Multi-axis motion control software and hardware package, offering extensive programming capabilities for a variety of automation and robotics applications.

**Modular real-time Linux-based software**
- Servotronix multi-axis control algorithms embedded in a qualified off-the-shelf industrial PC
- Accepts user and general purpose software applications under Linux

**Scalable programming options for enhanced user flexibility**
- Powerful, open, real-time programming language enables preemptive multitasking at user program level
- C/C++ user written module integration

**Extensive motion and robotics functionalities**
- Up to 64 interpolated axes
- Additional axes supported upon special request
- Single axis and synchronized axes motion
- Supports standard robot types such as DELTA, PUMA, SCARA, as well as other non-standard robotic kinematics such as traverse, scissors etc.

**ControlStudio™ program development environment**
ControlStudio™ is a free Windows-based integrated development environment used for editing and debugging of the MC-BASIC program.
A variety of machine and motion features are available, such as: task handling, text files editing, record graphs display, watch window, online tracking, etc.

**Key benefits**
- Open, modular, and modern machine control environment
- Ethernet machine interface
- Support for EtherCAT® and CANopen® motion buses
- Controls up to 64 interpolated axes
- Extensive capabilities for both standard and non-standard robotic kinematics
- Software core has been implemented in motion and robotic applications for over 15 years
- Customized software solution can be embedded into the customer’s hardware

**Complete support and integration for successful implementation**
An experienced and dedicated team of software, hardware and control engineers comprise the pillar of Servotronix success. From integration services to technical support and application development, customers receive a complete product and service package.

**Seamlessly integrated with Servotronix drive-motor systems**
Current range: 1.5 A rms - 30 A rms
Rated output: 50 W – 7.5 kW / 0.16 – 48 Nm
Motion
- Single-axis motion (move, jog)
- Group interpolation (move, circle)
- Blended motions
- Master-slave (camming, gearing)
- Profiles (sine acceleration, trapezoidal, customized)
- Simulated motions (off-line program validation)
- Advanced stop and proceed mechanisms
- User selectable units (meters, inches, mm/s and rpm)
- On-the-fly motion control (immediate, velocity-override)
- 3D compensation table for correcting mechanical inaccuracies
- Conveyor tracking (pick-and-place from linear and rotary conveyers)
- Robotic kinematics for standard and non-standard types
- Advanced spatial interpolation for all kinematics
- Dynamic model (identification, online inverse dynamic)
- Real-time robot impact detection
- Multiple robots controlled by single controller
- Multi robot synchronization

System
- Real-time Linux operating system
- Preemptive multitasking at user program level
- Integration with C/C++ user modules
- Position-based event generation using programmable limit switches, with microsecond resolution
- softMC-Basic language: Global and local libraries, user data structure, file system, error handling
- Integrated development environment: programming, software program management, diagnostic

Hardware
- CPU: 1.86 GHz Intel® Atom™ N2800 dual-core processor
- RAM: 1 GB 1066 MHz DDR3
- Storage: CompactFlash® card slot
- Ethernet: RJ45 port for host communications
- EtherCAT®: RJ45 port for real-time motion control

Interfaces
Machine: Ethernet, serial
Fieldbus: EtherCAT®, CANopen®.

Application examples
For over 15 years, softMC software algorithms have been successfully implemented in a variety of industrial applications, including robotics, machine tools, medical systems, and general automation.

Solar panel manufacturing:
Delta robots with an inverse dynamic model

And more:
- Wafer inspection: Double picker 8-lane for 100% inline wafer inspection and handling
- Machines and equipment for display industry applications: laser processing, metrology and screen printing
- Machines for the manufacture of lithium-ion batteries
- Testing and measuring systems, including optical systems for vision inspection

Tabletop milling machine:
5-axis CNC milling machine with special interpolation of non-Cartesian axes

Rehabilitation equipment:
4-axis robot with dedicated algorithms and custom hardware

Ordering information
softMC EtherCAT® - MC-EXXX-002-00
softMC CANopen® - MC-CXXX-002-00

*XXX- number of axes as defined by the customer