

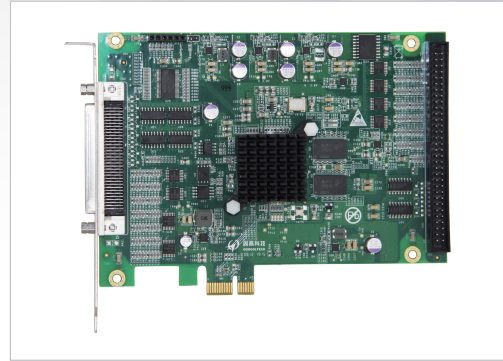
# GTS-PCle Series Multiple Axes Motion Controller



## Overview

GTS-PCle series are PCIe multiple axes general purpose motion controllers for stepping motor and servomotor control. It implements motion planning via DSP and FPGA outputs pulse or analog commands. It can be used in compact IPCs with PCI-e slots.

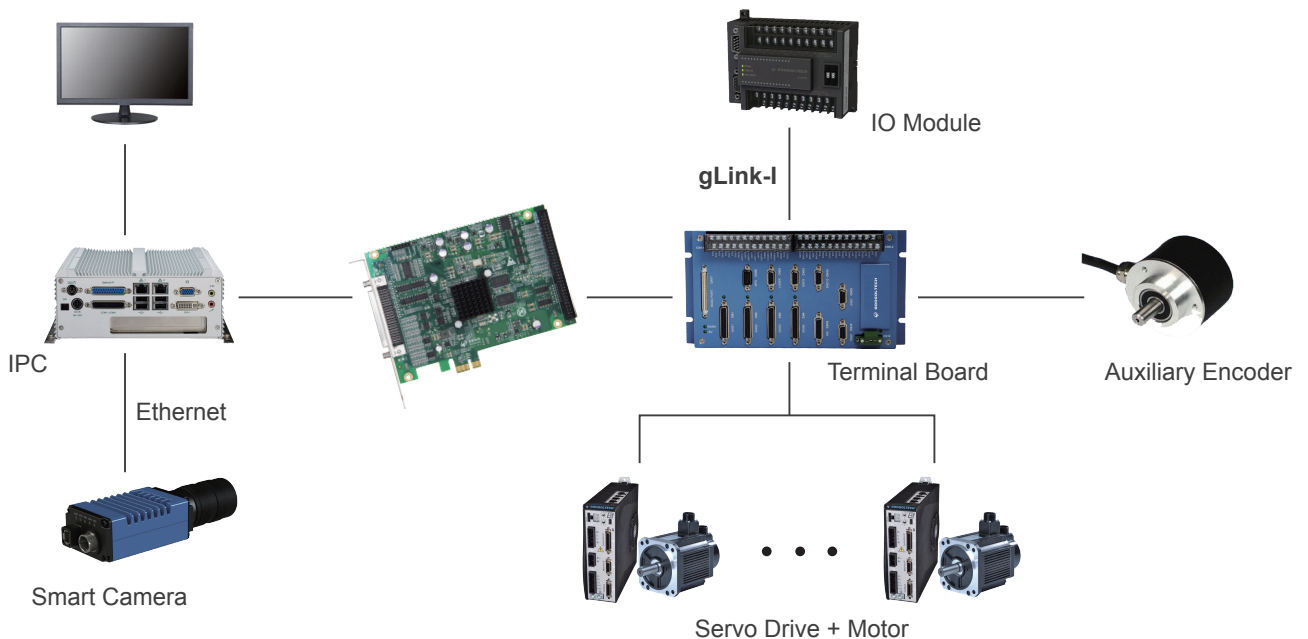
It supports point-to-point, continuous path, multi-axis synchronization, linear/arc/helix/3D linear interpolation motion modes. Users can freely set parameters of acceleration, deceleration, S-shaped curve smoothness to assist them designing the optimal motion planning for mechanical structures. Users can program the controller and construct automatic control systems via the library files of VC, VB, C#, Labview development environment. It is widely used in automatic equipment (detector, assembly machine, dispenser, insertion machine), high-end CNC machine, robot, semiconductor, textile, packaging, assembly line workstation, laser processing, etc.



## Main Features

- 4/8 axes motion control
- DSP high speed motion planning
- Pulse count is precisely latched by FPGA; multi-axis synchronous control
- Supports Trap, Jog, Gear, Follow, PT, PVT
- Supports arbitrary 2 axes linear, arc interpolation; arbitrary 3-4 axes linear interpolation; 3D spiral interpolation
- Possesses look ahead preprocessing algorithm; reverse gap compensation; pitch error compensation
- 2-channel differential position comparison output signal
- 2-channel independent laser control function
- Laser energy following speed and distance
- Supports gantry function
- Supports 5-axis interpolation, suitable for 5-axis CNC

## System Structure



# GTS-PCIe Series

## Multiple Axes Motion Controller



### Specifications

Motion Control	
No. of Controlled Axis	4/8 axes
Control Method	Pulse, analog
Filtering Algorithm	PID + speed look ahead + acceleration look ahead
Control Cycle	250us (pulse) / 125us (analog)
Pulse Output	1MHz
Analog Output	8-channel axis control interface (-10V~+10V) 4-channel non-axis interface (0-10V)
Encoder	ABZ 3-phase differential signal; sampling frequency 8MHz
Hardware Resource	
Motion Control Interface	+/- limit, origin signal, driver alarm, driver reset, in position signal (optocouple isolation), MPG interface, laser control
Hardware Capture	Home, Index, probe, position comparison capture
Auxiliary Encoder	2 channels
General-Purpose IO	16-channel input, 16-channel output (optocouple isolation)
Analog Input	-10V~+10V, 12/16 bit
Fieldbus	gLink extension remote I/O
Other	
Power Supply	24V DC $\pm$ 10%, I <sub>cc</sub> = 3A Min
Operating Temperature	0-55°C
Dimension	168 x 126 mm

### Ordering Guide

Type	Ordering Number	Description
Standard Package	GTS-400-PG-PCIe-00	4-axis pulse standard and laser control
	GTS-400-PV-PCIe-00	4-axis pulse + analog standard and laser control
	GTS-800-PG-PCIe-00	8-axis pulse standard and laser control
	GTS-800-PV-PCIe-00	8-axis pulse + analog standard and laser control
	GTS-400-GT-PCIe-00	4-axis pulse standard and laser control, gantry, 5-axis interpolation and other advanced functions
	GTS-400-VT-PCIe-00	4-axis pulse + analog standard and laser control, gantry, 5-axis interpolation and other advanced functions
	GTS-800-GT-PCIe-00	8-axis pulse standard and laser control, gantry, 5-axis interpolation and other advanced functions
	GTS-800-VT-PCIe-00	8-axis pulse + analog standard and laser control, gantry, 5-axis interpolation and other advanced functions

# GTS-PCIe Series Multiple Axes Motion Controller



## Accessories

Type	Ordering Number	Description
Terminal Board	GT2-400-ACC2-VB-G	4-axis pulse terminal board
	GT2-400-ACC2-VB-V	4-axis pulse + analog terminal board
	GT2-800-ACC2-VB-G	8-axis pulse terminal board
	GT2-800-ACC2-VB-V	8-axis pulse + analog terminal board
	GT2-400-ACC2-VB-G-A	4-axis pulse terminal board, 8AI/4AO (non-axis interface)
	GT2-400-ACC2-VB-V-A	4-axis pulse + analog terminal board, 8AI/4AO (non-axis interface)
	GT2-800-ACC2-VB-G-A	8-axis pulse terminal board, 8AI/4AO (non-axis interface)
	GT2-800-ACC2-VB-V-A	8-axis pulse + analog terminal board, 8AI/4AO (non-axis interface)
68-pin Cable	CN17-ACC3-T1-068005/10/15/30/50	Suitable for 4-axis controller and CN17 channel of 8-axis one, 0.5m / 1.0m / 1.5m / 3.0m / 5.0m
	CN18-ACC3-T1-068005/10/15/30/50	Suitable for CN18 channel of 8-axis controller, 0.5m / 1.0m / 1.5m / 3.0m / 5.0m

## Optional Accessories

Type	Ordering Number	Description
Extension IO Module	HCB2-1616-DTD01	16DI / 16DO, input low level effective, NPN output
	HCB2-1616-DTS01	16DI / 16DO, input level selectable (high / low), PNP output
	HCB2-0606-A1201	6AI / 6AO, 12-digit accuracy
Extension IO Connecting Cable	DB9F F/M L=0.3m	Extension IO connecting cable, 0.3m
	DB9F F/M L=1.5m	Extension IO connecting cable, 1.5m
Driver Connecting Cable	ACC5-D01005 / 10 / 15 / 20	Panasonic series driver connecting cable, 0.5m / 1.0m / 1.5m / 2.0m
	ACC5-D01005 / 10 / 15 / 20 (brake)	Panasonic series driver connecting cable (brake), 0.5m / 1.0m / 1.5m / 2.0m
	ACC5-SP1015	Sanyo series driver connecting cable, 1.5m
	ACC5-D03015 / 30	Yaskawa series driver connecting cable, 1.5m / 3.0m
	ACC5 / D03015 / 30 (brake)	Yaskawa series driver connecting cable (brake), 1.5m / 3.0m
	HPCN36P/M+DB25P/M	GTHD series driver connecting cable, 1.5m

# GTS-PCIe Series Multiple Axes Motion Controller



## Industrial Applications



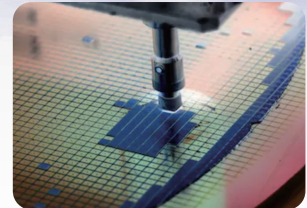
**Gantry Automation**



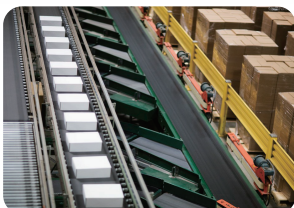
**CNC Application**



**Robotic Application**



**Semiconductor Application**



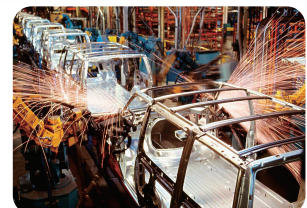
**Test & Measurement  
Equipment**



**Textile Machine**



**Laser Processing**



**Factory Automation**



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