

ExaMAX® HIGH SPEED BACKPLANE CONNECTOR SYSTEM

The Path to 40 Gb/s

OVERVIEW

The ExaMAX® connector system is designed to enable superior 25 Gb/s electrical performance and provide a path to 40 Gb/s in anticipation of further increases in bandwidth requirements and the data rates used for high speed signaling.

ExaMAX® connectors feature a revolutionary beam-on-beam contact interface that minimizes the residual stub for improved signal integrity performance compared to typical blade-on-beam contact structures and provides exceptionally low mating force while maintaining excellent contact normal force.

Protected mating interfaces for both backplane and daughter card connectors also eliminate the exposed header pin field on the backplane, which can be susceptible to damage.

Each signal wafer incorporates an innovative one-piece, embossed ground structure to improve crosstalk performance through 40 Gb/s. The simple, functional design contributes to a very cost-effective solution.

The ExaMAX® high speed backplane connector family includes a direct mate orthogonal (DMO) connector with up to 72 differential pairs per node. This connector provides superior electrical performance, and reduces cost by eliminating the midplane, facilitating front-to-rear cooling and reduced chassis height compared to traditional backplane and midplane systems.



FEATURES

- Capable of supporting data rates of 25 Gbps with scalable migration path to 40 Gbps
- Unique beam-on-beam interface and skew equalized leadframes
- Hermaphroditic mating interface protects mating beams
- Simple efficient 92 ohm design
- 2.0 mm pitch delivers 76 pair per inch density
- Modular, 2mm hard metric connector block design
- 0.36 mm PTH for signals and 0.5mm for grounds
- Additional Signal Pin per IMLA
- Integrated guidance

BENEFITS

- Supports future system performance upgrades while eliminating costly redesign burden
- Superior signal integrity performance via impedance control, low cross-talk while eliminating insertion loss resonances. Mating forces reduced by 40% compared to traditional blade and beam designs
- Durable, reliable mating interface design. Eliminates crushed pins
- Supports both 85 and 100 Ohm applications
- Industry leading density performance
- Modular design capability supports applications requiring high and low speeds, power, and mechanical guidance at lowest industry costs
- Friendly to PCB manufacturers, improving cost and yield
- Integrate High and low speed signals in the same connector
- Superior mating performance



TECHNICAL INFORMATION

MATERIALS

- Contacts: High performance copper alloy
- Plating(s): Performance based plating at separable interface (Telcordia GR-1217 CORE) tin over nickel on press-fit tails
- Housings: High temperature thermoplastic, UL 94 V-0

ELECTRICAL PERFORMANCE

- Contact resistance: <10 mohm change from initial reading after environmental exposure
- Current rating (with <30°C temperature rise above ambient): signal contact: 0.5A/contact. Both signal and ground contacts can carry current

ENVIRONMENTAL

- Telcordia GR -1217-CORE Central Office qualification completed
- Operating temperature range: -55°C to +85°C

MECHANICAL PERFORMANCE

- Long mating wipe of > 2mm
X and Y capture a generous +/-1.4mm
- Mating force: 0.36 N max. per contact
- Unmating force: 0.12 min. per contact
- Average press-fit insertion force: 15 N max. per contact

SPECIFICATIONS

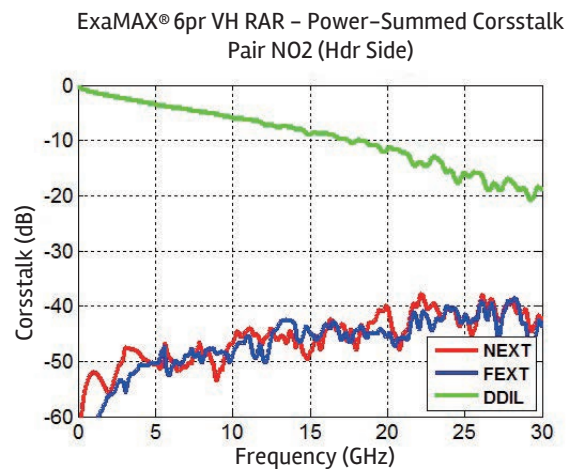
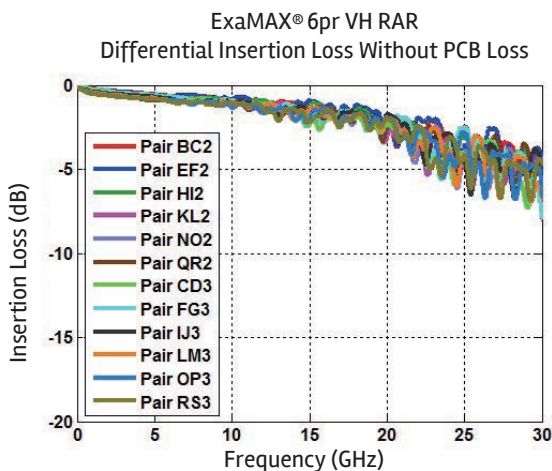
- Product specification: GS-12-1096
- Application specification: GS-20-0361

SIGNAL INTEGRITY PERFORMANCE

- See graphs below for IL and power-summed Crosstalk
- Impedance is tuned to 92 Ω making ExaMEZZ™ suitable for both 85 Ω and 100 Ω systems
- Test reports available showing performance in both 85 Ω and 100 Ω Environments
- OIF Specification: OIF-CEI-25G-LR

TARGET MARKET / APPLICATIONS

- Communications
 - Hubs, switches, routers
 - Optical Transport
 - Wireless infrastructure
- Data
 - Servers
 - External storage systems
 - Super computers
- Industrial & Instrumentation
 - Test Equipment
 - Emulation Equipment



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PART NUMBERS



Unguided End to End Stackable



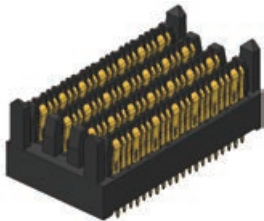
Right Guide



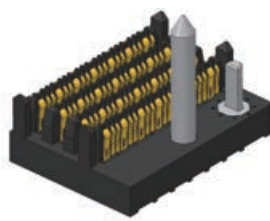
Left Guide

Standard Daughtercard Right Angle Receptacles (RAR) with 2.0 mm column Pitch

Pairs	Columns	Diff Pairs	Style			Differential Impedance
			No Guide	Right Guide	Left Guide	
2	6	12	10125053-101LF	10125053-11JLF	10125053-12JLF	92 Ohms
	8	16	10128337-101LF	10128337-11JLF	10128337-12JLF	
	10	20	10128339-101LF	10128339-11JLF	10128339-12JLF	
3	6	18	10128347-101LF	10128347-11JLF	10128347-12JLF	
	8	24	10124308-101LF	10124308-11JLF	10124308-12JLF	
	10	30	10121401-101LF	10121401-11JLF	10121401-12JLF	
4	6	24	10125055-101LF	10125055-11JLF	10125055-12JLF	
	8	32	10121056-101LF	10121056-11JLF	10121056-12JLF	
	10	40	10126363-101LF	10126363-11JLF	10126363-12JLF	
6	6	36	10125352-101LF	10125352-11JLF	10125352-12JLF	
	8	48	10124556-101LF	10124556-11JLF	10124556-12JLF	
	10	60	10127789-101LF	10127789-11JLF	10127789-12JLF	
	12	72	10123159-101LF	10123159-11JLF	10123159-12JLF	



Unguided End to End Stackable



Right Guide



Left Guide

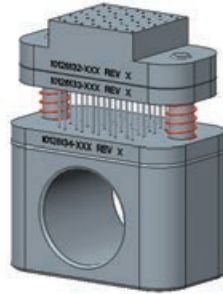
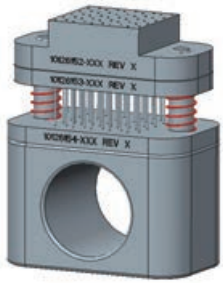
Standard Backplane Vertical Headers (VH) with 2.0 mm Column Pitch

Pairs	Columns	Diff Pairs	Style			Differential Impedance
			No Guide	Right Guide	Left Guide	
2	6	12	10128341-101LF	10128341-11JLF	10128341-12JLF	92 Ohms
	8	16	10128343-101LF	10128343-11JLF	10128343-12JLF	
	10	20	10128345-101LF	10128345-11JLF	10128345-12JLF	
3	6	18	10128349-101LF	10128349-11JLF	10128349-12JLF	
	8	24	10124311-101LF	10124311-11JLF	10124311-12JLF	
	10	30	10121412-101LF	10121412-11JLF	10121412-12JLF	
4	6	24	10127896-101LF	10127896-11JLF	10127896-12JLF	
	8	32	10121067-101LF	10121067-11JLF	10121067-12JLF	
	10	40	10126366-101LF	10126366-11JLF	10126366-12JLF	
6	6	36	10128351-101LF	10128351-11JLF	10128351-12JLF	
	8	48	10124752-101LF	10124752-11JLF	10124752-12JLF	
	10	60	10127791-101LF	10127791-11JLF	10127791-12JLF	
	12	72	10123162-101LF	10123162-11JLF	10123162-12JLF	

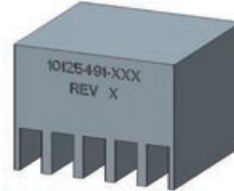
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PART NUMBERS



Removal Tools



Insertion Tool

Application Tools for RA Receptacles with 2 mm column Pitch

Pairs	Columns	Diff Pairs	Module Insertion Tool Part Number	Module Removal Tool Part Number
2	6	12	Flat Rock, No Tool	10126141-006
	8	16		10126141-008
	10	20		10126141-010
3	6	18	Flat Rock, No Tool	10126146-006
	8	24		10126146-008
	10	30		10126146-010
4	6	24	Flat Rock, No Tool	10126151-006
	8	32		10126151-008
	10	40		10126151-010
6	6	36	Flat Rock, No Tool	10126156-006
	8	48		10126156-008
	10	60		10126156-010
	12	72		10126156-012

Application Tools for Vertical Headers on Backplanes with 2 mm column Pitch

Pairs	Columns	Diff Pairs	Module Insertion Tool Part Number	Module Removal Tool Part Number
2	6	12	10125489-006	10126121-006
	8	16	10125489-008	10126121-008
	10	20	10125489-010	10126121-010
3	6	18	10125490-006	10126126-006
	8	24	10125490-008	10126126-008
	10	30	10125490-010	10126126-010
4	6	24	10125491-006	10126131-006
	8	32	10125491-008	10126131-008
	10	40	10125491-010	10126131-010
6	6	36	10125493-006	10126136-006
	8	48	10125493-008	10126136-008
	10	60	10125493-010	10126136-010
	12	72	10125493-012	10126136-012

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