



## Far East Noble Sdn Bhd (371923-T)

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## Stepper Motor Control Card

### Introduction

These series are stand-alone or host controlled, easy-to-use, plug-and-play and cost effective stepper motor control solutions for motion control applications.

These cards can also be operated using an analog joystick or a trackball with quadrature outputs. The speed of the motor is proportional to the tilt angle of the joystick or the rotational speed of the trackball. The joystick has three speed selection keys; fast, medium and slow speed.



### The card may be controlled in different ways:

#### 1. Stand-alone

The controller is programmed in a high level BASIC-like programming language. The user composes, downloads and tests the motion profile in the supplied Integrated Development Environment (IDE).

#### 2. Host Controlled

In this mode, the host sends a series of ASCII commands to the controller via the RS-232 serial port. The controller processes the incoming commands and responds with proper messages.

#### 3. Control Panel

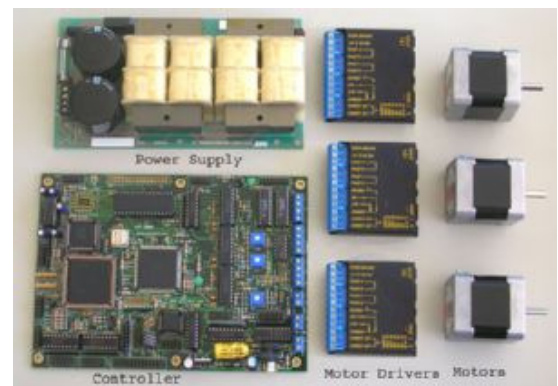
The intuitive Control Panel allows the user to set-up the system quickly. The operator is able to move the mechanism to different positions by pressing the corresponding buttons of the Control Panel or using the joystick / trackball. This motion profile may be recorded using the "Teach Mode" capability of the software. This profile may be uploaded to the controller to repeat the same exact motion.

#### 4. Using the Analog Port

An analog signal should be applied to the controller to move the corresponding motor. An analog joystick, a DC voltage source, or a potentiometer may be used.

#### 5. Using the Two-Phase Quadrature Input

A two-phase quadrature input should be applied to the controller to move the corresponding motor. A trackball with quadrature output may be used. The controller may be slaved or synchronized to another device, using the two-phase quadrature input.



### Features

- Compact
- Multi-Axis
- Stand-alone
- Plug-and-Play
- Built-in Self Test
- RS-232 Interface
- Flash Memory Based for Easy Field Upgrading of the Controller Code
- BASIC Like Programming Language
- Powerful Instruction Set, Over 100 Instructions



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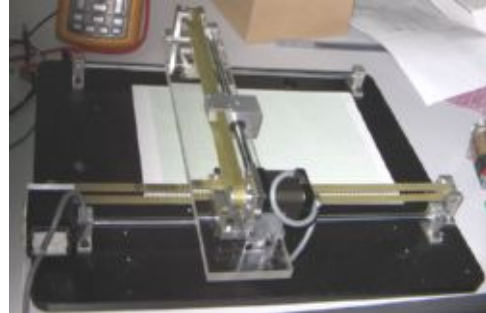
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- Handheld Terminal or PC Connection
- Zero Adjustment of Joystick on Power-up
- Proportional Speed Control, Speed Proportional to the Tilt Angle of Joystick
- Three Speed Ranges, Fast, Medium, and Slow Mode.
- Eight Sets of Selectable Speed Ranges.
- Optional Quadrature Encoder Feedback
- Optional Daisy Chained Display Cards

**Applications**

- Animation
- Automated Assembly Systems
- CNC Machines
- Engraving
- Flight Simulation
- Inspection Systems
- Laser Marking
- Linear and Rotary Stages
- Machine Tools
- Medical Devices
- Motion Control Camera Boom Systems
- Optical Comparators and CMMs
- Pan-Tilt Gimbals
- PCB Assembly or Inspection
- Pick and Place
- Positioning Tables
- Robotics
- Scanner
- Security Cameras
- Telescope Drive Mechanism
- Time-lapse Photography
- Winders



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<b>Technical Specifications</b>		
1	Modes of Motion	<ul style="list-style-type: none"><li>• Point-to-Point Positioning</li><li>• Jogging</li><li>• Contouring</li><li>• Electronic Gearing</li><li>• Electronic Cam</li></ul>
2	Supported No. Of Axes	<ul style="list-style-type: none"><li>• Up to 4 Axes</li></ul>
3	Range of Motion Parameters	<ul style="list-style-type: none"><li>• Position: +/- 2147483648 Steps</li><li>• Velocity: 200 - 200 KHz Step Rate</li><li>• Acceleration: 40,000 - 40 Million Steps / sec<sup>2</sup></li></ul>
4	Communication Interface	<ul style="list-style-type: none"><li>• RS-232 Interface</li></ul>
5	Software	<ul style="list-style-type: none"><li>• Easy System Setup and Evaluation</li><li>• Menu Driven, No Programming Required</li></ul>
6	Mechanical	<ul style="list-style-type: none"><li>• Size: 5.40 " (137 mm) X 7.50 " (191 mm)</li></ul>
7	Power Requirement	<ul style="list-style-type: none"><li>• +5 VDC Or +7.5 to +40 VDC</li><li>• 2 Watts Power Consumption</li></ul>
8	Dedicated Inputs	<ul style="list-style-type: none"><li>• Positive and Negative Limit Switches per Axis</li><li>• Home Switch per Axis</li><li>• Analog Joystick Input per Axis</li><li>• Joystick Fast, Medium, and Slow Speed</li><li>• Selection Keys</li><li>• Two 2-Phase Quadrature Signals or Trackball</li><li>• Trackball Fast, Slow and Z-Select Speed</li><li>• Selection Keys</li><li>• RUN, STOP, END, and UPLOAD-and-RUN for Stand-alone Operation</li></ul>
9	Dedicated Outputs	<ul style="list-style-type: none"><li>• Pulse, Direction, and Driver Enable Outputs per Axis</li><li>• Fault LED Output</li></ul>
10	General Purpose Digital Input / Output	<ul style="list-style-type: none"><li>• 16 CMOS Inputs</li><li>• 16 CMOS Outputs</li></ul>
11	General Purpose Analog Input	<ul style="list-style-type: none"><li>• Optional 3 Inputs</li><li>• Range: 0 - +5 VDC</li><li>• Resolution: 8-bit</li></ul>
12	Memory	<ul style="list-style-type: none"><li>• Up to 448 KB of non-Volatile Flash ROM</li><li>• 22 General Purpose Variables, 32 bit Resolution</li><li>• 7500 Bytes of Program Memory</li></ul>