

xPC Target Turnkey

xPC Target Turnkey is a complete, fully assembled, real-time testing solution that combines xPC Target with a high-performance real-time target machine and I/O modules. Target machines and I/O modules meet a wide range of I/O connectivity, form factor, and environmental requirements. Your real-time target machine will be assembled based on your needs, and it will be ready to use when you receive it.

xPC Target Turnkey is optimized for Simulink and xPC Target. A real-time target machine consists of a target computer and I/O modules that provide connectivity to the hardware under test, plus the necessary drivers, cables, terminal boards, and software tools.

REAL-TIME TARGET MACHINES



- High performance
- For office, lab or field use
- Multiple form factors
- Supported bus types:
PMC, PCI, PCIe, cPCI, PC104
- For industry and academia

I/O MODULES



- Analog and digital I/O
- Pulse generation/capture
- Communication buses
- Serial protocols
- Shared/reflective memory
- Configurable FPGA

The real-time target machines for xPC Target Turnkey are supplied by Speedgoat GmbH. Speedgoat specializes in specifying, customizing, and assembling real-time testing solutions based on xPC Target for customers worldwide. Contact your MathWorks sales representative to set up an engineering assessment for your real-time testing project or application.

Real-Time Target Machines

Real-time target machines are optimized to work with Simulink and xPC Target and meet a wide range of performance, space, environmental, I/O expansion, and bus-type requirements.

All real-time target machines are available with a variety of options (such as CPU, RAM, HD, and I/O expansion slots), and you can customize them for specific connectors, form factors, and power supplies. You can also order machines with racks, mounting options, external panels, external signal conditioning hardware, and other components. Additional features may be available on request. Contact your MathWorks sales representative.

Online Resources

- Learn more about real-time target machines and I/O modules at mathworks.com/xpctarget-turnkey.
- Contact your MathWorks sales representative at mathworks.com/contact.

xPC Target Turnkey Systems



Performance real-time target machine

Highest real-time performance and I/O expansion flexibility in a cost-effective package. Optimized for use on a desk, in a lab, or in a rackmount installation.



Mobile real-time target machine

Small and rugged, ideal for use in limited space and for mobile applications. Optimized for harsh conditions and extended temperature environments.



Modular real-time target machine (in three form factors, small to large)

Lightweight and ideally suited for HIL simulators and large-scale projects requiring high I/O channel count and long life spans. Optimized for rackmount installation.



Automation real-time target machine

Optimized for around-the-clock operation and machine-cabinet installation. Can be used as your final control unit.



Basic real-time target machine

Entry-level real-time target machine, with high real-time performance and room for up to five I/O modules.



Classic real-time target machine

Support for PC104 form factor I/O modules. Small and robust design, ideal when space is limited and for mobile applications. Optimized for harsh environments.



Education real-time target machine

Ready-to-use testing and simulation platform with built-in analog and digital I/O. Ideal for teaching design concepts in mechatronics, motion control, power electronics, and signal processing.

I/O Modules

With xPC Target Turnkey you select the I/O modules that are suitable for your project or application, and they are integrated into your real-time target machine. These I/O modules provide seamless connectivity between your Simulink models and your hardware under test.

With the exception of the Classic real-time target machine, all I/O modules come in the PMC form factor and can be used in all listed real-time target machines using a PCI, PCIe, or cPCI carrier card. The Classic real-time target machine supports I/O modules in the PC/104 form factor only.

Delivery includes the I/O module, a prewired terminal board, a cable, a carrier card for your selected target machine, and an extensive set of drivers and test models for Simulink and xPC Target.

Supported I/O Connectivity Options

I/O Type	Functionality
Analog	High-resolution, high-speed, simultaneous sampling
Digital	TTL, 12V, 24V, high-drive, opto-coupled
Serial	RS232, RS422, RS485, SDLC, HDLC
Protocols	CAN, Ethernet, UDP, J1939, ARINC 429, MIL-STD-1553, SPI, I2C, SSI
Audio/Speech	Audio/speech-optimized analog I/O modules, XLR panels
Shared Memory	Reflective memory for high-speed data transfer in multiprocessor systems
Various	LVDT, RVDT, Synchro, Resolver
Configurable FPGA	<ul style="list-style-type: none">• Pulse train (PWM, capture, quadrature decoding, hall effect)• Event-based interrupts• Analog I/O with lowest latency and/or special synchronization schemes• Algorithmic implementations for very fast inner control loops

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