Speed Up Digital Control Development for Motors, Power Converters, and Battery Systems with Simulink
Digital Control Design for Power Electronics

Simulink makes it easy to try new ideas, test them, and go to hardware without coding. It includes a deep set of tools and third-party support that let you design and simulate your power electronic controls, test them in real time, and generate code for hardware.

Use system-level models for desktop simulation, real-time simulation, and production code generation. Perform formal model and code verification across the work flow to meet industry standards including AUTOSAR, DO-178C, EN 50128, IEC 61508, IEC 62304 and ISO 26262.
What You Can Do with Simulink

• Try new ideas for power electronic system constructs with thousands of ready-to-use blocks for electrical, mechanical, and thermal systems

• Extend your model with thousands of proven MATLAB functions

• Build custom electrical component models with MATLAB, Simscape language, and C code integration

• Develop and test algorithms for controls, plus signal processing, state logic, and integrated analytics

• Combine discrete, continuous, synchronous, asynchronous behaviors in one model

• Profile and analyze your model by recording signals and single stepping through its execution

• Cosimulate with other electrical simulation environments using S-functions or the FMI standard

• Speed up model testing and parameter tuning using parallel simulations and local and global optimization functions

Learn More

Motor and Power Control Design with Simulink
mathworks.com/motorandpowercontrol

Trial Software
mathworks.com/motor-power-trial

Featured Topics
mathworks.com/discovery.html#mnpc

• Battery management systems • Motor control design

• Battery modeling • Motor modeling and simulation

• BLDC motor control • MPPT algorithms

• Boost converter simulation • Power electronics simulation

• Buck converter simulation • Pulse-width modulation

• Field-oriented control

Customer References
mathworks.com/motorandpowercontrol-references

“MathWorks products considerably reduced application control software development time for the new AC 800PEC controller in comparison with the controller’s predecessor. The code generated from the Simulink models can be used directly in the controller, eliminating the need for a separate, costly implementation phase.”

— Fritz Wittwer, ABB