

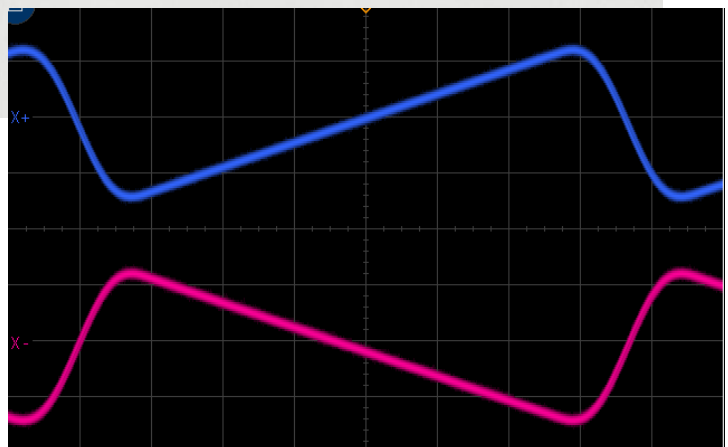
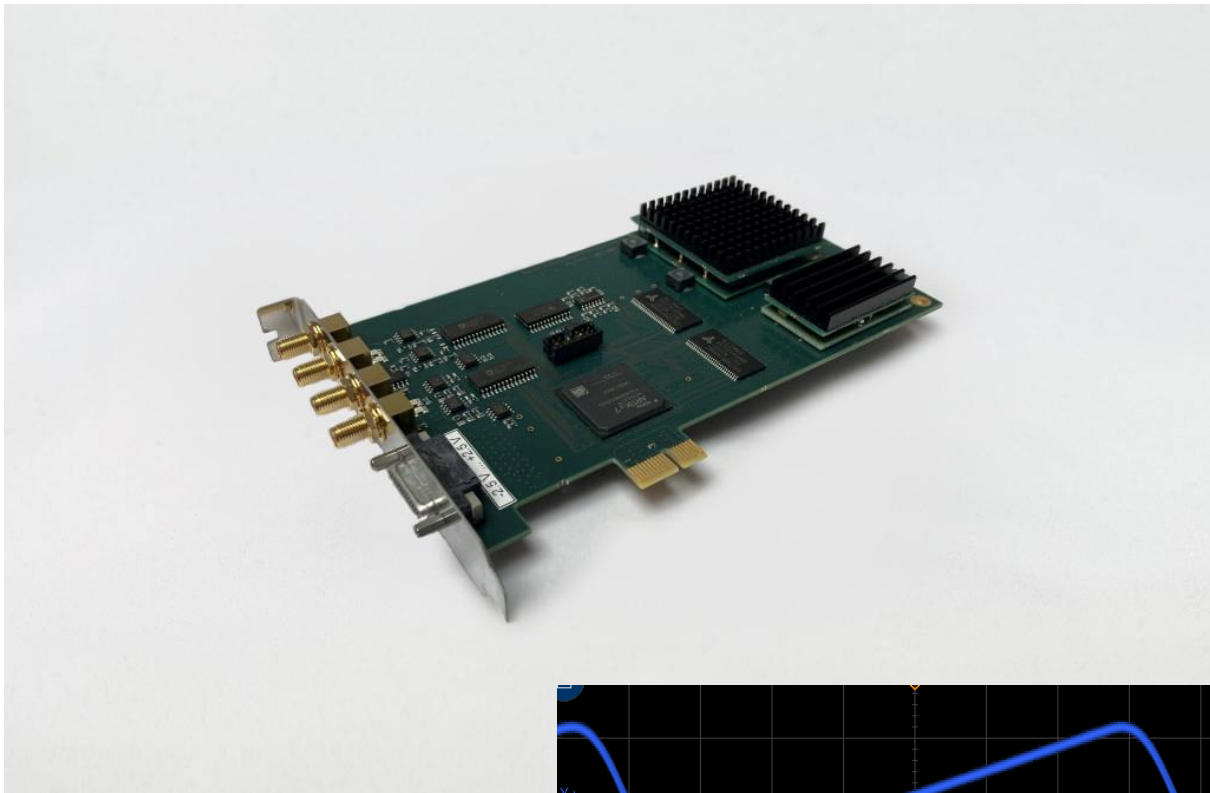


GVD-140

Scan Controller Card

Scan Controller Card

Scan Controller for Galvanometer and Piezo Scanners
Scan Waveforms Generated Purely by Hardware
Differential Output Voltage X+/X-, Y+/Y-
Standard Output Voltage Range +/- 2.5 V
Maximum Output Voltage Range +/- 10 V
Linear-Ramp or Sinusoidal Scan Modes
Variable Scan Speed and Scan Amplitude
Fast Scan due to Cycloid Flyback Characteristics
Pixel Times Down to 0.6 μ s
Control of 4 Lasers
Laser Power Control, Beam Blanking
Laser ON/OFF Control and Laser Multiplexing
PCIe Version



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Differential Outputs (X+/X- and Y+/Y-)

Voltage Range Options	
Maximum	±10 V
Standard	±2.5 V
Unipolar (Example)	0 ... +10 V
Output Impedance	50 Ω

Scan Characteristics

Scan Format	Up to 4096 x 4096
Scan Modes	Single-Point, Linear-Ramp, Stepped Ramp, Sinusoidal
Pixel Time	Down to 600 ns
Flyback Characteristic	Cycloid with Optional Beam Blanking

Scan Clocks (Frame, Line, Pixel)

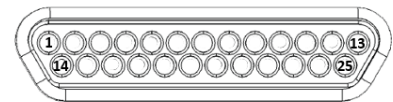
Output Voltage	TTL Compatible
Signal Polarity (Selectable by Software)	Negative / Positive
Pulse Width (Typ.)	
Frame	100 μs
Line	10 μs
Pixel	150 ns

Laser Control (Up to 4 Laser)

Scan Synchronous Laser Multiplexing	OFF, Pixel, Line, Frame
Multiplexing Scheme	2 or 4 Laser
Laser Power (Voltage Range)	0 ... +10 V
Attenuator (Laser-Hub)	Up, Down

PIN Output Scan Control Connector (Micro Sub-D 25 Pin)

1	+5 V
2	Laser Routing
3	Laser 2 ON
4	Laser 4 ON
5	Line
6	Laser 1 Power
7	Laser 3 Power
8	Laser 1 Power Up (*)
9	Laser 2 Power Up (*)
10	Laser 3 Power Up (*)
11	Laser 4 Power Up (*)
12	DCS-Box Control
13	GND
14	Laser Routing
15	Laser 1 ON
16	Laser 3 ON
17	Frame
18	Pixel
19	Laser 2 Power
20	Laser 4 Power
21	Laser 1 Power Down (**)
22	Laser 2 Power Down (**)
23	Laser 3 Power Down (**)
24	Laser 4 Power Down (**)
25	DCS-Box Control



(*) To motor for attenuator wheel. Pull to GND for 'Power UP'.

(**) To motor for attenuator wheel. Pull to GND for 'Power Down'.

Experimental Trigger Input (On Request)

Input Voltage Range	TTL
Trigger Edge (Selectable by Software)	Rising / Falling

System Integration Options

DCS-120 Series FLIM Systems	Up to 2 Lasers
Laser-Hub	Up to 4 Lasers
GVD-BOB	Up to 4 Lasers

Operation Environment

Computer / Operating System	PC Pentium, multi-core, >8GB RAM, Windows 10, Windows 11
Bus Connector	PCIe
Dimensions	172 mm x 100 mm x 20 mm

Related Literature

W. Becker, The bh TCSPC Handbook, 9th edition (2021). 950 pages, available on <https://www.becker-hickl.com>. Please contact bh for printed copies.
The bh TCSPC Technique, Principles and Applications. Overview brochure, 27 pages. Available on <https://www.becker-hickl.com>

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