



Delivering high density and speeds up to 10 Gbps, the custom-configurable GbX® Backplane Connector System is prime for telecom and datacom designs requiring future speed upgrades

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, the GbX Backplane Connector System is well suited for existing and future generations of 10 Gigabit Attachment Unit Interface (XAUI) and InfiniBand† based systems, in addition to those based on Advanced Telecom Computing Architecture (ATCA‡) and Optical Internetworking Forum (OIF) chip protocols.

Networking and telecommunication equipment engineers will benefit by the GbX connector’s ability to provide not only a high-density, low applied costsolution in the near term, but also by its electrical performance in upgradeable systems. Speeds up to 10 Gbps have been demonstrated with appropriate Serializer / Deserializer (SERDES) 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.

The GbX Lite Series system provides a complementary high-density, open-pin field for costeffective design of slower-speed circuits along the same stiffener as the standard, high-speed GbX wafers.

Features and Benefits

GbX-E and GbX-U enhanced-shielding header design	Provides low cross-talk, allowing cleaner signaling at higher speeds over traditional GbX connectors
GbX-U utilizes a small 1.50mm compliant pin and an optimized PCB footprint	Reduces via affect on signal integrity
Data rate options up to 10 Gbps	Able to support future daughtercard speed upgrades
Bifurcated contact beams in daughtercard receptacle	Greater reliability with two points of contact
Modular daughtercard components with GbX Lite Series system available	Custom, cost-effective receptacle assemblies
Optimized differential-pair contacts	Easier board trace routing
Up to 69 real differential pairs per linear inch (27 real differential pairs per 10.00mm)	High density with more differential pairs per linear inch

GbX® Backplane Connector System

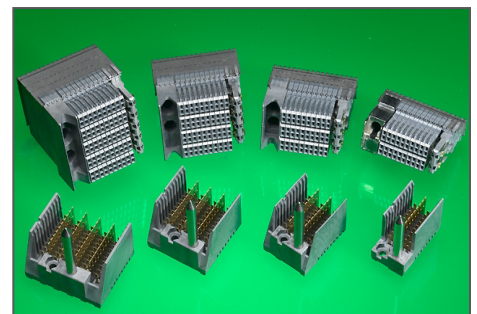
- 76921** 2-Pair GbX-U Header
- 76933** 5-Pair GbX-U Header
- 75834** 2-Pair GbX-E Header
- 75840** 4-Pair GbX-E Header

2 AND 3 PAIRS

- 75874, 75876** Differential Daughtercard Assemblies
- 75875, 75877** Lite/Hybrid Daughtercard Assemblies
- 75832, 75836** Backplane Signal Headers
- 75863, 75858** Lite Backplane Signal Headers
- 75492, 75331** Backplane Power

4 and 5 Columns Pairs

- 75878, 75880** Daughtercard Assemblies
- 75879** 4-Pair Lite/Hybrid Daughtercard Assemblies
- 75838, 75954** Backplane Signal Headers
- 75854** 4-Pair Lite Backplane Signal Header
- 75341, 75515, 75512, 75513** Backplane Power
- Stand Alone Guide Pin Kit**
- 75234** Pin Kit



GbX® Backplane Connector System

† InfiniBand is a registered trademark of the InfiniBand Trade Association
 ‡ ATCA is a trademark of the PCI Industrial Manufacturers
 GbX is a registered trademark of Amphenol TCS

Specifications

Reference Information

Packaging:

Daughtercard Assemblies: Tray

Backplane Headers:

2, 4 and 5 Pair — Tray

3 Pair — Tube

UL File No.: E29179

Designed In: Millimeters

Mechanical

Contact Insertion Force

(max. per contact):

Standard — 35.58N

GbX-U — 35.58N

GbX-E — 35.58N

Contact Retention Force

(min. per contact):

Standard — 6.67N

GbX-U — 3.55N

GbX-E — 6.67N

Mating Force (max. per contact):

0.59N

Unmating Force (min. per contact):

0.342N

Durability (max.): 250 cycles

Electrical

Signal Contact Current Rating: 1.0A

Shield Contact Current Rating: 2.0A

Power Contact Current Rating: 6.0A

Contact to Plated-Through-Hole

Resistance (max.):

1.0 milliohm

Power Blade Contact Resistance (max.):

3.0 milliohms

Dielectric Withstanding Voltage:

750V RMS

Insulation Resistance (min.):

1,000 Megohms

Physical

Housing:

Liquid Crystal Polymer, UL 94V-0

Contact: Copper Alloy

Plating:

Contact Area (min.) —

0.76µm Gold (Au)

Compliant Pin Area — Tin (Sn)

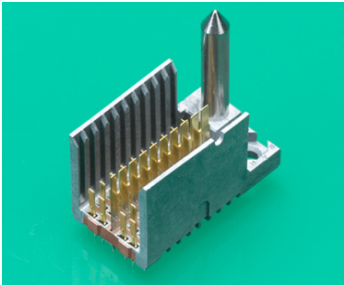
Underplating — Nickel (Ni)

PCB Thickness (min.): 1.60mm

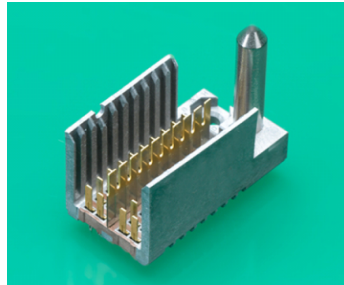
Operating Temperature:

-55 to +105°C

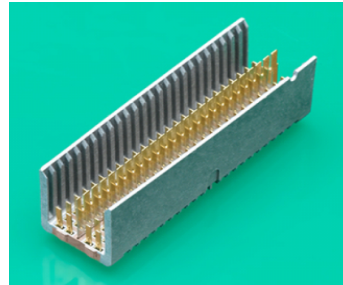
Additional Information



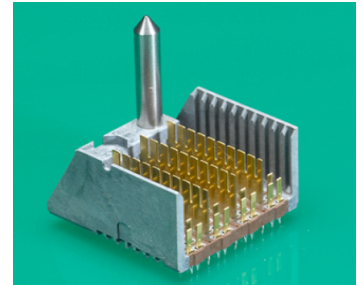
GbX-E (75834-210X)
2-by-10 column, left guide



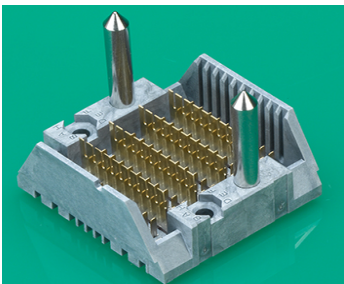
GbX-E (75647-410X)
2-by-10 column right guide



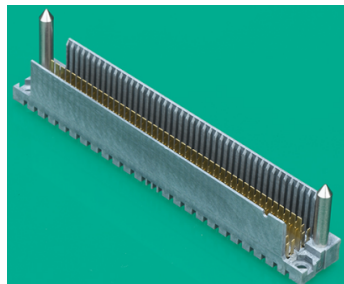
GbX-E (75647-020X)
2-by-25 column open ended



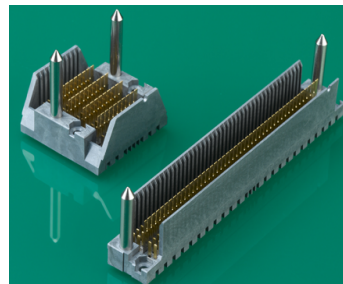
GbX-E (75830-410X)
4-by-10 column right guide



GbX-U (76933-6104)
5-by-10 dual guide



GbX-U (76921-6404)
2-by-45 dual guide



GbX-U 2 and 5 Pair

Applications

Data Networking Equipment

- Servers
- Storage systems

Telecommunication Equipment

- Hubs, switches, routers
- Central office, cellular infrastructure and multi-platform service (DSL, cable data)

Military/Aerospace Equipment

Industrial Equipment

Medical Equipment



Data Center

Ordering Information

Daughtercard Assemblies

	2-Pair	3-Pair	4-Pair	5-Pair
Signal wafer blocks, power modules and guide modules sequentially assigned by application	75874-XXXX* (High-speed differential pair signal contacts only; wafer 75651-0031 for reference information only)	75876-XXXX* (High-speed signal contacts only; wafer 75371-0031 for reference information only)	75878-XXXX* (Wafer 75221-0031 for reference information only)	75880-XXXX* (Wafer 75361-0031 for reference information only)
Lite wafer blocks, signal wafers, power modules and guide modules sequentially assigned by application	75875-XXXX* (High-speed differential pair signal contacts 75651-0031 and lowspeed signal contacts 75671-0035 combined in one assembly)	75877-XXXX* (High-speed differential pair signal contacts 75371-0031 and low-speed signal contacts 75661-0035 combined in one assembly)	75879-XXXX* (High-speed differential pair signal contacts 75221-0031 and lowspeed signal contacts 75421-0035 combined in one assembly)	N/A

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

Backplane Signal Headers

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		
GbX-E 5 Column Open	75834-0505	20	N/A	N/A	N/A	N/A	N/A	N/A		
GbX-E 5 Column Right	75834-4504				N/A	N/A				
GbX-E 10 Column Open	75834-0104	40			75840-0104	80				
GbX-E 10 Column Left	75834-2104				75840-2104					
GbX-E 10 Column Right	75834-4104				75840-4104					
GbX-E 25 Column Open	75834-0204	100			N/A	N/A	N/A	N/A	76933-6104	100
GbX-U 10 Column Dual	N/A	N/A			N/A	N/A	N/A	N/A	N/A	N/A
GbX-U 45 Column Dual	76921-6404	180	N/A	N/A	N/A	N/A	N/A	N/A		

Backplane Signal Headers

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	75863-0504	25	75858-0504	40	75854-0505	55	N/A	N/A
10 Column Lite Open	75863-0104	50	75858-0104	80	75854-0104	110		
25 Column Lite Open	75863-0204	125	N/A	N/A	75854-0204	275		
10 Column Lite Guide Left	75863-2104	50			75854-2104	110		
25 Column Lite Guide Left	75863-2204	125			75854-2204	275		
10 Column Lite Guide Right	75863-4104	50			75854-4104	110		
25 Column Lite Guide Right	75863-4204	125	75854-4204	275				
5 Column Open	N/A	N/A	75836-0504	30	N/A	N/A		
10 Column Open	75832-0104	40	75836-0104	60	75838-0104	80	75954-0104	100
25 Column Open	75832-0204	100	75836-0204	150	75838-0204	200	75954-0204	250
10 Column Guide Left	75832-2104	40	75836-2104	60	75838-2104	80	75954-2104	100
25 Column Guide Left	75832-2204	100	75836-2204	150	75838-2204	200	75954-2204	250
10 Column Guide Right	75832-4104	40	75836-4104	60	75838-4104	80	75954-4104	100
25 Column Guide Right	75832-4204	100	75836-4204	150	75838-4204	200	75954-4204	250

Backplane Power and Guide Components

Backplane Power and Guide Components	2-Pair		3-Pair		4-Pair		5-Pair	
	Order No.	Circuits	Order No.	Circuits	Order No.	Circuits	Order No.	Circuits
Power	75492-1033	4	75331-0333	6	75341-3333	8	75515-5555	10
Stand-Alone Guide Pin Kit	75234-1508		75234-1469		75234-1469		75234-1469	

GbX is a registered trademark of Amphenol TCS

www.molex.com/product/backplan/gbx.html