



# Capability Overview

Embedded systems, industrial edge gateways and production-ready platforms

**Engineering | Prototyping | Production Support**

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## Engineering Partner for Industrial Embedded Systems

# Who We Are

Pi Modules Technologies L.P. specializes in advanced embedded systems for industrial, networking, AI and IoT applications — from architecture and electronics design to firmware, mechanical integration, testing and manufacturing support.

**70+**

countries

**200,000+**

products  
manufactured

**38+**

years of engineering  
experience

- Industrial Embedded Hardware Design
- Raspberry Pi CM4 / CM5 Platforms
- Embedded Linux & Firmware
- High-Speed PCB Design
- Mechanical Integration
- Prototype & Production Support

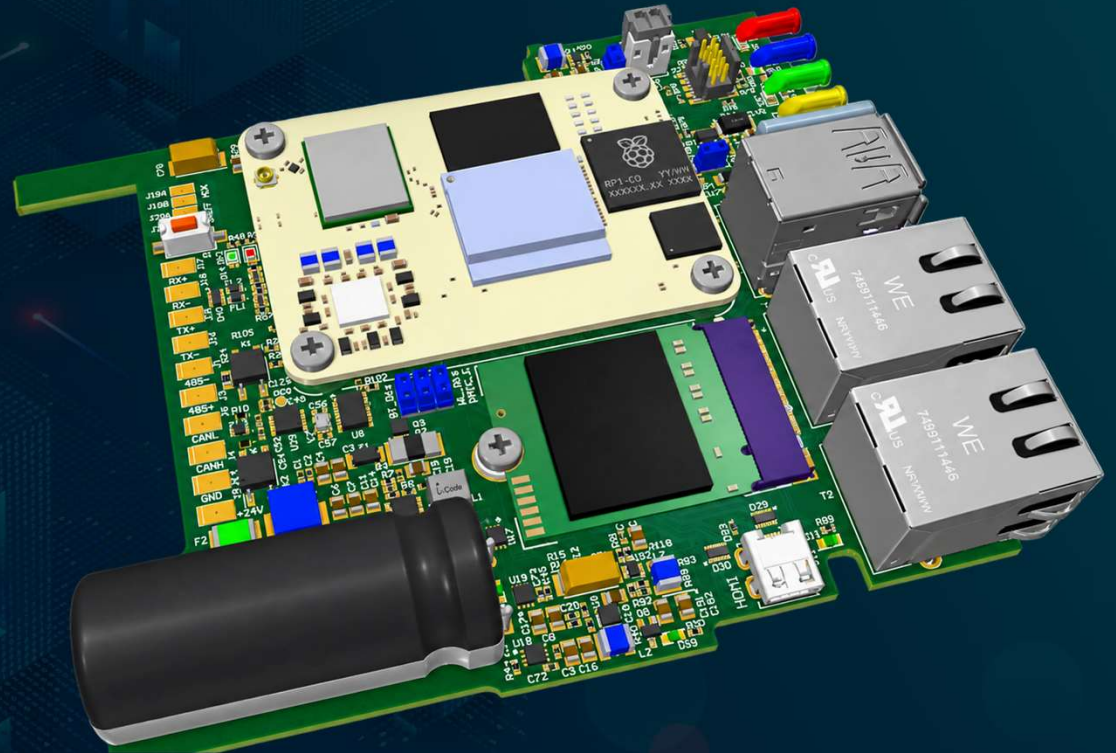
## Product 01

# Industrial CM5 Controllers

TSN, SPE and Industrial Ethernet platforms

- CM5-based industrial controller architectures
- High-speed Ethernet and synchronized I/O
- Custom carrier boards and rugged edge gateways
- Designed for scalable monitoring and control

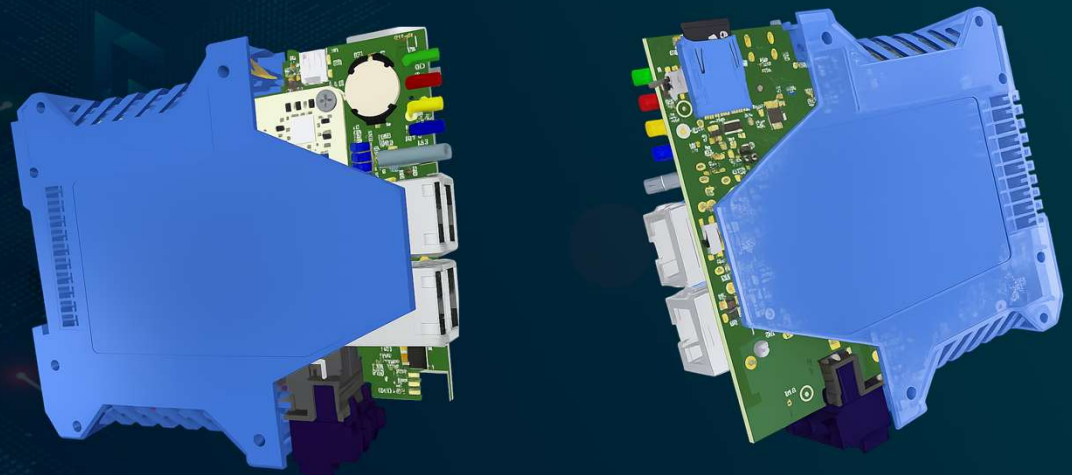
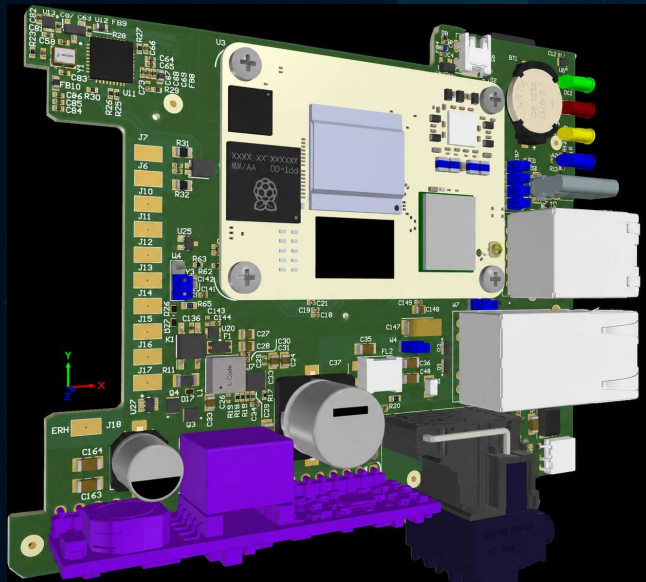
One product family per slide —  
Large visuals, largest text



## Featured Project

# CM4/5 Platform

CM5-based monitoring platform



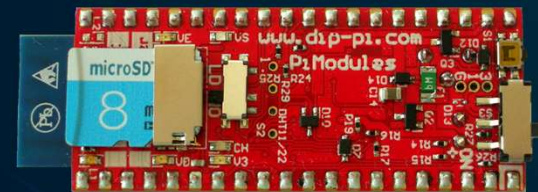
Modular CM5-based monitoring platform featuring high-speed Ethernet, precision synchronization, and a scalable I/O architecture for next-generation industrial monitoring systems.

## Product 02

# Raspberry Pi Expansion Boards

Carrier boards and industrial I/O

- Custom Compute Module carrier boards
- Industrial I/O expansion and connectivity
- Fast prototyping for CM3, CM4 and CM5
- Designs prepared for production transfer



## Product 03

# Power & UPS Modules

Industrial power management solutions

- Backup power and safe shutdown support
- Battery, supercapacitor and DC input options
- Compact integration for Raspberry Pi systems
- Designed for industrial reliability

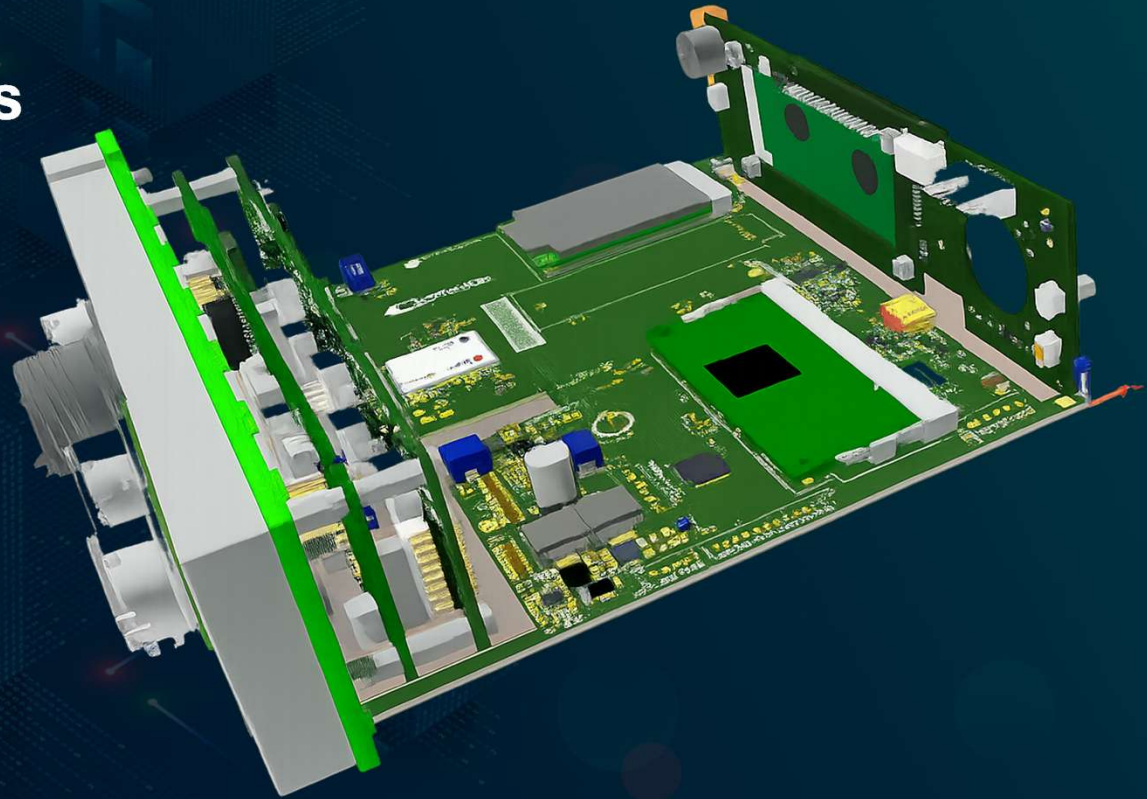


## Product 04

# Custom Embedded Platforms

Designed for customer-specific applications

- Bespoke PCB assemblies and mechanics
- Embedded Linux and firmware integration
- Mechanical enclosure and thermal design
- Prototype validation and design iteration



## Product 05

# Industrial Networking Solutions

Ethernet and edge computing devices

- Multi-port Ethernet and secure networking
- High-speed packet processing platforms
- Secure communication and cryptographic use cases
- Mission-critical edge connectivity



## Our Services

# Prototype to Production Support

Production-ready engineering workflows

### 01 Architecture & Specification

System definition, component selection and production planning

### 02 Electronics & Firmware

PCB design, embedded software and Linux integration

### 03 Prototype Validation

Bring-up, test, redesign and manufacturing readiness

### 04 Production Support

Documentation, supply chain support and factory transfer



**Manufacturing focus: repeatable builds, test procedures and production documentation.**



# Engineering Tools & Technologies

The tools we use to design, develop and deliver reliable products

## Electronic Design



- Schematic Capture
- PCB Design
- High-Speed & Multi-Layer PCB
- 3D Visualization
- Design Rule Check (DRC)

## Mechanical Design



— or —



- Enclosure & Mechanical Design
- 3D Modeling
- STEP Export & Manufacturing Drawings



## Software Development



- Firmware Development in C
- Application Development in Python
- Embedded Linux & Automation
- Testing & Integration

## MCU & Processor Platforms



- PIC® MCUs
- dsPIC® DSCs



- i.MX Processors
- LPC MCUs



- STM32 MCUs
- STM32MP Processors

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7/16/2026



# Simulation & Analysis

We validate our designs using advanced simulation tools



## Signal Integrity

High-speed signal analysis to ensure reliable performance



## Power Integrity

Power distribution network analysis for stable operation



## Thermal Analysis

Thermal performance evaluation to ensure reliability

EMC

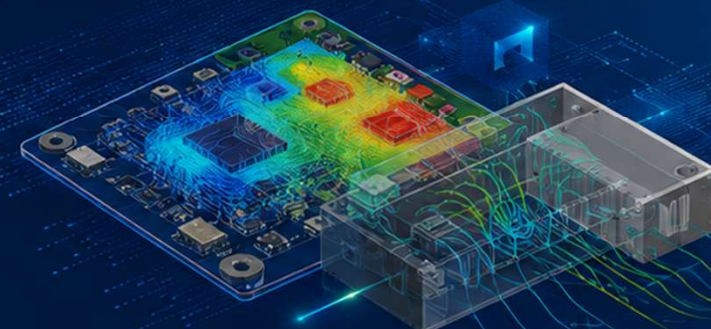
## EMC/EMI Analysis

Electromagnetic compatibility simulation for compliance and robustness



## Mechanical Simulation

Stress, vibration and structural analysis for mechanical design validation



# Thank you

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## Factory and production capability

