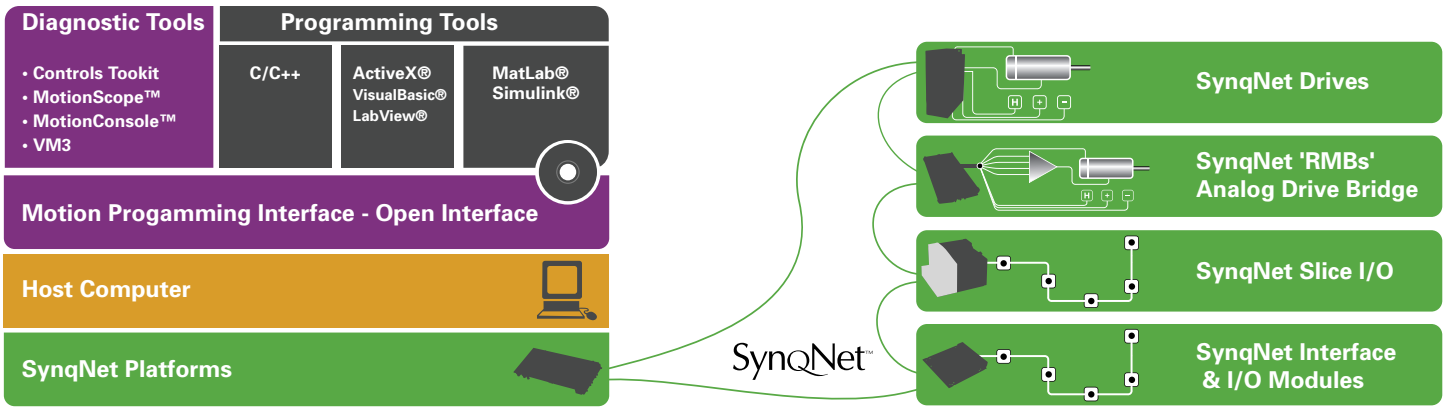
Performance Networked Motion Control for OEMs.

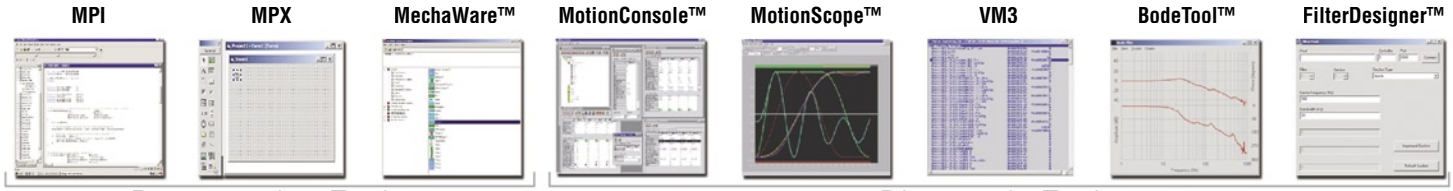
SynqNet™
Platforms

Motion Engineering

MEI SynqNet™ Product Overview Snapshot



Open Motion Software



ANSI Standard C/C++ Programming	Ease-of-Use ActiveX® Programming	MatLab®Simulink Advanced Controls	Comprehsensive Motion GUI	Real-Time Data Analysis/Graphing	Debugging Utility/ Memory Location Tool	Bode/Nyquist Plots Mechanical Analysis	Develop/Simulate Custom Filters

The **MPI** is an object-oriented C/C++ programming interface that helps you build motion code the same way you build your machine. Individual software objects can be created to reflect the hardware components and functionality.
MPX: Develop your own custom motion interface using LabView®, VisualBasic®, Excel®, and other environments that support ActiveX extensions.
MechaWare: Use MatLab® & Simulink® with the MEI MechaWare library that allows you to quickly model any system and implement immediately with any SynqNet controller. MechaWare features include: a wide variety of Filters, State Observers, State Feedback, Coordinate Transformations, 64-bit (double precision) calculations with ZMP, complex gearing, following methods, gain switching, vibration control, sophisticated MIMO plant models, easily defined gantry control topology, and allows you to design your own custom control schemes.
MotionConsole: Exercise motors, tune & configure all axes in your system. **MotionScope** allows full graphing and analysis of real-time motion data. Position, velocity, and numerous other critical motion parameters are displayed with the click of the mouse. Run all utilities locally or over a TCP/IP connection for remote diagostics. **Controls Toolkit:** Analyze machine mechanical response, develop notch filters, and custom algorithms to tune and optimize machine performance. Controls Toolkit includes the **BodeTool** and **FilterDesigner**.

Host Computer

MEI's application programming interface (MPI) is designed for multi-threaded environments and supports Windows® 2000/NT/XP, and real time operating systems including: VxWorks®, VenturCom RTX®, LynxOS, PharLap ETS, and QNX®. In addition, a Linux version of the MPI is also available for RedHat operating systems. MPI applications can be readily developed in Integrated Development Environments such as Microsoft Visual Studio or Borland C++ Builder. Other compilers can be used depending on the operating system, such as a Linux general GNU compiler.

All other motion utilities and software tools are designed to run on Windows® 2000/NT/XP. All utilities are TCP/IP enabled allowing for a remote host to run applications if the motion control host is running LINUX, VxWorks, or other real-time OS.

MEI SynqNet platforms are PC-based with the exception of the eXMP-SynqNet stand-alone controller that is a combination computer and SynqNet controller in one convenient package.

SynqNet Platforms

SynqNet motion control networks provide a 100Mbps synchronous real-time connection between motion controllers and torque drives, stepper drives, I/O modules, and custom devices. SynqNet is the only high-speed digital motion control network that offers fault tolerance, real-time node data collection, firmware downloads, wide servo vendor support, true plug-and-play, and requires no network programming. SynqNet is simple to use and can be easily integrated into drives, I/O, and custom OEM nodes. SynqNet is supported by leading US and Japanese drives vendors. MEI works closely with these vendors to provide a range of 'pre-integrated' control/drive solutions that are cost effective and simple to integrate.

www.SynqNet.org

ZMP-SynqNet-PMC

- Motion control powered by a real-time 64-bit floating point (double precision) Motorola PowerPC CPU 133 MHz Memory
- Supports up to 32 tightly coordinated axes/nodes
- Servo update rates to 48kHz

XMP-SynqNet-PCI

- Motion control powered by a real-time 32-bit floating point Analog Devices SHARC DSP
- Supports up to 32 tightly coordinated axes/nodes
- Servo update rates to 16kHz
- Optonal CANOpen Interface
- PCI Interface

XMP-SynqNet-PMC

- Motion control powered by a real-time 32-bit floating point Analog Devices SHARC DSP
- Supports up to 32 tightly coordinated axes/nodes
- Servo update rates to 16kHz
- PMC Interface

XMP-SynqNet-cPCI

- Motion control powered by a real-time 32-bit floating point Analog Devices SHARC DSP
- Supports up to 32 tightly coordinated axes/nodes
- Servo update rates to 16kHz
- Optonal CANOpen Interface
- cPCI Interface

eXMP-SynqNet

- Integrated PC & XMP-SynqNet controller-32-bit floating point Analog Devices SHARC DSP
- Celeron 366MHz
- Dual processor architecture
- Supports up to 32 tightly coordinated axes/nodes
- 10/100 Ethernet connection
- Optonal CANOpen Interface

SynqNet Drives-Multi-Vendor,Plug & Play

There are over 50 SynqNet drives and nodes available from top US and Japanese servo suppliers. Visit www.SynqNet.org for details.

YASKAWA · KOLLMORGEN · ADVANCED MOTION CONTROLS · TRUST AUTOMATION · Yamagawa · GLENTEK · Panasonic · SANYO DENKI

SynqNet RMBs – Analog Drive Bridge, I/O

For rapid prototyping, the Remote Motion Block (RMB) provides an open gateway to connect analog drives to a SynqNet network. Examples include 1-4 axis modules, pulse step/direction support, and compact I/O modules. RMBs are available from MEI, Trust Automation, and Soonhan Engineering.

SynqNet SLICE I/O (Available Q2 2004)

SynqNet SLICE I/O is a full range of digital and analog I/O products that are modular, simple to wire, easy to add or change SLICE type, and mounts on standard 35mm DIN rail. CANOpen SLICE I/O is also available.

SynqNet Interface & I/O

SynqNet I/O is a customizable I/O solution comprised of a SynqNet Interface Device, Digital I/O Boards, and Analog I/O Boards. The interface is also part of the SynqNet Developer Kits, so SynqNet functionality can be embedded in a wide variety of custom nodes for a range of applications and functions.

SynqNet Developer Kits

SynqNet technology can be easily integrated into a slave device using the SynqNet developers Kit. Support is provided for servo and stepper drives, I/O and feedback devices, in single and multiple axis configurations.

Custom Engineering Services

MEI offers world-class engineering support and customization for all our products, including customized: Firmware, Software, FPGA Code, and Hardware. MEI works closely with other major suppliers to provide integrated motion solutions. From vision systems to custom drives and motors, MEI has a proven track record in bringing together a wide array of components.

Motion Engineering Centers

MEI Motion Centers are focused on helping you build a better machine, faster. There is a Motion Center near you from California, Chicago, Boston, Philadelphia, to the UK, Germany, Japan, S.Korea, Singapore, and SE Asia. All Centers are staffed by professional engineers to assist in motion system design, analysis, and integration.

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Helping you build a better machine, faster.