

RL78 FAMILY MICROCONTROLLER SIMULATION & CODE- GENERATION BLOCKSET

Date : April 10, 2026

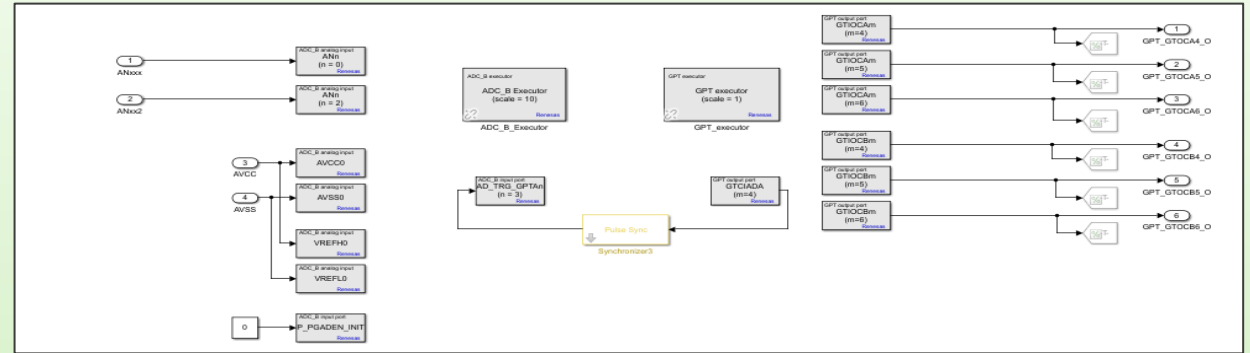
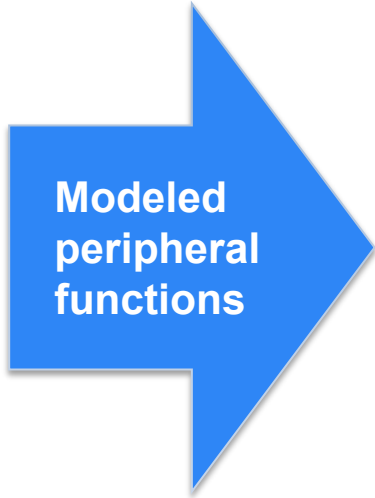
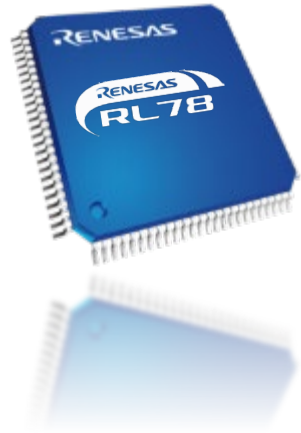
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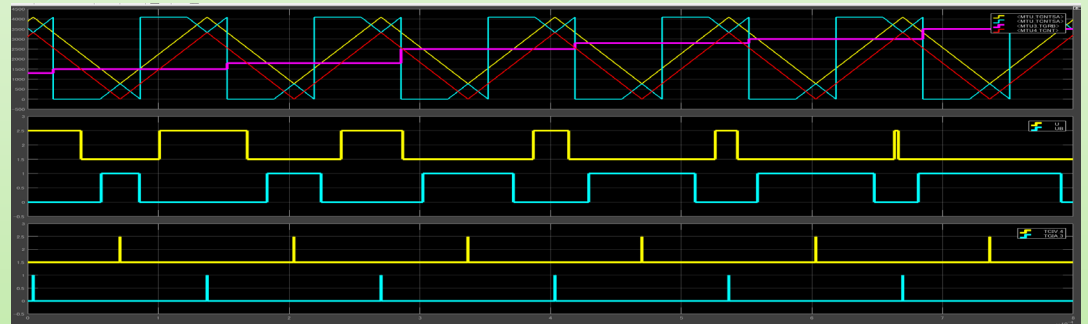
WHAT IS THE MICROCONTROLLER SIMULATION & CODE-GENERATION BLOCKSET

Provides a Simulink® model that emulates actual peripherals behavior



Blocksets(Simulink® Model)

- Registers
(Counter value)
- Output ports
(PWM signals)
- Output ports
(Interrupt signals)



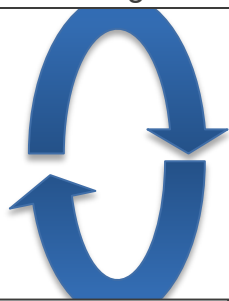
Simulate peripherals behavior and timing accurately

FEATURES : IMPROVING CONTROLLER DESIGN EFFICIENCY

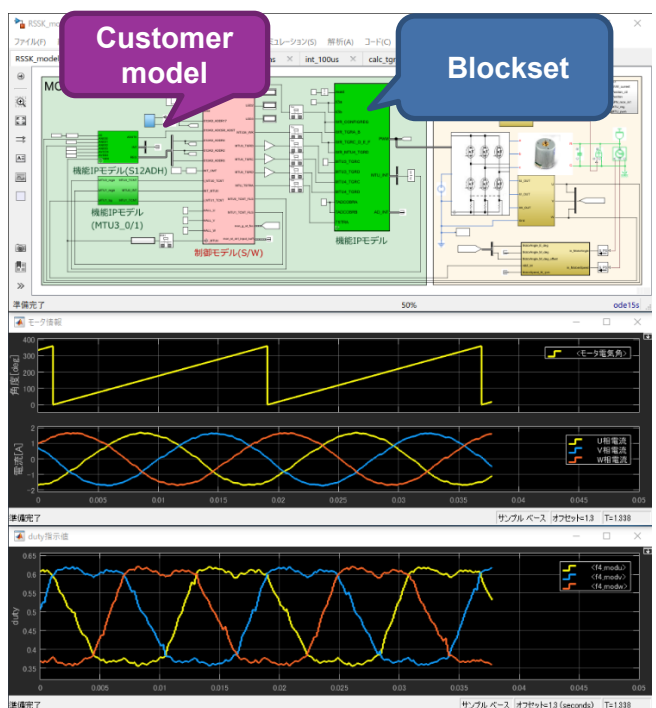
Enables Design Iteration on Model
Using Actual MCU Behavior

MATLAB® and Simulink®

Controller model
design



Simulation w/o
device



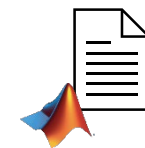
- Build a virtual system quickly by connecting with the user model.
- Examine and confirm the operation assuming an actual MCU behavior on the model.

Generate Code to Drive Peripherals
— Simplify Board Implementation



IDE

Generated code
by Embedded Coder



Blockset
ACG support code



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Initial setting code from
Smart configurator
(Boot & Other settings)



Build & Download



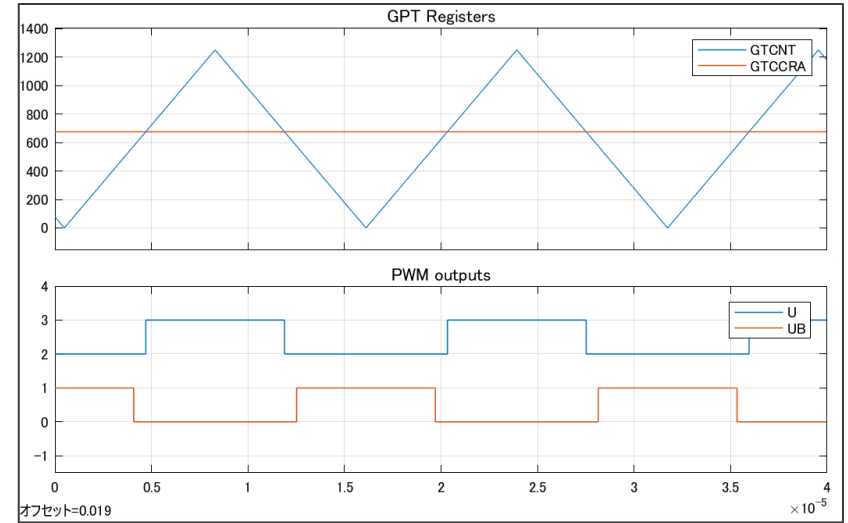
Actual device



- Enables model development including device driver (register I / F)
- By generating code that is easy to implement on the MCU, the man-hours for software implementation can be significantly reduced.

BLOCKSET DELIVERABLES AND USAGE EXAMPLES

- (1) Accurate simulation of control timing and function flow
- (2) Automatic code generation for peripheral operations on actual device

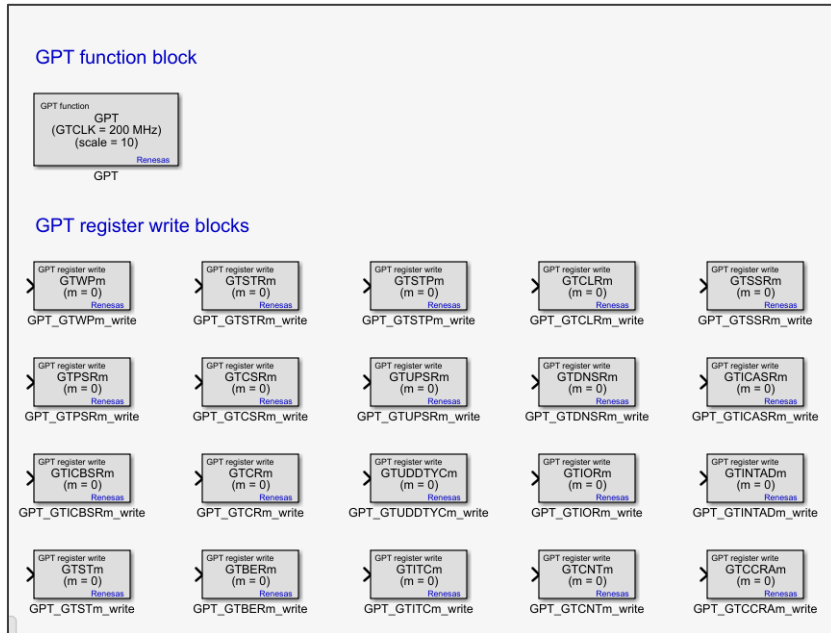


Simulation Results

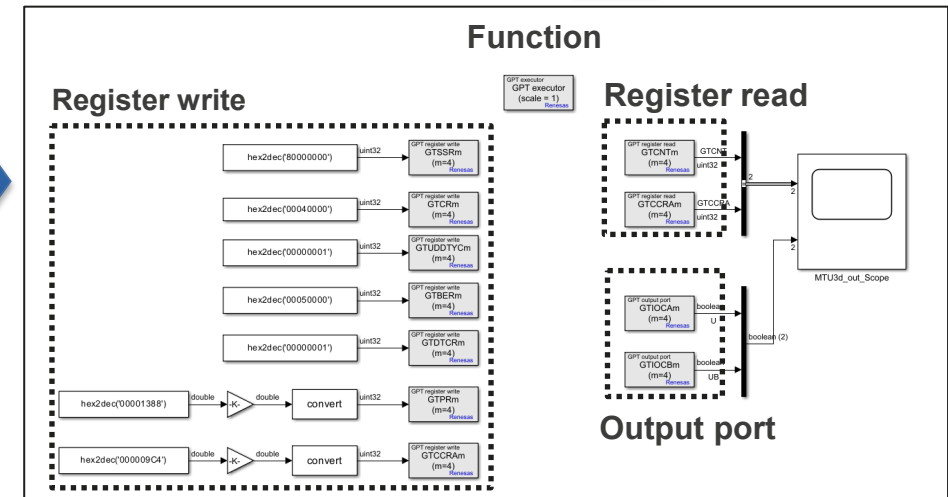
Select a block from the library for operation of peripheral functions.

Insert blocks to the model

- Function block
- Register write block
- Register read block
- Input port block
- Output port block

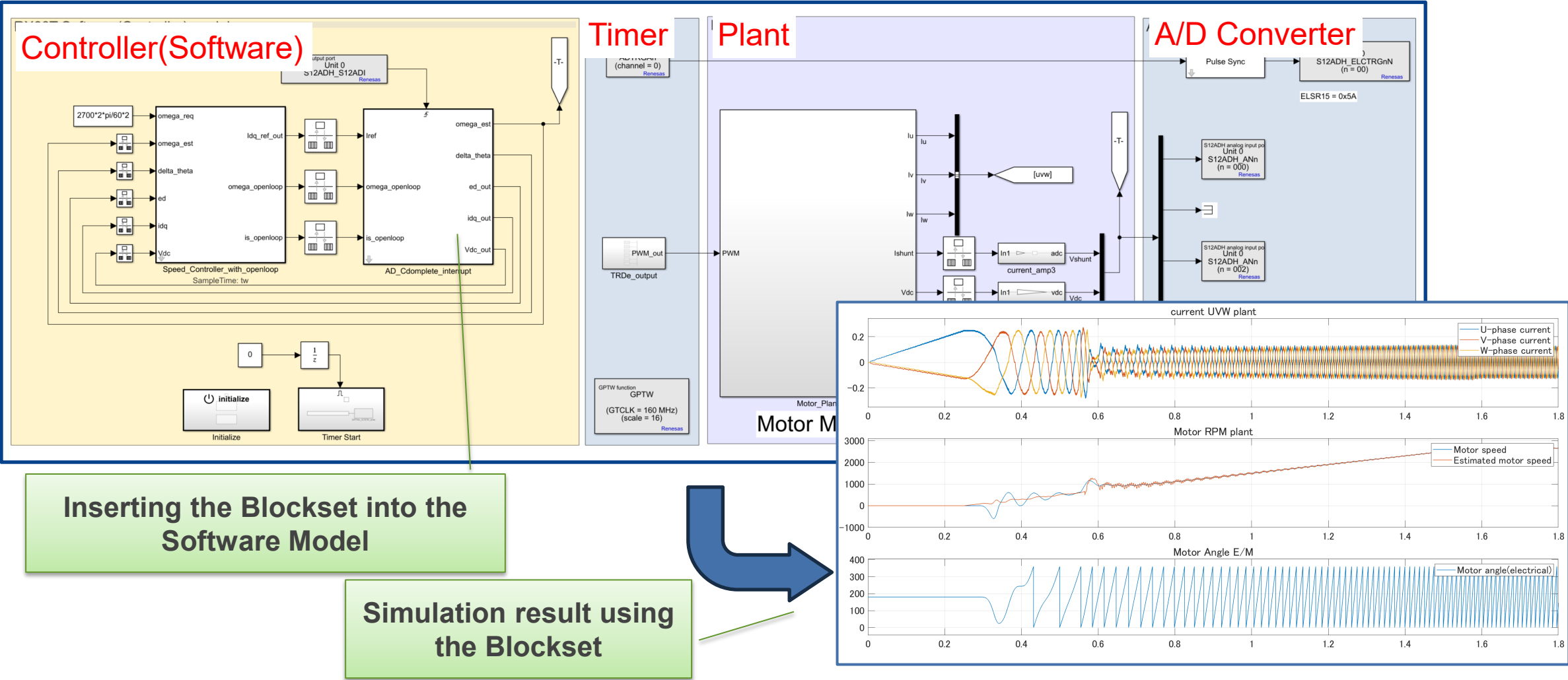


Deliverables: Blockset library



Usage exsample

EXAMPLE OF A MOTOR CONTROL SYSTEM MODEL USING THE BLOCKSET



SUPPORTED DEVICE AND SYSTEM REQUIREMENTS

MCU Family	Device group	Available functions of the Blockset
RL78 family	RL78/F22,F23,F24,F25	PWM timer (TIMER RDe) Accelerator (APPLICATION ACCELERATOR UNIT) A/D converter (12-BIT A/D CONVERTER)

System Requirements

- Windows 11
- MATLAB® / Simulink® R2021b or later
- MATLAB® Coder™ / Simulink® Coder™ / Embedded Coder® (for code generation)

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