

## MCCL – Motion Control Command Language

- Intuitive, easy-to-use commands
- Store & execute multiple programs on-board
- Solve any application, from basic to the most complex
- Ideal for prototyping and embedded control applications

PMC's motion control cards can execute more than 175 MCCL commands, allowing you to perform a wide variety of tasks with a simple on-board command language. Setting a motor's maximum speed, moving a motor to a specific position, or even reporting the current position are just some of the operations that can be performed using the MCCL commands.

Each MCCL command can easily be identified by a two-letter mnemonic. The letters are easy to remember because they relate to the function the command performs. The format for all commands is the same as the example below:



This command causes axis 1 to Move Absolute to position 10.5. By placing commas (,) between multiple commands, they can all be issued at the same time to initiate synchronized multi-axis motion.

The MCCL language includes commands for conditional execution branching and

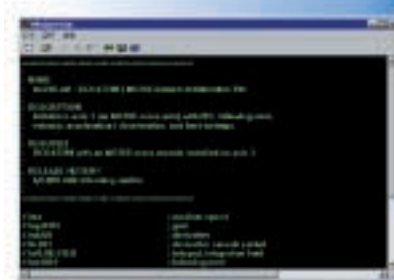
looping. Using these commands, complex control operations can be implemented in user-written “macro” routines. Multiple commands can be linked, permanently stored in the card’s memory as a macro command, and used at any time. Macro commands can be written to perform any motion, from a simple homing routine, to controlling an entire machine without the intervention of a host computer.

As with the Windows version of the MCAPI, the MCCL commands can be sent to the card via three different interfaces:

- PC bus (ISA or PCI using the terminal emulator software utilities)
- RS-232/422 serial port
- IEEE-488 interface

With a terminal emulator utility running on the host PC, typing on the keyboard transfers one character at a time to the motion control card. Any response from the card will be displayed on the host computer screen. Motion control commands can also be placed in an ASCII text file and downloaded to the card.

## Easy-to-Use Motion Command Language for Fast Prototyping & Embedded Control



Win Control Motion Command Terminal Emulator

### Partial Listing of MCCL Command Set

#### Setup Commands

PP Profile Parabolic  
 PS Profile S curve  
 SA Set Acceleration  
 SD Set Derivative Gain  
 SE Stop on Follow Error  
 SG Set Prop. Gain  
 SH Step Half/Micro  
 SI Set Int. Gain  
 SQ Set Torque  
 SS Set Slave ratio  
 SV Set Velocity  
 US User Scale  
 VA Vector Acceleration  
 VD Vector Deceleration  
 VG Velocity Gain  
 VO Velocity Override  
 VV Vector Velocity

#### Motion Commands

CM Contour Mode  
 CP Contour Path  
 CR Arc Center Relative  
 FE Find Edge  
 FI Find Index  
 GH Go Home  
 GO Start in Velocity Mode  
 MA Move Absolute  
 MF Motor Off  
 MN Motor On  
 MR Move Relative  
 PM Position Mode  
 QM Torque Mode  
 SM Set Master  
 SN Synchronization On  
 ST Stop  
 VM Velocity Mode

#### Reporting Commands

AT Tell Pos. Aux. Encoder  
 TF Tell Following Error  
 TO Tell Optimal Position  
 TP Tell current Position  
 TS Tell Servo Status  
 TT Tell Target Position  
 TX Tell Cont. Count  
 TZ Tell Index Position

#### Macro Commands

ET Escape Task  
 GT Generate Task  
 MC Macro Call  
 MD Define as Macro  
 MJ Macro Jump  
 RM Reset (clear) Macros  
 TM Tell Macro

A representative sample of the more than 175 MCCL commands.