

MATLAB® Simulink® Embedded Coder Library for XMC MCUs

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Embedded Coder XMC Library

MATLAB® Simulink® Embedded Coder Library for XMC MCUs



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Embedded Coder XMC Library

MATLAB® Simulink® Embedded Coder Library for XMC MCUs



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Embedded Coder XMC library benefits

MATLAB® Simulink® Embedded Coder Library for XMC MCUs



Device lib



Peripherals lib



CORDIC lib



**Advanced
resources**

Benefits

- Fast Model-Based development for real-time applications
- Optimized XMC MCU code generation from a Simulink® project (including CORDIC instruction set)

Benefits

- Easy porting of generated code into DAVE™ or other third party tools
- Complete peripheral initialization from Simulink® environment
- XMC MCU application library creation from MATLAB® Simulink®

For MATLAB® & SIMULINK®

MATLAB® & SIMULINK®



Features and Flow

MATLAB® Simulink® Embedded Coder Library for XMC MCUs



MATLAB & SIMULINK

Device lib



Peripherals lib



CORDIC lib



Advanced
resources

Workflow for
*Model-Based Design
Motor Control applications
Power Conversion applications
Real-time applications*

- Automatic Code Generation
- Automatic object Generation
- Easy code porting for DAVE

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Embedded Coder XMC Library - features

**MATLAB® Simulink®
Embedded Coder Library
for XMC MCUs**

XMC Device Selection

XMC4500 ✓

XMC1300 ✓

XMC4400 ✓

XMC1200 ✓

XMC4200 ✓

XMC1100 ✓

XMC4100 ✓

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Embedded Coder XMC Library - features

**MATLAB® Simulink®
Embedded Coder Library
for XMC MCUs**

XMC Device Selection



**XMC Peripheral Block
Library**

CCU4

POSIF

CCU8

HW Int

VADC

GPIOs

BCCU

Systick
timer

*Timers;
Analog-to-Digital;
Port Pins;
Interrupts;
Rotary Encoder, ...*

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Embedded Coder XMC Library - features

**MATLAB® Simulink®
Embedded Coder Library
for XMC MCUs**

XMC Device Selection



**XMC Peripheral Block
Library**



CORDIC library



**Automatic algorithm
optimization for devices
with coprocessor**

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Embedded Coder XMC Library - features

**MATLAB® Simulink®
Embedded Coder Library
for XMC MCUs**

XMC Device Selection



**XMC Peripheral Block
Library**



CORDIC library



Advanced library blocks

**Initialization
Sequence**

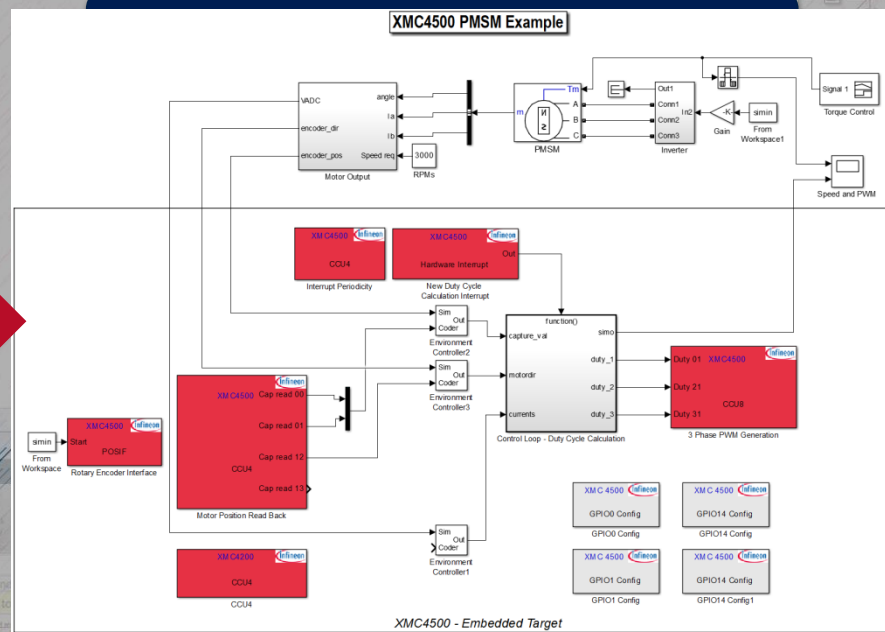
**Resource
naming**

**Multiple
Interrupt
routines**

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Embedded Coder XMC Library - example

**MATLAB® Simulink®
Embedded Coder Library
for XMC MCUs**



**Automatic
Code
Generation
for XMC**

**Application Development
MATLAB Simulink**



Embedded Coder XMC Library – code gen

**MATLAB® Simulink®
Embedded Coder Library
for XMC MCUs**

XMC Device Selection



XMC Peripheral Block
Library



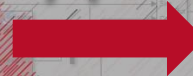
CORDIC library



Advanced library blocks



easy porting



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Embedded Coder XMC Library

MATLAB Simulink Embedded Coder Library for XMC MCUs

Coming soon



Device lib



Peripherals lib



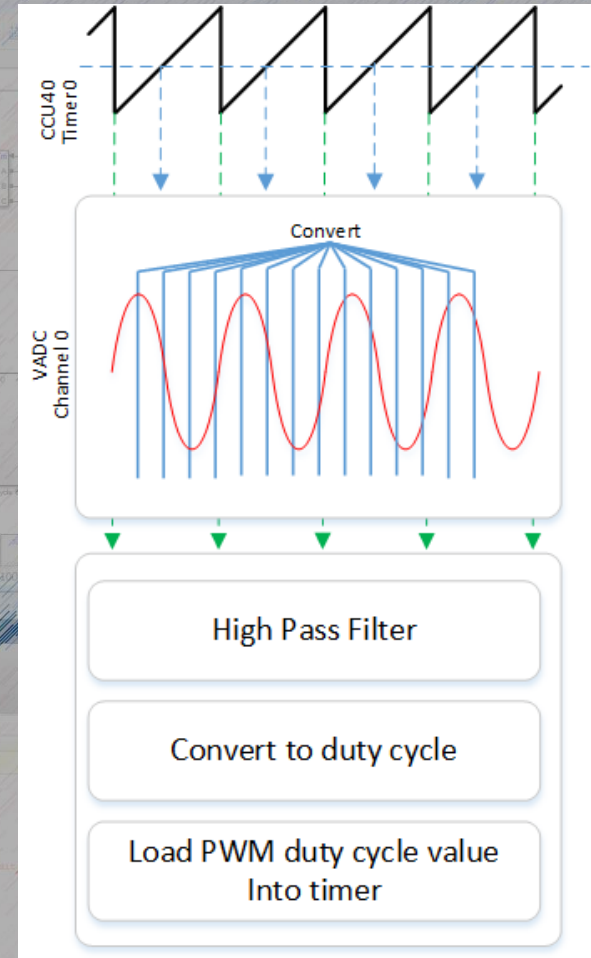
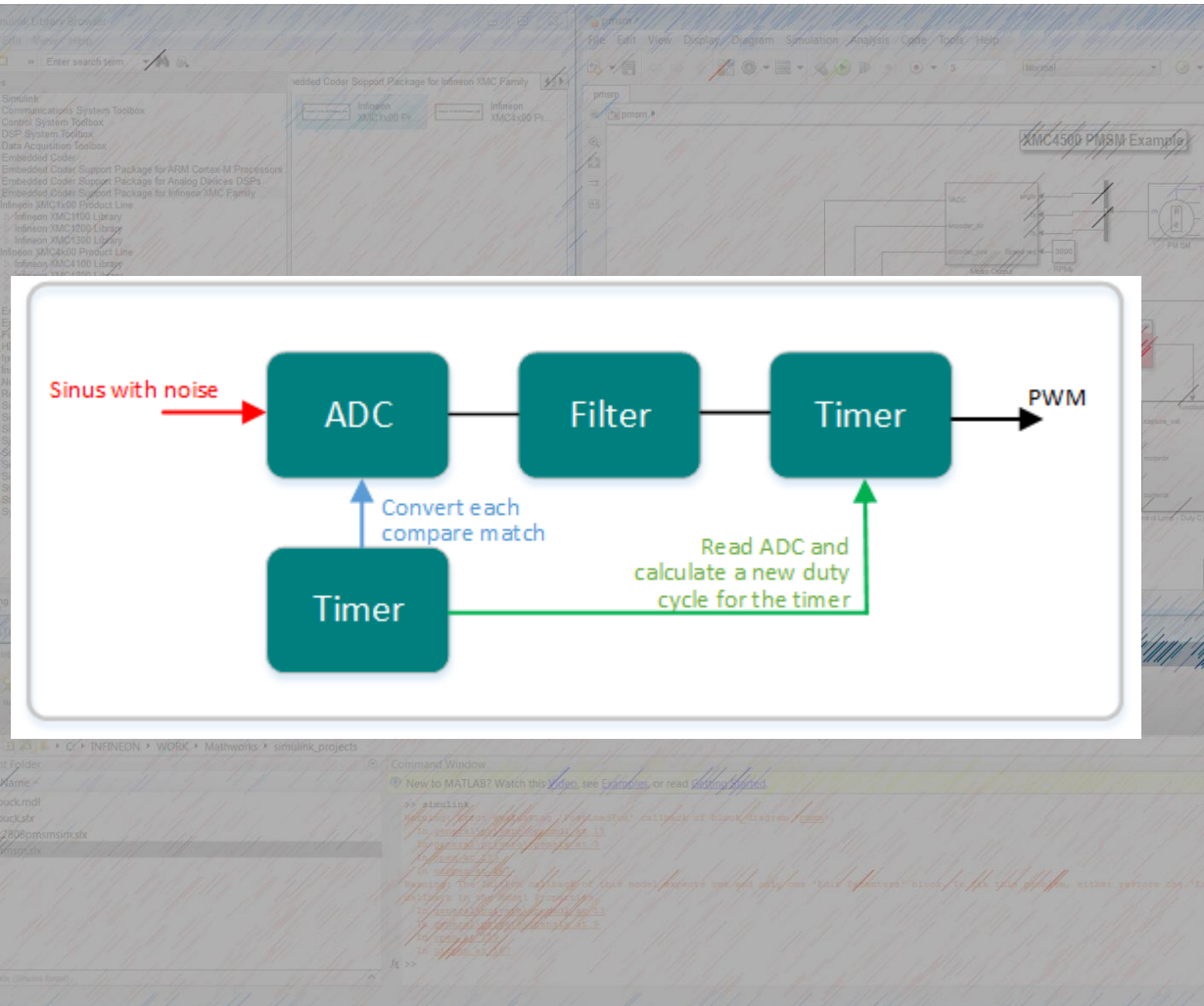
CORDIC lib



Advanced
resources

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Embedded Coder XMC Library - example





ENERGY EFFICIENCY MOBILITY SECURITY

Innovative semiconductor solutions for energy efficiency, mobility and security.

