PSOC™ Control C3

Online Media Briefing

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In 2024, we shared our roadmap for three new PSOC™ MCU families. PSOC™ Control is the first family available on the market

PSOC™ Control

MCUs for Motor Control & Power Conversion systems

Available now

PSOC™ Edge

ML enabled MCUs with advanced HMI

Available in Q2-2025

PSOC™ Connect

Connected MCUs with leading wireless capabilities

Available in 2026

With PSOC™ Control, we are focused on addressing the need for higher efficiency across the Industrial MCU market segments

1. Motor Control

- **Higher system efficiency** and **control loop accuracy** is key
- Growth driven by Robotics and Home Appliance applications

2. Power Conversion

- **Higher efficiency** and **performance** enabled by WBG (SiC/GaN)
- Optimized MCU products needed for WBG solutions

3. Industrial Communication

- Evolving communication standards and user interfaces

Focus of available PSOC™ Control C3 Entry and Main Line products

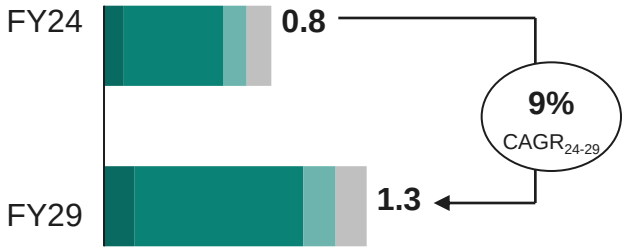
Planned PSOC™ Control portfolio expansion

PSOC™ Control targets the growing markets of motor control and power conversion

Target MCU Market Outlook (in bn €)

Motor Control

Power Conversion



SAM by Segment

- Home Appliance
- Smart Home
- Industrial
- Other*

*Incl. Media, Gaming & Compute and Health & Lifestyle segments
Source: Infineon Market Model 2024

PSOC™ Control C3 Focus

Key trends and drivers across all Industrial MCU segments

Common Software & Tool environments (incl. more AI/ML)

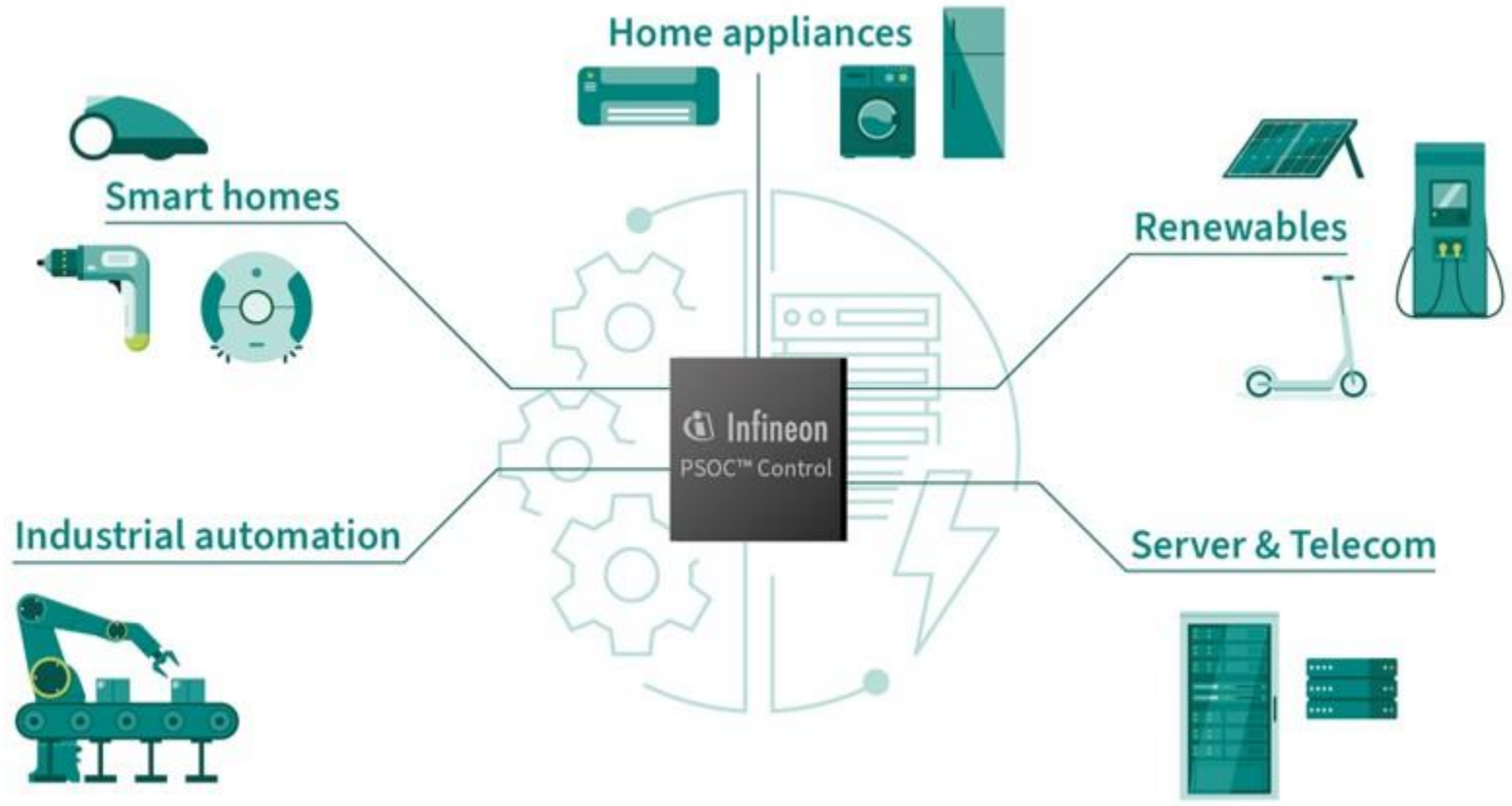
Strong and exhaustive Ecosystems

Functional Safety and Advanced Security

PSOC™ Control C3 – Infineon's new Arm® Cortex®-M33 based MCU family with real-time control and differentiating control peripherals

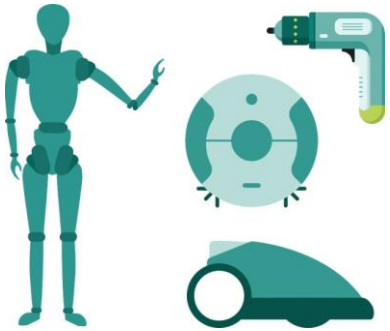
PSOC™ Control C3

- **Arm® Cortex®-M33** based MCUs
- **Real-time control**
- **Scalable and compatible portfolio**
- **Differentiating control peripherals,** ready for Wide-bandgap solutions
- **PSA L2 / EPC2 security**
- **Class B / SIL 2 compliant** Safety libraries



PSOC™ Control – Focus on Industrial & Consumer applications, ready for WBG and part of optimized Infineon solution offering

Smart Home



- Power/Gardening tools
- Lawn mower robots
- Home robots

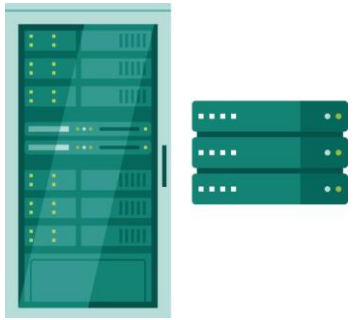
Home Appliances

- Residential aircon ODU
- Large and medium Home Appliances Drives

Renewables

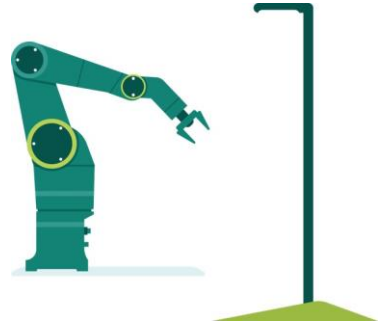
- PV inverters
- LEV
- EV charging

Server & Telecom (SMPS)



- Telecom PSUs
- Server PSUs
- Workstation PSUs

Industrial



- General purpose drives
- LED Lighting
- Servo Drives
- Commercial aircons

Motor Control

Power Conversion

Communication

SiC

GaN

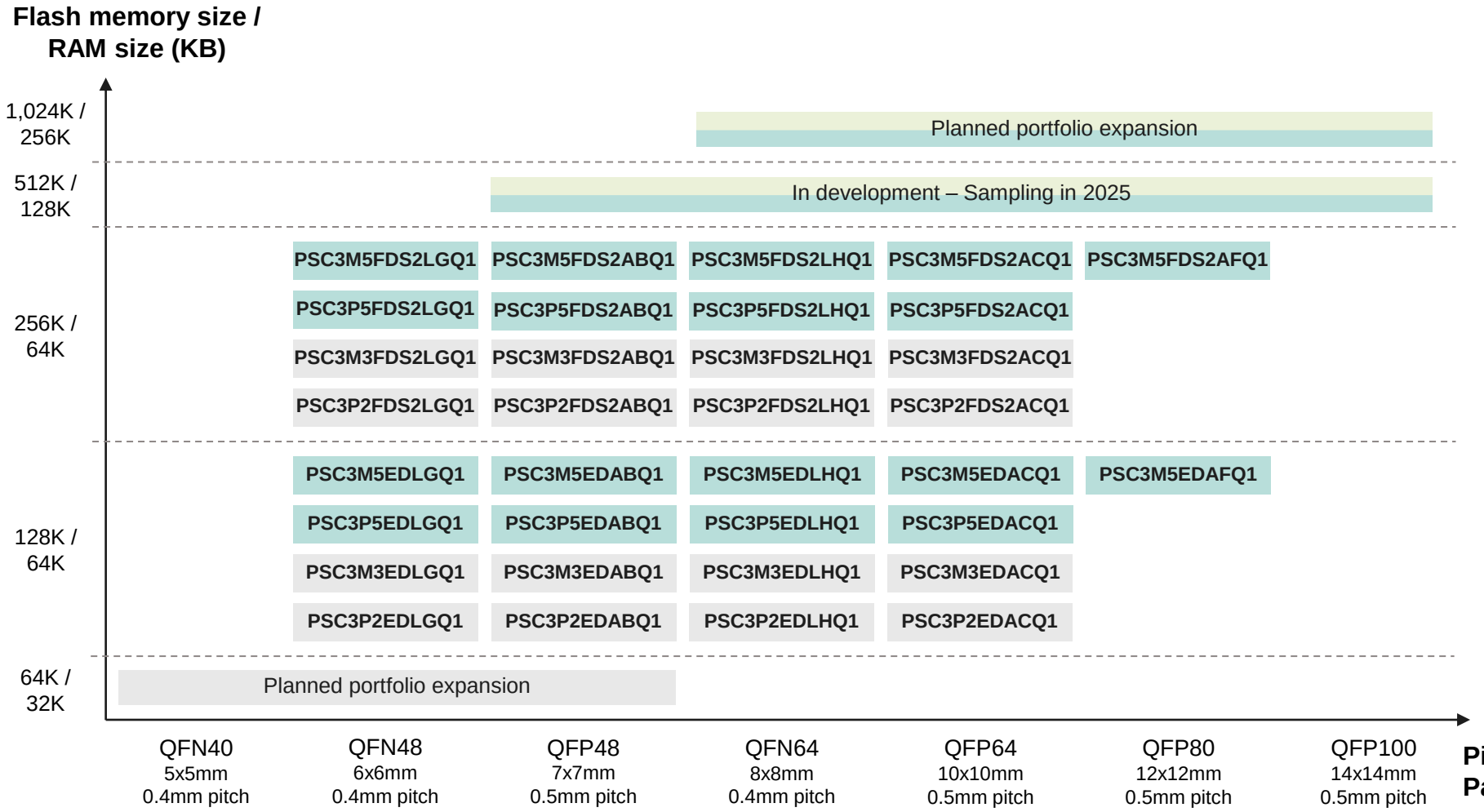
Wide-bandgap (WBG) ready

System solution offering with other Infineon products

PSOC™ Control C3

PSOC™ Control C3 Portfolio – We are launching Main Line and Entry Line with 34 available parts for active design in

PSOC™ Control C3 – Portfolio and Device Overview



PSC3**M**: **Motor** (Cordic + MOTIF)
PSC3**P**: **Power** (PMBus)

PSOC™ C3 Product Lines with full Software Compatibility

PSOC™ C3 Performance Line

PSOC™ C3 Main Line

ARM® Cortex® M33 up to 180MHz
DSP/FPU and CORDIC (option)
12-bit 12-MSPS ADC w/ 16 S&H
240MHz 16/32-bit TCPWM
100ps HRPWM Timers
PSA L2 Security and CAN-FD

PSOC™ C3 Entry Line

ARM® Cortex® M33 up to 100MHz
DSP/FPU and CORDIC (option)
12-bit 6-MSPS ADC w/ 16 S&H
120MHz 16/32-bit TCPWM
PSA L2 Security and CAN-FD

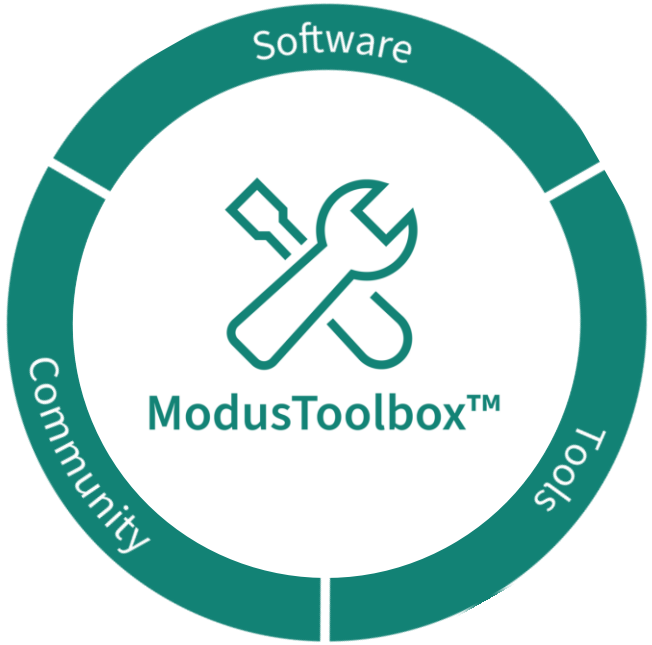
PSOC™ Control C3 – Enabling developers to create high-performance, highly efficient and secured motor control and power systems with ease

	Customer and System Benefits
Real-time control	**Enable high-performance systems to respond to real-time events** with minimal delay and low utilization – Systems combining dual-motor control and high-frequency multi-phase PFC – Very high RPM motor control systems with full dynamic control range
System efficiency	**WBG-ready with fast, precise analog processing and digital control** to improve control loop accuracy and system efficiency – Power Conversion systems in Power Supply Units (PSUs) – FOC for motor systems **Low standby power** for battery powered applications
Ease-of-use for developers	**Quick time-to-market with ModusToolbox™** as unified and comprehensive software and ecosystem platform for developers
Advanced security	**Enable secure on-site and cloud-based systems** with secure Over-the-air (OTA) updates, software IP protection, and secure key storage

ModusToolbox™ –
One ecosystem platform for comprehensive development

Embedded Software
- Application specific embedded SW
- Core libraries (function blocks)
- Generic embedded SW

Graphical User Interfaces (GUIs)
- Quick start GUI
- Advanced configuration GUI
- Application design tool
- Memory & performance tools



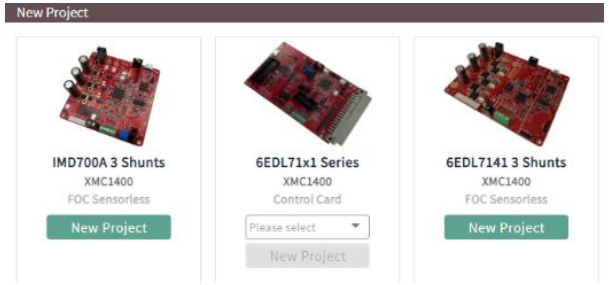
Services
- Ticketing and reporting system
- Testbench
- Deployment platform
- Fleet management
- Over the air updates

Tools
- Model based design
- IDE
- Debugger
- Tracebox

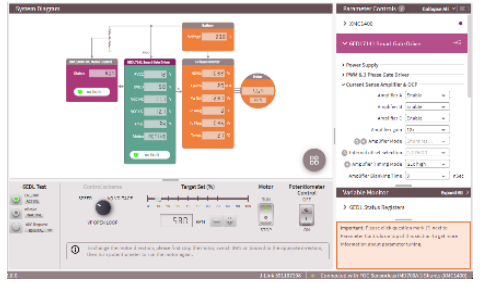
Hardware
- Reference designs
- Control Demo boards
- Power Stage Demo board

Documents
- Datasheets
- User guides
- Application notes

Motor control development is a complex task. ModusToolbox™ Motor Suite simplifies development and accelerates innovation



One Graphical Interface to **detect and operate multiple evaluation boards and control schemes**



Motor profiler for **simplified motor tuning**

Automated Detection

Motor Profiler

ModusToolbox™

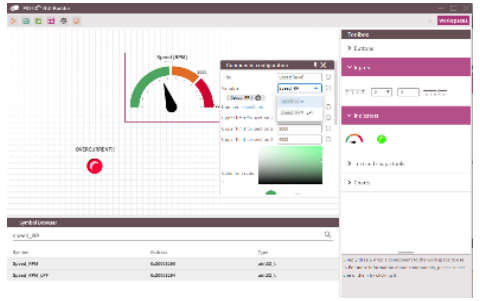
Motor Suite

Digital Oscilloscope

Customizable GUI

Easy visual evaluation and in-depth analysis with embedded digital Oscilloscope

Interactive system diagrams and customizable GUI for **efficient analysis and debugging**

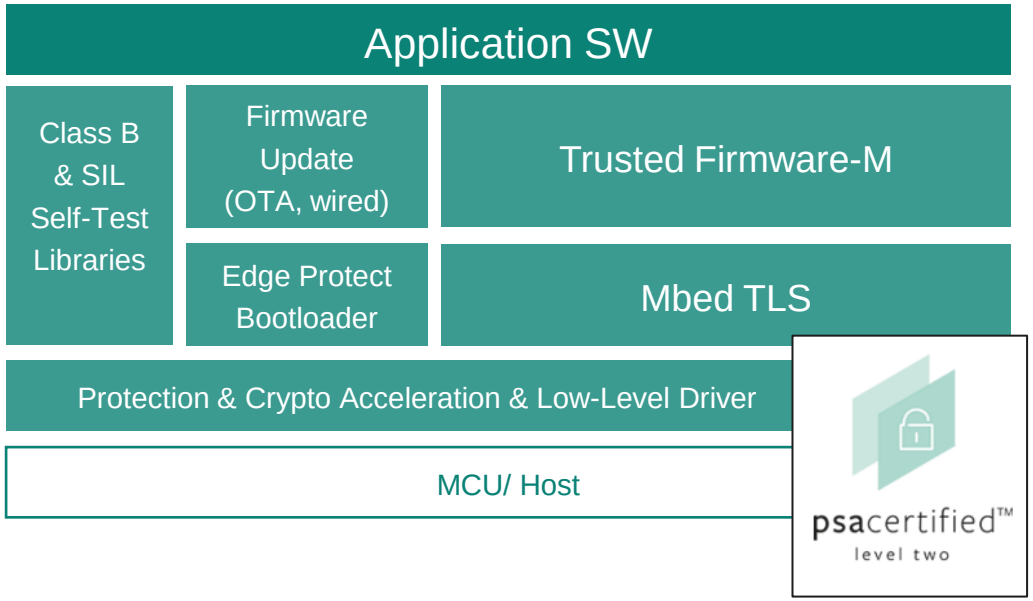


ModusToolbox™ Motor Suite empowers developers to **create innovative motor control solutions** by providing a comprehensive, integrated development environment, advanced algorithms, and optimized semiconductor products

PSOC™ Control C3 Safety and Security Offerings

Security Software

- Secure Boot Firmware
- Secure Firmware Update
- Edge Protect Bootloader based on MCUBoot
- Secure Debug
- Trusted Firmware-M
  - Supporting PSA Level 2 Certification (*pending*)
  - With PSA Firmware Update API
- Security code examples and application template



pending certification

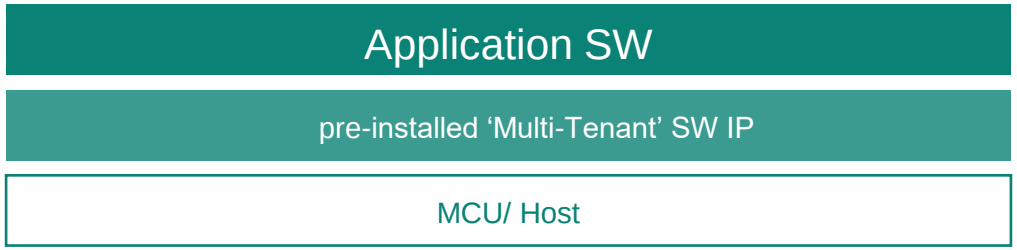
Platform Security Architecture

Safety Software

- Class B & SIL 2 self-test libraries, Certification

3rd Party ‘Multi-Tenant’ Firmware Support

- Supports confidentiality of pre-installed software IP



Summary

We have the right MCU portfolio for your designs

With our new MCU families, PSOC™ Control, Edge, and Connect, we continue to invest in our portfolio advancement to deliver superior capabilities for the creation of next gen IoT devices for Consumer and Industrial

We innovate to offer reliable solutions for you

PSOC™ Control MCUs increase performance and efficiency of motor control and power conversion systems. They enable real-time control of systems that need to respond to real-time events with minimal delay and low utilization

We put you at the center of our technology

With support of system design tools and software, our comprehensive solutions allow developers to create high-performance, highly efficient and secured motor control and power conversion systems with ease


Infineon