design scalable, efficient solutions for these applications. By the end of this session, you will gain practical knowledge of USB 3.0 and Type-C implementation, along with debugging techniques to optimize performance and ensure seamless connectivity in real-world designs.



Class Description

26087 USB2

**Confident High-Speed Digital Design:
Practical Layout & Simulation Demos for
High-Speed SerDes (Ethernet/USB/PCIe®)**

Hands-on	Hours	Tech Level
N	3.0	2

Are you ready to overcome the toughest challenges in high-speed Serializer/Deserializer (SerDes) (Ethernet/USB/Peripheral Component Interconnect Express [PCIe®]) device design? This signal integrity class is designed to help you avoid costly development delays and redesigns by providing strategies to address common pitfalls such as signal reflections, return path discontinuities, crosstalk and mode conversion.

Through engaging demonstrations, real-world examples and simulation results, you will discover proven best practices for designing robust high-speed channels that pass compliance tests and deliver reliable performance. This training provides practical guidance on implementing high-speed digital buses and multi-gigabit SerDes channels, setting up Printed Circuit Board (PCB) design constraints, stackups, and routing SerDes channels on different PCB layers — all illustrated using real-world Ethernet switch reference designs.

You will also observe step-by-step demonstrations on importing Input/Output Buffer Information Specification (IBIS) models and running signal integrity simulations, as well as see firsthand how common layout mistakes can impact signal quality. These instructor-led sessions will help you recognize and avoid errors in your own designs.

If you are looking to strengthen your understanding of high-speed PCB design and signal integrity, this class offers essential knowledge and practical insights.

26089 LPW1

**Bluetooth® in a Blink: Rapid Wireless
Integration With RNBD Bluetooth LE
Modules**

Hands-on	Hours	Tech Level
N	1.5	1

This instructor-led demonstration introduces Bluetooth® LE fundamentals and shows how to rapidly integrate wireless connectivity using the RNBD350 Bluetooth LE module and simple ASCII commands. Designed for embedded developers of all skill levels, the class focuses on practical, real-world techniques for adding Bluetooth LE to existing products with minimal hardware and firmware effort.

With the RNBD350 module, Bluetooth LE integration becomes simple, fast, and accessible, empowering developers to bring wireless capability to their products in hours instead of weeks.

26091 LPW3

**Rocket Science: Live Bluetooth® LE Data
Acquisition and Visualization via Long Range
Data Link**

Hands-on	Hours	Tech Level
N	1.5	1

Imagine launching a model rocket and watching its flight path unfold live on your laptop — altitude, acceleration and orientation — all streaming in real time. In this instructor-led class, you will step into the shoes of an embedded engineer tasked with building a cutting-edge data acquisition system for model rocketry. Using the WBZ451 Curiosity board and MIKROE Altimeter Click board™, you will see how to architect a robust application with Free Real-Time Operating System (FreeRTOS®), harness the power of high-performance Bluetooth® LE, and visualize flight data with a custom Python® app. By the end, you will have the knowledge to bring your own rocket telemetry projects to life.



Class Description

26092 HAILO1

Real-Time AI, On the Device: Inside Hailo's Accelerators and Vision Processors

Hands-on	Hours	Tech Level
N	1.5	2

Microchip has acquired Hailo, a leader in high-performance edge AI processors — and this session is your introduction to the portfolio. Hailo builds AI accelerators and vision processors that run neural networks directly on the device, with no cloud connection required. Its dataflow architecture is purpose-built for deep learning rather than adapted from general-purpose compute, delivering real-time inference at a fraction of the power, board area and cost. We walk the full range — from the entry-level Hailo-8L, through the DRAM-free Hailo-8, to the Hailo-10H running generative AI on-device, alongside the Hailo-15 camera SoCs. We also cover the software: the Dataflow Compiler, HailoRT Runtime and Model Zoo, supporting CNNs, vision transformers and LLM/VLM workloads. Real deployments ground it throughout, closing with how Hailo fits alongside Microchip's embedded processing, FPGA, security and analog portfolio. Come away knowing which device fits which problem, and where to start your first design.

26093 MTR7

e-Scooter Reference Design Masters Class

Hands-on	Hours	Tech Level
N	1.5	3

This class will introduce you to Microchip's 48V, 6 kW two/three-wheeler traction motor controller. The reference design is packed with numerous features such as support for a wide range of rotor position sensors, FOC with modulation capabilities for flux weakening, MTPA, MTPV, a UART-based bootloader for convenient firmware updates, and a scalable design that supports higher power for traction applications. The traction motor control firmware supports Permanent Magnet (PM) based motors, including Interior PM and Surface PM motors, as well as magnetless (non-rare-earth-magnet) motors such as Synchronous Reluctance Motors and PM-assisted Synchronous Reluctance Motors. In this class, the basics of the hardware design and software algorithm will be covered. There will be a live demonstration of the controller, along with a review of test results conducted with the controller. If you are planning to contribute to India's EV growth story and design your next motor controllers for two/three-wheelers, this class is a must-attend for you.



Contact Us

For further enquiries, please contact us via indiamasters@microchip.com or reach out to the contacts below:

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Enabling AI at the Edge

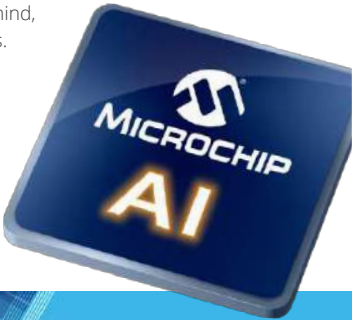
Optimized Hardware for Machine Learning Models

Artificial Intelligence (AI) and Machine Learning (ML) are transforming industries by enabling smarter, more autonomous systems. However, deploying AI at the edge—where real-time decision-making is essential—requires highly efficient, low-power solutions tailored for embedded environments. Microchip Technology is leading the way in this transformation with a comprehensive suite of processors, FPGAs, and development tools that make it easier than ever to bring intelligence to the edge.

Across critical sectors like **smart factories, medical diagnostics, automotive systems, construction equipment, agriculture, and smart cities**, edge AI is unlocking real-time insights and automating tasks where cloud connectivity is limited or latency is unacceptable. Whether it's predictive maintenance on a factory floor, patient monitoring in a hospital room, object detection on a construction site, or energy-efficient traffic management, Microchip's solutions empower developers to deploy ML where it's needed most.

Microchip simplifies the path to edge AI integration with our **ML Development Suite**, a robust toolkit that streamlines model training, quantization, and deployment on our microcontroller and microprocessor platforms. For high-performance edge inferencing using FPGAs, our **VectorBlox® Accelerator Software Development Kit** enables fast and efficient implementation of neural networks on PolarFire® FPGAs—delivering industry-leading performance-per-watt.

Our solutions are engineered with scalability, security, and long-term reliability in mind, ensuring that edge AI systems can operate seamlessly in demanding environments. With Microchip, developers can confidently build intelligent edge devices that are efficient, responsive, and built for the future.



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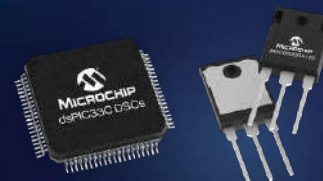
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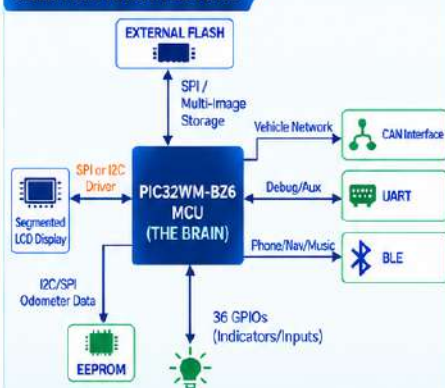
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2W/3W CLUSTER DESIGN PIC32WM-BZ6 HERO PRODUCT

Advanced Connectivity for
Next-Generation Two-Wheelers



SOLUTION ARCHITECTURE



KEY PARAMETERS

- MCU**
PIC32WM-BZ6
- Core**
Dual-core (MIPS + Arm® Cortex®-M4F)
- Connectivity**
CAN, UART, SPI, I2C, BLE
- Display**
Segmented LCD support
- External Memory**
SPI Flash, EEPROM
- Application**
2W/3W Cluster, Telematics, Navigation, Diagnostics



- TURN-BY-TURN NAVIGATION**
 - Directional prompts to segmented LCD
 - Rider-focused guidance
- IMMOBILIZER SUPPORT**
 - Secure, proximity-based key functionality
 - Theft prevention
- CAN DIAGNOSTICS OVER BLE**
 - Secure mobile app access
 - Real-time CAN data
- ANDROID APP PARITY**
 - Seamless app-free experience
 - Consistent UX

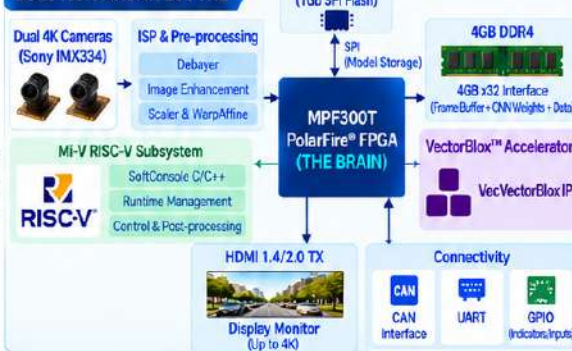
PolarFire® FPGA Video Kit - VectorBlox™ Design

Ultra-Low Power 4K Video Processing & Neural Network Inference Engine

AI-Powered Vision for
Smarter Applications



SOLUTION ARCHITECTURE



KEY FEATURES

- Dual 4K Camera & Video Input**
Dual Sony IMX334 sensors, HDMI 1.4/2.0 TX
- VectorBlox Accelerator**
< 5W power, high-throughput inference
- MI-V RISC-V Ecosystem**
SoftConsole runtime, DMA from DDR4
- Multi-Model Inference**
RetinaFace, TinyYOLOv3, dynamic switching
- High Performance, Low Power**
Optimized 300K LE architecture



MPF300-VIDEO-KIT-NS

DEMO APPLICATIONS



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