

## 6000 Series Software

**Motion Architect™, CompuCAM, Servo Tuner, Motion Toolbox™, Motion Builder™, Motion OCX Toolkit and DDE6000 Server.**

The 6000 Series controllers have many standard and optional software packages available to help you develop your application, debug your programs, and decrease your design time.

Motion Architect™ is designed for use with all 6000 Series products. It comes standard with each 6000 Series product and makes the implementation of the controllers remarkably easy.

## Motion Architect™

### Features

#### System Configurator and Code Generator

Automatically generate 6000 controller code containing basic setup system setup parameters (I/O definitions, encoder operations, drive setup etc.) based on dialog box entries

#### Program Editor

Create blocks or lines of 6000 programming code, or copy portions of code from another file. Save editor files for later use in a high-level program such as Visual Basic™ or C++.



#### Terminal Emulator

Download and upload 6000 programs to and from the controller. Download the soft operating system. Go on-line and determine controller status.

#### Test Panel

Create your own test panel to exercise your programs and check I/O, motion, system status and timers.

#### Context Sensitive Help

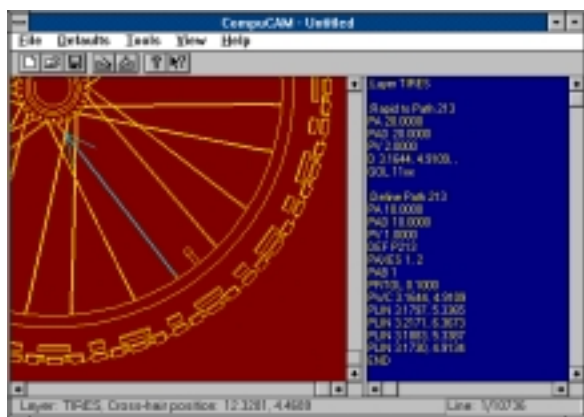
Access help on 6000 programming commands or how to use a menu option.

#### On-Line User Guides

- 6000 Series Software Reference Guide
- 6000 Series Programmers Guide

## CompuCAM

CompuCAM is a CAD-to-motion software package that converts .DXF, HP-GL or G-Code geometry files to 6000 programming code. From CompuCAM you can run your CAD program, import your geometry, generate and arrange your 6000 code and save it for download to your 6000 Series controller.



### CompuCAM Features

- Types of positioning
  - 2-axis circular interpolation
  - Point-to-point, multi-axis linear interpolation
- Supports end of path operation (turning on and off I/O, moving a third axis)
- .DXF Filter supports
  - Lines and arcs, circles and polygons, polylines (ellipses, bezier curves, splines)
- HP-GL Filter Supports
  - Absolute/Relative arcs
  - Circles
  - Pen up/Pen down
  - Input P1/P2
  - Scale
- G-Code
  - F & G Codes
  - H, I, J, L, M Codes
  - N, O, P, X, Y, Z Codes
  - Customizable H&M codes

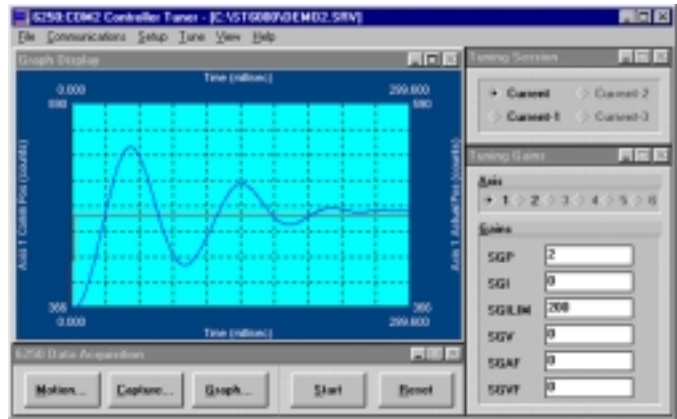
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## Servo Tuner™

Servo Tuner is a graphical tuning software utility to reduce the time required to set up PID gains in a 6000 Series servo controller (AT6250/AT6450). Servo Tuner allows you to optimize your servo performance by adjusting overshoot, settling time, rise time and steady state error.

### Features

- Tune analog velocity or digital position loops
- Calculate gain settings automatically based on inertia and motor drive constants
- Tune for step response, trapezoidal move or S-Curve move profiles
- Capture and display up to nine motion parameters
- Automatically stores the last four tuning sessions for iterative tuning.



## Motion OCX Toolkit

Motion OCX Toolkit is a powerful stand-alone software package that allows the programmer to easily and effectively develop control interfaces for the 6000 Series controllers. Motion OCX Toolkit provides a quick and easy way to incorporate advanced functionality into their applications.

**Motion OCX Toolkit includes the following three controls:**

### Communications Shell

Use Comm6000 to control basic communication with the 6000 product, including interrupt handling and sending/receiving files

### Terminal OCX

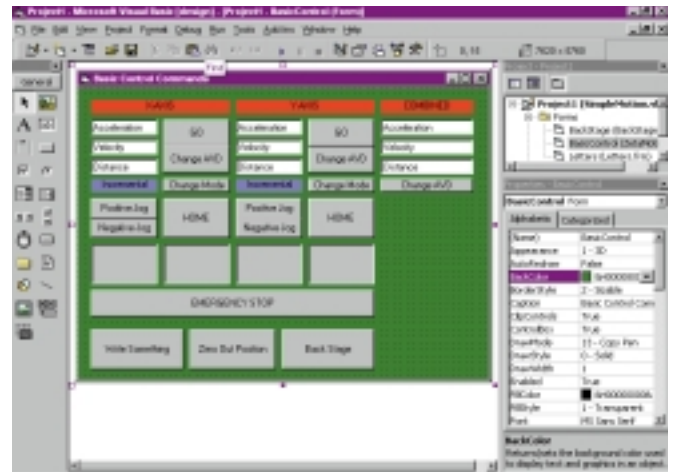
Use Term6000 to interface to the 6000 Series controller on line. Check status, execute commands immediately and view error messages.

### Fast Status Polling OCX

Poll6000 is used to poll the 6000 Series controller fast status register and display quickly updated information such as motor position and system status.

Motion OCX Toolkit provides 32-bit OLE Custom Control extensions designed to run under Windows™ 95, 98 or NT and the following applications:

- Visual Basic™ 4.0 or later
- Delphi 2.0 or later
- Visual C++
- Any other 32-bit development environment containing OCX controls

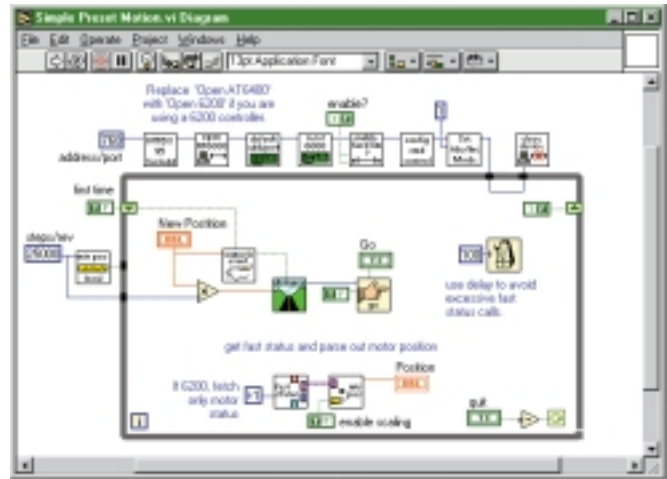


## Motion Toolbox™

Motion Toolbox is an extensive software library of LabVIEW® Virtual Instruments (VIs) for graphical icon-based programming of the 6000 Series controllers.

When using Motion Toolbox with LabVIEW®, applications are developed by linking VIs together to form a block diagram. The Motion Toolbox libraries include VIs to do the following:

- Download setup and control programs
- Set motion parameters (Go, Stop, velocity, accel, position)
- Input/output setup and configuration
- Home and end-of-travel limit configuration
- Controller configuration (axes, jogging, encoder etc...)
- Fast status querying of I/O, limit, home, position and status
- Debugging capabilities include "snooping" where developers can view commands sent to the controller.



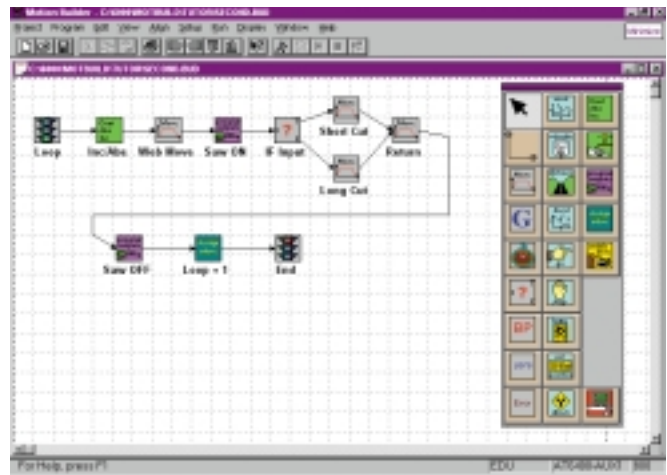
## Motion Builder™

Motion Builder simplifies motion control programming by providing a software tool that decreases the learning curve of motion control programming. Motion Builder™ allows users to design and program their motion control application in a way they are already familiar with, flow charts.

Motion Builder™ allows expert and novice users alike to program the 6000 Series controllers without learning a new programming language or difficult software. Visual icons are simply dragged and dropped. Motion Builder™ allows complete programming, downloading, compiling and debugging from one tool. You can even view the generated 6000 code if you wish.

### Features

- |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Graphical motion development environment</li> <li>• Visual programming</li> <li>• Dialog box entries for simplified programming</li> <li>• Real-time display environment</li> <li>• Debug environment</li> </ul> | <p>Icons included:</p> <ul style="list-style-type: none"> <li>• Move profile</li> <li>• PID Settings</li> <li>• Homing</li> <li>• Wait conditions</li> <li>• Subroutine branching</li> <li>• If/Then statements</li> <li>• Variable assignment and math</li> <li>• Position set</li> <li>• Stop motion</li> <li>• Drive enable</li> <li>• Jogging</li> <li>• User defined function blocks</li> </ul> |
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Controllers

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## DDE6000 (Dynamic Data Exchange Server)

DDE6000 is a software driver that enables communications between Microsoft Windows applications that support the DDE protocol and the 6000 Series controllers.

The DDE6000 supports NetDDE, allowing any computer on any Windows™ NT Server, which supports NetDDE, to control any 6000 Series controller connected to a networked computer.

DDE6000 not only supports all 6000 Series controllers but it also supports multiple 6000 Series controllers simultaneously.

DDE is a Microsoft® protocol that automatically updates data to and from Windows™ applications. The DDE servers send the 6000 Series fast status information to a DDE equipped windows application that requests it. Information provided via DDE6000 is:

- Status Report
- Motor/Encoder Position
- Motor Velocity
- Axis Status
- System Status
- Interrupt Status
- User Status
- Timer
- Variables
- Following Status
- Phase Shift
- Inputs/Outputs
- End-of-travel Limits
- Home limits
- Analog inputs

The following are some applications that support the DDE protocol.

Intellution (FIX DMAPS)  
National Instruments (LabVIEW)  
Wonderware Software Development Corp. (InTouch)  
United States Data Corporation (Factory Link IV)