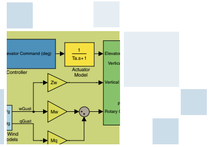
The MATLAB product family

provides a high-level programming language, an interactive technical computing environment, and functions for **algorithm development, data analysis, data visualization, and numeric computation**. MATLAB serves as the foundation for all other MathWorks products. These products enable a wide range of computationally intensive tasks, including filter design, statistics, flight test analysis, and spectral analysis.

MATLAB® & SIMULINK®

The Simulink product family

is an extensible block-diagram environment for simulation and Model-Based Design. Its graphical tools enable engineers to accurately describe, explore, and implement the behavior of **control, signal processing, image processing, communications, and physical systems**. Simulink and related products support key elements of the development process for embedded systems, including requirements capture and specification, design, implementation, and test and verification.



The MathWorks is the leading developer and supplier of software for technical computing and Model-Based Design. MathWorks customers include 1 million engineers, scientists, mathematicians, and researchers. They work at the world's most innovative technology companies, government research labs, and financial institutions and at more than 3,500 universities. The MathWorks was founded in 1984 and is headquartered in Natick, Massachusetts, with offices and representatives worldwide.

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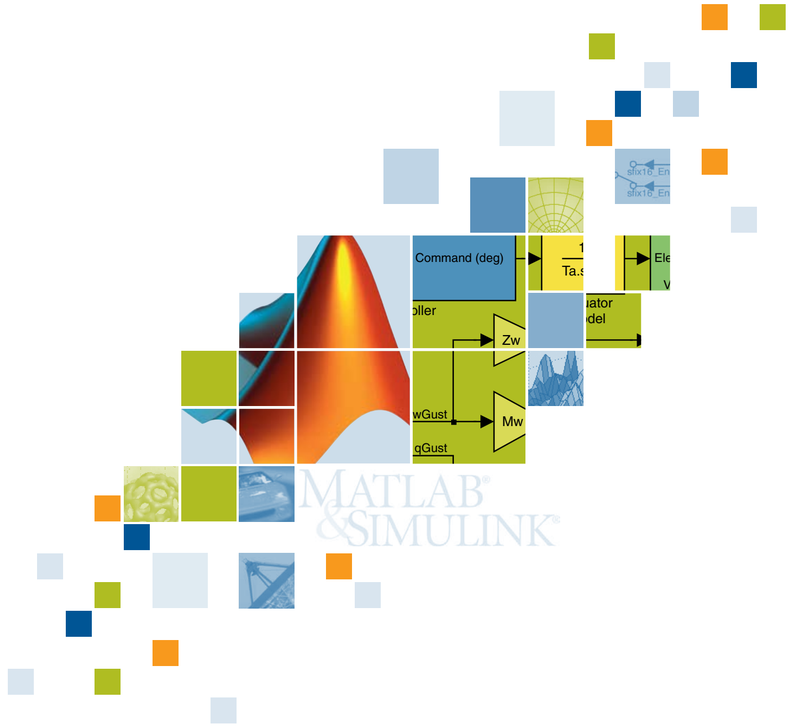
MathWorks Product Overview



Accelerating the pace of engineering and science

The MathWorks™

The MathWorks offers more than 90 products for technical computing and Model-Based Design. Widely used throughout industry, government, and academia, these products are accelerating the pace of discovery, innovation, development, and learning in engineering and science.

xPC Target
Perform real-time rapid prototyping and hardware-in-the-loop simulation using PC hardware

xPC Target Embedded Option
Deploy real-time applications on PC hardware

Real-Time Windows Target
Run Simulink models on a PC in real time

EDA Simulator Link
Cosimulate and verify VHDL and Verilog using HDL simulators

Embedded IDE Link
Build, optimize, and verify code using embedded software development environments

Target Support Package
Deploy generated code onto embedded processors, microcontrollers, and DSPs

EDA Simulator Link
Cosimulate and verify VHDL and Verilog using HDL simulators

Embedded IDE Link
Build, optimize, and verify code using embedded software development environments

Simulink Verification and Validation
Trace requirements, enforce modeling standards, and measure model coverage

Simulink Design Verifier
Generate tests and prove model properties using formal methods

SystemTest
Manage tests and analyze results for system verification and validation

DO Qualification Kit
Qualify Simulink and PolySpace verification tools to DO-178

IEC Certification Kit
Certify embedded systems developed using Simulink and PolySpace products to IEC 61508

PolySpace Client for C/C++
Prove the absence of run-time errors in source code

PolySpace Client for Ada
Detect run-time errors and prove code correctness before compile time

PolySpace Server for C/C++
Perform PolySpace verifications on dedicated servers, computer clusters, or server farms

PolySpace Server for Ada
Detect run-time errors and prove code correctness before compile time

PolySpace Model Link SL
Trace PolySpace results to Simulink models

PolySpace Model Link TL
Trace PolySpace results to dSPACE TargetLink models

PolySpace UML Link RH
Trace PolySpace results to Telelogic Rhapsody models

Simulink Report Generator
Generate documentation for Simulink and Stateflow models

MATLAB & Simulink Student Version

Real-Time Workshop
Generate C code from Simulink models and MATLAB code

Real-Time Workshop Embedded Coder
Generate C and C++ code optimized for embedded systems

Stateflow Coder
Generate C code from Stateflow charts

Simulink HDL Coder
Generate HDL code from Simulink models and MATLAB code

Target Support Package
Deploy generated code onto embedded processors, microcontrollers, and DSPs

IEC Certification Kit
Certify embedded systems developed using Simulink and PolySpace products to IEC 61508

DO Qualification Kit
Qualify Simulink and PolySpace verification tools to DO-178

Simulink Product Family

Code Generation

Rapid Prototyping and HIL Simulation

Link and Target Products

Verification, Validation, and Testing

Physical Modeling

Fixed-Point Modeling

Event-Based Modeling

Simulation Graphics

Math and Optimization

Statistics and Data Analysis

SIMULINK®
SIMULATION AND MODEL-BASED DESIGN

MATLAB®
THE LANGUAGE OF TECHNICAL COMPUTING

Database Connectivity and Reporting

Application Deployment

Simscape
Model and simulate multidomain physical systems

SimMechanics
Model and simulate mechanical systems

SimPowerSystems
Model and simulate electrical power systems

SimDriveline
Model and simulate mechanical driveline systems

SimHydraulics
Model and simulate hydraulic systems

SimElectronics
Model and simulate electronic and electromechanical systems

Simulink Fixed Point
Design and simulate fixed-point systems

Fixed-Point Toolbox
Design and execute fixed-point algorithms and analyze fixed-point data

Stateflow
Design and simulate state machines and control logic

SimEvents
Model and simulate discrete-event systems

Simulink 3D Animation
Animate and visualize Simulink models in three dimensions

Gauges Blockset
Monitor signals with graphical instruments

Optimization Toolbox
Solve standard and large-scale optimization problems

Symbolic Math Toolbox
Perform mathematics using symbolic computation and variable-precision arithmetic

Partial Differential Equation Toolbox
Solve partial differential equations using finite element methods

Genetic Algorithm and Direct Search Toolbox
Solve optimization problems using genetic algorithms, simulated annealing, and direct search

Statistics Toolbox
Perform statistical analysis, modeling, and algorithm development

Neural Network Toolbox
Design and simulate neural networks

Curve Fitting Toolbox
Fit curves and surfaces to data using regression, interpolation, and smoothing

Spline Toolbox
Create and manipulate spline approximation models of data

Model-Based Calibration Toolbox
Calibrate complex powertrain systems

Bioinformatics Toolbox
Read, analyze, and visualize genomic, proteomic, and microarray data

System Identification Toolbox
Create linear and nonlinear dynamic models from measured input-output data

MATLAB Product Family

Parallel Computing Toolbox
Perform parallel computations on multicore computers and computer clusters

MATLAB Distributed Computing Server
Perform MATLAB and Simulink computations on computer clusters and server farms

MATLAB & Simulink Student Version

Database Toolbox
Exchange data with relational databases

MATLAB Report Generator
Generate documentation for MATLAB applications and data

MATLAB Compiler
Build standalone executables and software components from MATLAB code

Spreadsheet Link EX
Use MATLAB from Microsoft Excel

MATLAB Builder EX
Deploy MATLAB code as Microsoft Excel add-ins

MATLAB Builder NE
Deploy MATLAB code as .NET and COM components

MATLAB Builder JA
Deploy MATLAB code as Java classes

Application-Specific Products

Control System Design and Analysis

Signal Processing and Communications

Image and Video Processing

Test and Measurement

Computational Biology

Computational Finance

Control System Toolbox
Design and analyze control systems

System Identification Toolbox
Create linear and nonlinear dynamic models from measured input-output data

Fuzzy Logic Toolbox
Design and simulate fuzzy logic systems

Robust Control Toolbox
Design robust controllers for plants with uncertain parameters and unmodeled dynamics

Model Predictive Control Toolbox
Design and simulate model predictive controllers

Simulink Control Design
Compute PID gains, linearize models, and design control systems

Simulink Design Optimization
Estimate and optimize Simulink model parameters

Aerospace Blockset
Model and simulate aircraft, spacecraft, and propulsion systems

Aerospace Toolbox
Aerospace reference standards, environmental models, and aerodynamic coefficient importing

Image Processing Toolbox
Perform image processing, analysis, and algorithm development

Image Acquisition Toolbox
Acquire images and video from industry-standard hardware

Mapping Toolbox
Analyze and visualize geographic information

Video and Image Processing Blockset
Design and simulate video and image processing systems

Signal Processing Toolbox
Perform signal processing, analysis, and algorithm development

Communications Toolbox
Design and analyze algorithms for the physical layer of communication systems

Filter Design Toolbox
Design and analyze fixed-point, adaptive, and multirate filters

Filter Design HDL Coder
Generate HDL code for fixed-point filters

Wavelet Toolbox
Analyze and synthesize signals and images using wavelet techniques

Fixed-Point Toolbox
Design and execute fixed-point algorithms and analyze fixed-point data

RF Toolbox
Design, model, and analyze networks of RF components

EDA Simulator Link
Cosimulate and verify VHDL and Verilog using HDL simulators

Embedded IDE Link
Build, optimize, and verify code using embedded software development environments

Signal Processing Blockset
Design and simulate signal processing systems and devices

Communications Blockset
Design and simulate the physical layer of communication systems and components

RF Blockset
Design and simulate the behavior of RF systems and components in a wireless system

Video and Image Processing Blockset
Design and simulate video and image processing systems

Financial Toolbox
Analyze financial data and develop financial algorithms

Financial Derivatives Toolbox
Model and analyze equity and fixed-income derivatives

Econometrics Toolbox
Model and analyze financial and economic systems using statistical methods

Datafeed Toolbox
Acquire financial data from data service providers

Fixed-Income Toolbox
Model and analyze fixed-income securities

Bioinformatics Toolbox
Read, analyze, and visualize genomic, proteomic, and microarray data

SimBiology
Model, simulate, and analyze biological systems

Data Acquisition Toolbox
Acquire and send out data from plug-in data acquisition boards

Instrument Control Toolbox
Control and communicate with test and measurement instruments

Image Acquisition Toolbox
Acquire images and video from industry-standard hardware

OPC Toolbox
Read, write, and log data from OPC servers

SystemTest
Manage tests and analyze results for system verification and validation

Vehicle Network Toolbox
Communicate with in-vehicle networks using CAN protocol