



# 1.85 by 1.85mm (.073 by .073") Pitch GbX\* Backplane Connector System in 2, 3, 4 and 5-Pair Columns

## 2 and 3 Columns:

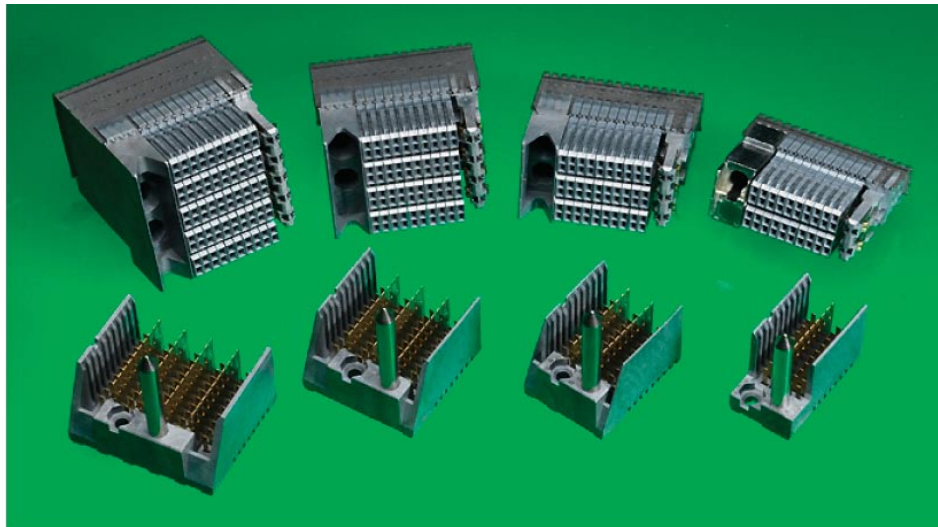
- 75650, 75370** Differential Daughtercard Assemblies
- 75670, 75660** Lite Daughtercard Assemblies
- 75676, 75666** Hybrid Daughtercard Assemblies
- 75827, 75433** Backplane Signal Headers
- 75861, 75649** Lite Backplane Signal Headers
- 75492, 75331** Backplane Power

## 4 and 5 Columns:

- 75220, 75360** Daughtercard Assemblies
- 75420** 4-Pair Lite Daughtercard Assemblies
- 75426** 4-Pair Hybrid Daughtercard Assemblies
- 75235, 75237** Backplane Signal Headers
- 75465** 4-Pair Lite Backplane Signal Header
- 75341, 75510** Backplane Power

## Stand-Alone Guide Pin Kit: 75234

- Data rate options up to 10 Gbps are able to support future daughtercard speed upgrades



Top, left to right: 75360, 75220, 75370, 75650. Bottom, left to right: 75237, 75235, 75433, 75827

### 2 and 3-Pair Columns add to Molex's GbX Backplane Interconnect System Offering, Delivering Speeds Up To 10 Gbps, High Density (Up to 69 Mated Differential Channels Per Inch) and is Custom Configurable

Data rates up to 10 Gbps may now be achieved with the GbX 2 and 3-pair column daughtercard and backplane system. The 2 and 3-pair column system completes the GbX product offering, making it a complete solution for high-end telecommunication and datacommunication applications.

The GbX connector system provides the speed, density, and low-applied cost required by leading-edge backplane applications. It is especially suited for designs that require future speed upgrades by daughtercard replacement into an existing backplane. With native differential signaling speeds up to 10 Gbps, GbX is well suited for existing and future generations of XAUI (10 Gigabit Attachment Unit Interface) and InfiniBand<sup>†</sup> based systems, in addition to those based on ATCA<sup>‡</sup> (Advanced Telecom Computing Architecture) and OIF (Optical Internetworking Forum) chip protocols.

Internetworking and telecommunication equipment engineers will benefit by the GbX connector's ability to provide not only a high-density, low applied-cost

solution in the near term, but also by its electrical performance in upgradeable systems. Speeds of 10 Gbps have been demonstrated with appropriate SERDES (Serializer/ Deserializer) devices and board-material selection. This allows system architects freedom-of-design for faster future systems without the worry of backward compatibility, along with the economy of a common backplane for two generations of equipment.

In addition, the GbX Lite Series system provides a complimentary high-density open pin field for cost-effective design of slower-speed circuits along the same stiffener as the standard, high-speed GbX wafers. For more information on Molex's extensive GbX offering, please visit: [www.molex.com/product/backplan/gbx.html](http://www.molex.com/product/backplan/gbx.html).

\*GbX and VHDM-HSD are registered trademarks of Amphenol Corporation

<sup>†</sup>InfiniBand is a registered trademark of the InfiniBand Trade Association

<sup>‡</sup>ATCA is a trademark of the PCI Industrial Manufacturers Group

### Features and Benefits

- Up to 69 real differential pairs per linear inch (27 real differential pairs per 10.00mm (.393")) offers high density with more differential pairs per linear inch than VHDM-HSD\*
- Bifurcated contact beams in daughtercard receptacle provide greater reliability with two points of contact to header pin
- Modular daughtercard components with GbX L-Series available with custom, cost-effective receptacle assemblies
- Optimized differential pair contacts for easier board trace routing



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### Reference Information

#### Packaging:

Daughtercard Assemblies: Tray

Backplane Headers: 2, 4 and 5 Pair- Tray;  
3 Pair- Tube

UL File No.: E29179

Designed In: Millimeters

### Electrical

Signal/Shield Contact Current Rating: 1.0A

Power Contact Current Rating: 6.0A

Contact to Plated-Through-Hole Resistance:  
1.0 milliohm max.

Power Blade Contact Resistance: 3.0 milliohms max.

Dielectric Withstanding Voltage: 750V RMS

Insulation Resistance: 1,000 Megohms min.

### Mechanical

Contact Insertion Force: 35.58N (8.00 lb) max. per contact

Contact Retention Force: 6.67N (1.50 lb) min. per contact

Mating Force: 0.59N (0.13 lb) max. per contact

Unmating Force: 0.342N (0.077 lb) min. per contact

Durability: 250 cycles max.

### Physical

Housing: Liquid Crystal Polymer, UL 94V-0

Contact: Copper Alloy

#### Plating:

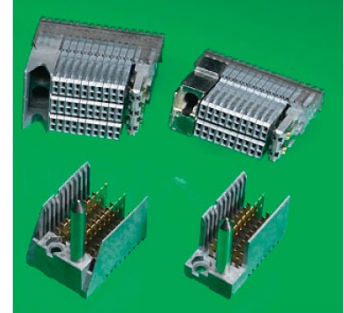
Contact Area – 0.76 $\mu$ m (30 $\mu$ ") Gold (Au) min.

Compliant Pin Area – Tin (Sn) or Tin/Lead (SnPb)

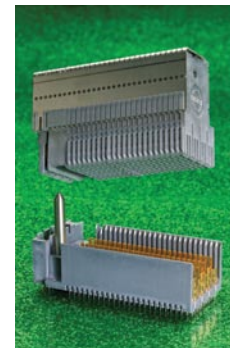
Underplating – Nickel (Ni)

PCB Thickness: 1.60mm (.062") min.

Operating Temperature: -55 to +105°C



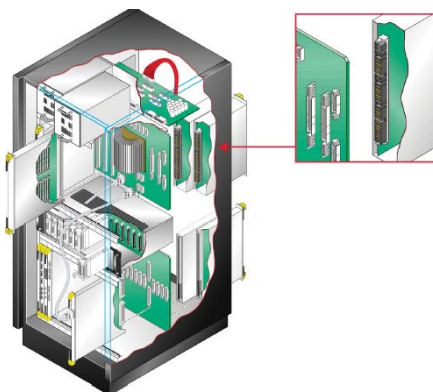
2 and 3-pair:  
Top, left to right: 75370, 75650  
Bottom, left to right: 75433, 75827



4 and 5-pair:  
Top: 75220  
Bottom: 75235

## APPLICATIONS

- Internetworking Equipment:
  - Servers, Hubs, and Routers
- Telecommunications Equipment:
  - Central Office, Cellular Infrastructure and Multi-platform Service (DSL, Cable Data) systems
- Medical Diagnostic Equipment
- Test and Measurement Equipment





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## Daughtercard Assembly

\*Daughtercards are custom configured. Please visit the Molex Backplane Configurator web site to create a custom daughtercard at: [www.molex.com/configurator.html](http://www.molex.com/configurator.html)

Daughtercard Assembly	2-Pair	3-Pair	4-Pair	5-Pair
Signal wafers, power modules, and guide modules sequentially assigned by application	75650-XXXX* (High-speed differential pair signal contacts only; wafer 75651-0001 for reference information only)	75370-XXXX* (High-speed signal contacts only; wafer 75371-0001 for reference information only)	75220-XXXX* (Wafer 75221-0001 for reference information only)	75360-XXXX* (Wafer 75361-0001 for reference information only)
Lite wafer blocks, power modules, and guide modules sequentially assigned by application	75670-XXXX* Low-speed signal contacts only, Lite wafer block 75671-0005 for reference information only)	75660-XXXX* Low-speed signal contacts only, Lite wafer block 75661-0005 for reference information only)	75420-XXXX* Low-speed signal contacts only, Lite wafer block 75421-0005 for reference information only)	N/A
Lite wafer blocks, signal wafers, power modules, and guide modules sequentially assigned by application	75676-XXXX* (High-speed differential pair signal contacts 75651-0001 and low-speed signal contacts 75671-0005 combined in one assembly)	75666-XXXX* (High-speed differential pair signal contacts 75371-0001 and low-speed signal contacts 75661-0005 combined in one assembly)	75426-XXXX* (High-speed differential pair signal contacts 75221-0001 and low-speed signal contacts 75421-0005 combined in one assembly)	N/A

## Backplane Signal Headers

† Multiple keying options are available; contact Molex Inside Sales.

Backplane Signal Header	2-Pair (4 Circuits per Column)†		3-Pair (6 Circuits per Column)†		4-Pair (8 Circuits per Column)†		5-Pair (10 Circuits per Column)†	
	Order No.	Circuits	Order No.	Circuits	Order No.	Circuits	Order No.	Circuits
5 Column Lite Open	75861-0504	25	75649-0504	40	75465-0505	55	N/A	N/A
10 Column Lite Open	75861-0104	50	75649-0104	80	75465-0104	110	N/A	N/A
25 Column Lite Open	75861-0204	125	N/A	N/A	75465-0204	275	N/A	N/A
10 Column Lite Guide Left	75861-2104	50	N/A	N/A	75465-2104	110	N/A	N/A
25 Column Lite Guide Left	75861-2204	125	N/A	N/A	75465-2204	275	N/A	N/A
10 Column Lite Guide Right	75861-4104	50	N/A	N/A	75465-4104	110	N/A	N/A
25 Column Lite Guide Right	75861-4204	125	N/A	N/A	75465-4204	275	N/A	N/A
5 Column Open	N/A	N/A	75433-0504	30	N/A	N/A	N/A	N/A
10 Column Open	75827-0104	40	75433-0104	60	75235-0104	80	75237-0104	100
25 Column Open	75827-0204	100	75433-0204	150	75235-0204	200	75237-0204	250
10 Column Guide Left	75827-2104	40	75433-2104	60	75235-2104	80	75237-2104	100
25 Column Guide Left	75827-2204	100	75433-2204	150	75235-2204	200	75237-2204	250
10 Column Guide Right	75827-4104	40	75433-4104	60	75235-4104	80	75237-4104	100
25 Column Guide Right	75827-4204	100	75433-4204	150	75235-4204	200	75237-4204	250

## Backplane Power and Guide Components

Backplane Power & Guide Components	2-Pair		3-Pair		4-Pair		5-Pair	
	Order No.	Circuits	Order No.	Circuits	Order No.	Circuits	Order No.	Circuits
Power	75492-1066	4	75331-0444	6	75341-4444	8	75517-7766	10
Stand-Alone Guide Pin Kit	75234-1508		75234-1469		75234-1469		75234-1469	

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