

Embedded Standalone Laser Control System

with Cutting & Engraving Control Software

Overview

The Embedded Laser Control System is a standalone processing control system possessing both motion control and laser control functions. It is suitable for many industrial application related with laser processing, such as metal cutting, organic glass cutting, wood cutting, clothing & leather, printing and plate making, wafer cutting, printed circuit board, etc.

The system consists a newly developed all-in-one embedded motion-laser

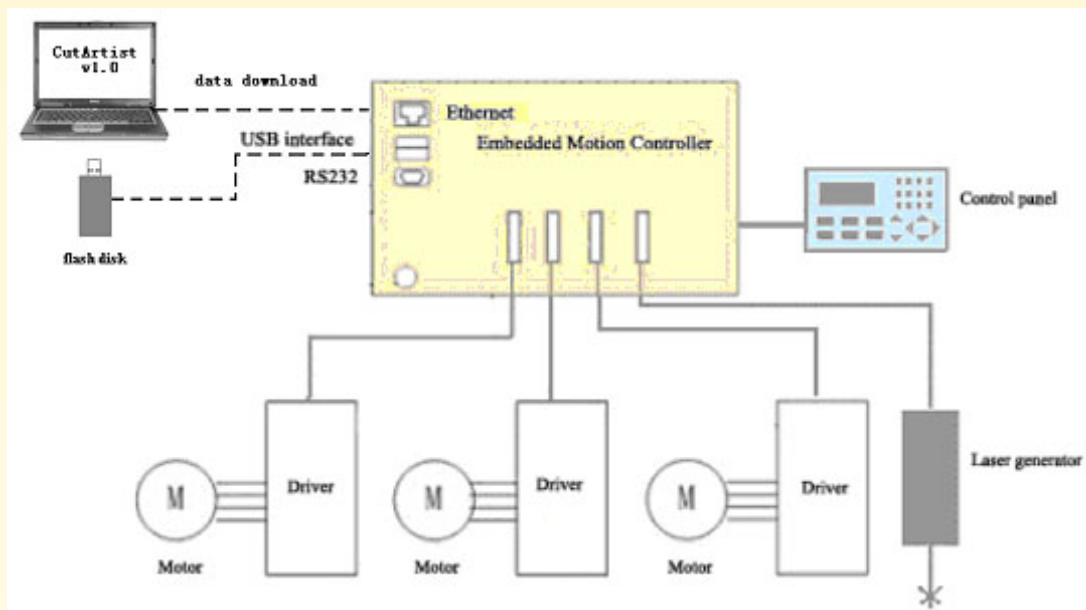


controller; a user-friendly operation panel and cutting & engraving control software as well. The all-in-one motion controller is well designed by integration of embedded PC104 main board, a GE-300-SG-Laser motion control board and interconnection board in one structure, thus it has the advantages of smaller volume, less wiring, higher reliability, easy to upgrade and maintain, thus the reliability of the equipment operating under adverse industrial environments, such as humid, dusty, and shacking, etc, is greatly enhanced. The plentiful system software is provided together with rich mathematical library for further development. The advanced high-speed-processing algorithm and trajectory-optimization algorithm can achieve smooth trajectory motion. Both PWM output and analog output are supported by the system.

Main Features

- Dual-core control system.
- Reliable high performance motion and laser control.
- In standalone mode, able to receive vector documents or bitmap documents directly.
- 128M (standard) or larger (optional) DOM.
- Multiple external interfaces, Ethernet, serial port and USB.
- Data can be downloaded via the network by FTP or TCP/IP.
- Distributed control of multiple laser cutting machines via network interface.
- Complete processing graphs, tasks dispatch and status checks with a single PC terminal.
- Each system can receive tasks, complete processing then send feedback messages.
- Open-ended system design, easy for further development.
- Full documentation of protocol and low-level control code.

System Block Diagram



System software

- DOS operation system

For Further Development

- An operable BORLANDC 4.5 PC with serial port.
- Standard C Language.
- Standard PS2 interface for control panel.

Power requirement

- External power, +24V, $I_{cc} \geq 1A$

System Package

GOOGOL Technology supplies following parts of the control systems:

- Embedded motion controller
- Simplified control panel and cables
- Embedded Control software
- Master PC software.

The Following be prepared by Customer:

- PC (used for Master PC software running and data download)
- Flash Disk
- Ethernet cable (Data download cable)



Ordering Information

Model No.	Description	Qty
<i>Standard Package</i>		
GU-300-ESG-Laser-P01/128-E	GU-300-ESG-Laser-P01/128-E embedded motion controller	1
ACC6-PN4-PS2	Operation panel with cable (DB25P cable)	1
<i>Optional Accessories</i>		
CutArtist1.0	Cutting & Engraving control software (in PC). <i>Can compile and decode vector documents to the specified files and download to the standalone controller.</i>	1
CutArtist_DSP1.0	Cutting & Engraving control software (in controller) <i>Receive files sent by PC.</i>	1