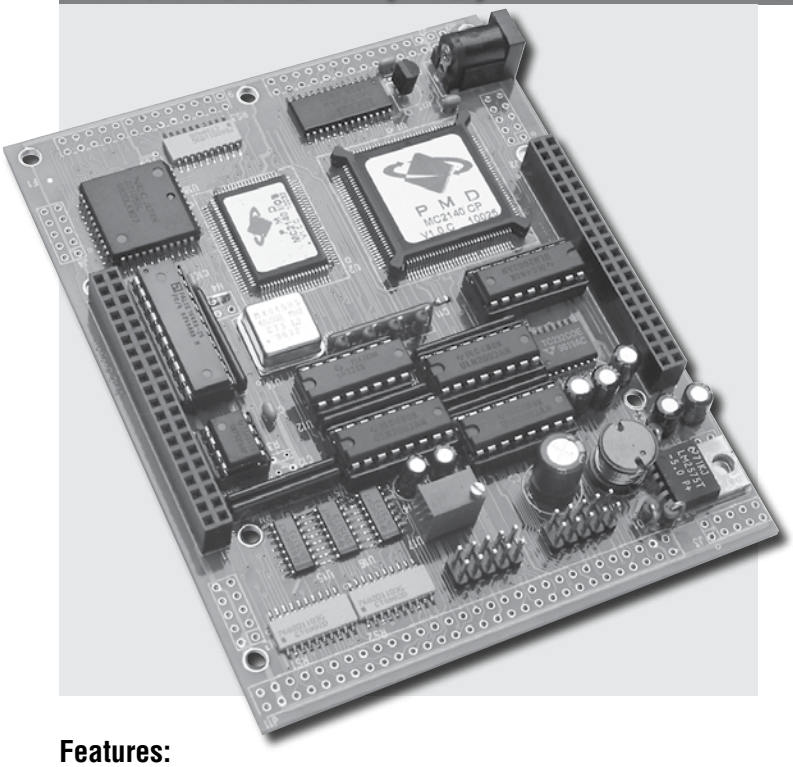
MotionC™ (MC)

C/C++ Programmable standalone DSP motion controller



Features:

- 4.65 x 3.75", 200 mA at 12V
- Driven by 586-Engine™, i386-Engine™, or A-Engine86™, R-Engine™, E-Engine
- MC2140: 4-axis closed-loop servo control
- MC2540: 4-axis open-loop stepper control with Quad. Decoders
- 7 solenoid drivers, 24+ TTL I/Os, 2 RS232 and 1 RS485
- Protected switches for home, limit, capture, and fault
- 32-bit registers for position, velocity, acceleration, and jerk
- S-curve, trapezoidal, or contoured velocity profile modes
- Electronic gearing, 1/T counter for stable low velocity
- PID or PI control, programmable loop rate to 100 µs

The ***MotionC™*** (***MC***) is a low-cost, high-performance, standalone, C/C++ programmable industrial controller. It includes a DSP chipset (**MC2140 or 2540**, PMD) and it is driven by a host **586-Engine, AE, AE86, IE, RE, FN, RA, RD or EE.**

The MC+Engine system is a complete, C/C++ programmable, ready to run, motion controller with built in sophisticated field proven control firmware. User only needs to define parameters for PID algorithm and trajectory profile. The DSP calculates velocity, position and stabilizes the motor output. At the same time, the host controller interfaces with a PC, monitors I/Os, and computes or pre-loads a new set of parameters.

The host Engine interfaces to the DSP chipset via high-speed data bus. User can easily program in C/C++, download, and debug application programs via serial link to a PC. The host writes pre-defined motion commands to the DSP. All commands are double buffered. User can preload a new set of parameters and enable the new operation anytime while the DSP is running the old command. The DSP can interrupt the host at any time.

The ***MC*** provides protected inputs for home switches, limit switches, and fault switches. Up to 30 V DC signals can be applied to these switches. Seven solenoid drivers are capable of sinking up to 350 mA at 50 V. A PPI (82C55) provides 24 user-programmable bi-directional I/O lines. Two RS-232 and one RS-485 drivers can be installed.

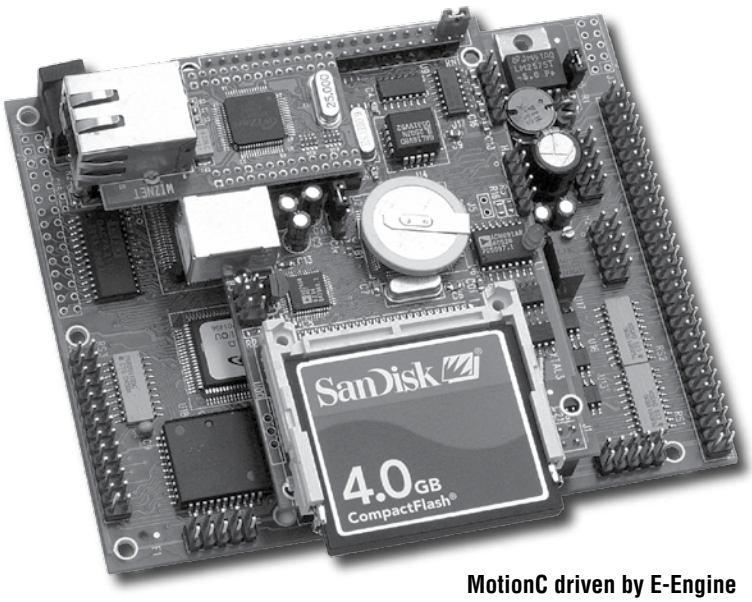
MC2140 supports 4-axis closed-loop digital servo controls. It uses incremental quadrature encoders for position input. It outputs ±8V servo control signals. Each axis contains sophisticated trajectory profile and digital servo capabilities. It provides electronic gearing, PID/PI control, a choice of S-curve, trapezoidal, or contoured velocity profile modes, automatic motor error shutdown, and monitoring of switches**.** The ***MC2120*** is a 2-axis servo version.

MC2540 is for 4-axis open-loop stepping motor control. It supports sophisticated trajectory generation and synchronization features, allowing the creation of complex motion sequences. It provides up to 3 MHz pulse and direction signals for driving step motor systems. Each axis has a Quadrature Decoder, which can be read by the host. The ***MC2520*** is a 2-axis stepper version.

Ordering Information

MC2120 or MC2520	**$349**	**Qty 1**
MC2140 or MC2540	**$549**	**Qty 1**

Includes 4/2-axis control DSP chipset, solenoid drivers, 24 I/Os, 2 RS-232, DAC. Host Engine is NOT included.



MotionC driven by E-Engine

TERN INC.
1724 Picasso Avenue, Davis, CA 95618 USA
Tel: 530-758-0180 • Fax: 530-758-0181
sales@tern.com http://www.tern.com