



LASER SCANNER MOTION CONTROLLER

Model: GT-400 –SCAN

Overview

GT-400-SCAN scanner motion controller is the new generation of the laser and scan head controller developed by Googol Technology. Based on the structure of higher frequency DSP processor and FPGA, the controller can control scanner, motors and laser synchronously and efficiently. Its hardware system uses PCI bus. It can provide up to 4-axis pulse output. Moreover, the motion of each axis is mutually independent. With larger memory, higher control performance, and more precise control command set, the controller is widely used in the industrial fields such as sophisticated processing, semiconductor incision, high speed forming and laser drilling, etc.



Technical Specifications:

➤ *Motion Control:*

- 4 Pulse/direction or CW/CCW independent output for Step motor or servo motor control
- Able to realize cylinder and large breadth flat mark
- 1 MHz maximum step output rate for each axis
- Programmable LIMIT and ALARM protection
- Hardware capture signal : INDEX signal of each axis, HOME switch and Probe
- T curve velocity profile

➤ *Scanner Control:*

- Voltage output for scanner control, which consists of 2 axes of linear interpolation and 2 axes of circular interpolation and three-dimensional dynamic focus function (optional).
- 10 us scanner control cycle
- Motion buffer can contain up to 10000 motion commands, providing a high real time control capacity
- Pause, stop and resume for the buffer motion
- 2 Modes of the mark on the fly: mark on the fly with or without encoder feedback.
- 3 Modes for the raster images scanning which can scan black-and-white image and grayscale image
- Field correction algorithm in board
- Have jump-laser-on function

➤ *Laser Control:*

- Able to control CO₂ and YAG laser sources to give flexible FPK and STANDBY signals
- Supply one channel of high speed IO to control laser On/Off
- Supply laser On/Off delay, unit: 1us or 1/8us. Negative delay time allowed.



- 3 laser power control methods: PWM, analog and programmable frequency output.
- Be able to control laser power on/off directly

➤ **Input and output:**

- 16 dedicated opto-isolated inputs; home switch, positive and negative limit switch, amplifier fault signal for each axis
- 8 dedicated opto-isolated outputs: amplifier enable and amplifier reset signal for each axis
- 8 channels pulse output: pulse and dir or CW and CCW for each axis.
- 3 channels voltage outputs: 2 for scanner control, and 1 for laser power control. 16 bits D/A resolution and voltage scale: -10v~10v。
- 1 channel laser on/off signal output and 1 channel PWM output
- 4 channels encoder interface for position feedback, the max frequency of the input pulse is 8MHz.
- 16 general purpose opto-isolated inputs and 16 general-purpose opto-isolated outputs.

➤ **Interfaces:**

- PCI bus
- PC104 bus

➤ **System software:**

- Device driver under WINDOWS98/2000/XP/NT and DLL.
- A demonstration program

Ordering Information:

Model No.		Description	Qty
Standard package	GT-400-SCAN-PCI	GT-400-SCAN-PCI scan control card	1
	GT1-400-ACC2-X ₁	Terminal board	1
	ACC3-T1-068030	3 m long 68-pin SCSI-type cable	1
	Others	A CD containing manual and function testing, driving routines.	1
Options	ACC3-T1-068005	0.5 m long 68-pin SCSI-type cable	
	ACC3-T1-068015	1.5 m long 68-pin SCSI-type cable	

Application samples:



Rapid Prototyping



Laser Drilling



Laser Engraving and cutting



Laser Joining



Laser marking