

# softMC 301 Compact Motion controller

The softMC 301 is an extremely compact multi-axis motion controller that supports 1 to 6 interpolated axes in coordinated motion.



## Scalable programming options for enhanced user exibility

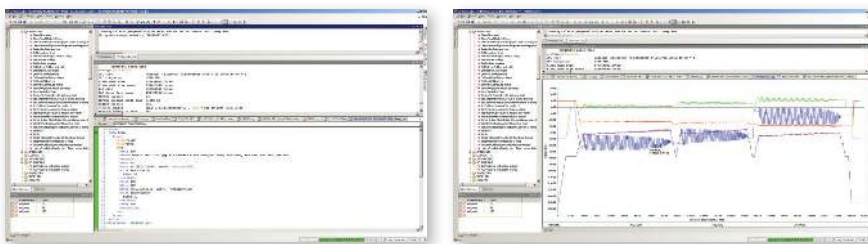
- Powerful, open, real-time programming language enables preemptive multitasking at user program level
- C/C++ user written module integration
- Supports ROS

## Extensive motion and robotics functionalities

- Up to 6 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, by Servotronics Motion Control, 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.



## Designed for the perfect system

- Create the motion system you need, using Servotronics HMI, drives and motors for high-performance and high-power servo systems.
- Add stepIM integrated stepper motors or servIM integrated servo motors for cost-effective performance in low voltage applications.

## Key benefits

- Open, modular, and modern machine control environment
- Ethernet machine interface
- EtherCAT® and CANopen® motion bus
- Controls 1 to 6 interpolated axes
- Extensive capabilities for both standard and non-standard robotic kinematics
- Software core has been implemented in motion and robotic applications for over 30 years
- Customized software solution can be embedded into the hardware

## Related products



softMI  
Human Machine  
Interface



CDHD2 servo  
drives with RDHD2  
servo motors



stepIM / servIM  
Integrated  
Motors

## 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
- 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

## Interfaces

- Machine: Serial, Ethernet TCP/IP, Modbus TCP, OPC UA®
- Fieldbus: EtherCAT® or CANopen®

## Ordering Information

		MC - E	08 - 704	- 0000
	softMC Motion Controller			
	Fieldbus			
E xx 301	EtherCAT – softMC 301 hardware			
C xx 301	CANopen – softMC 301 hardware			
E xx 703	EtherCAT – softMC 703 hardware			
C xx 704	CANopen – softMC 704 hardware			
	Number of Axes			
04, 06	4, 6 axes – softMC 301			
08, 16, 32, 64	8, 16, 32, 64 axes – softMC 7xx			
	Hardware Variants			
301	softMC 301 – ARM, for 4 to 6 axes			
703	softMC 703 – Atom, for 8 to 32 axes			
704	softMC 704 – Atom, for 8 to 32 axes			
	Option			
0EIP	Add-on EtherNet/IP gateway for softMC 301			

## 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, diagnostics

## Hardware

- CPU: ARM iMX6 processor
- RAM: 512 MB 800 MHz DDR3
- Storage: 1GB Micro SD
- Ethernet: RJ45 connector
- EtherCAT or CANopen: RJ45 connector
- Customization capabilities

## Customization capabilities

- softMC software embedded in other industrial PC platforms
- Customized software solution designed per customer's hardware

