

ExaMAX® VS High Speed Backplane Connector System

Scalable – Cost Optimized Backplane System, 25Gb/s electrical performance

MIGRATION PATH TO HIGHER BANDWIDTH APPLICATIONS; FORWARD MATING AND FOOTPRINT COMPATIBLE

ExaMAX® VS backplane connector system meets industry specifications requiring higher bandwidth applications up to 25Gb/s. The high performance connector system provides both mechanical robustness and superior signal integrity. ExaMAX® VS delivers low crosstalk noise and low insertion loss while minimizing channel performance variation for every differential pair.

- ExaMAX® VS offers forward mating and footprint compatible design that enables a scalable migration path beyond 25Gb/s
- The innovative beam-on-beam contact interface minimizes residual stub for improved signal integrity performance while providing exceptionally low mating forces
- ExaMAX® product family is offered in industry standard packaging options including traditional backplane, coplanar board, orthogonal midplane and orthogonal direct mate, mezzanine and cable to board configurations



TARGET MARKETS



FEATURES

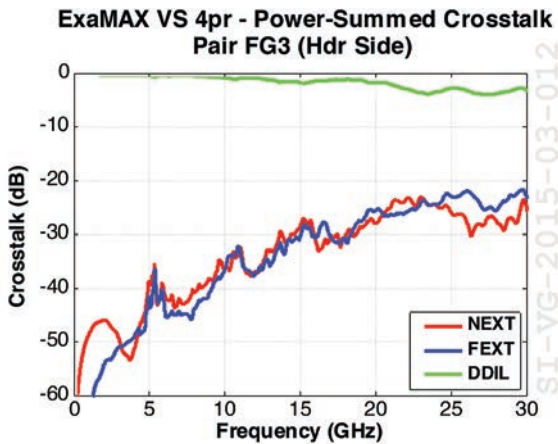
- Capable of supporting data rates up to 25Gb/s
- Scalable performance to higher bandwidth applications
- Unique beam-on-beam interface and skew equalized leadframes
- Hermaphroditic mating interface protects mating beams
- 92Ω nominal impedance
- Modular, hard metric connector block design
- Zero skew
- Additional signal pin per column
- High speed signal PCB hole: 0.36mm (finished hole)
- Ground pin PCB hole: 0.5mm (finished hole)
- Integrated guide design

BENEFITS

- Meets Industry specifications such as PCI Express, SATA, Fiber Channel, InfiniBand, Ethernet, SAS, OIF CEI, IBTA FDR, IEEE
- Forward mating compatible
- Footprint compatible to standard ExaMAX® (56Gb/s)
- Provides low crosstalk while eliminating insertion loss resonances
- Reduces mating force up to 65% compared to traditional blade and beam designs
- Durable, reliable mating interface design eliminates crushed pins
- Minimizes impedance discontinuities
- 2mm pitch for high density application
- 3mm pitch enables quad routing and lower PCB cost
- Optimizes PCB routing
- Integrates high and low speed signals in the same connector
- Optimizes electrical performance and aspect ratio
- Improves mating performance using minimal board space

TECHNICAL INFORMATION

SIGNAL INTEGRITY PERFORMANCE



* 8 nearest aggressors included in power-summed crosstalk calculation

- Impedance is tuned to 92Ω making the ExaMAX® VS Connector suitable for usage in both 85 and 100Ω systems
- Test reports are available to show the performance in both 85 and 100Ω environments

MATERIAL

- 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 Performance Thermoplastic, UL94-V0

MECHANICAL PERFORMANCE

- Long mating wipe of > 2mm
- X and Y capture a generous 1.1mm
- Mating Force: 0.38N max. per contact
- Unmating Force: 0.10N min. per contact
- Average press-fit Insertion Force: 12N max. per contact

ELECTRICAL PERFORMANCE

- Contact Resistance: 20mV max., 100mA current
- Insulation Resistance: 500V
- Dielectric Withstanding Voltage: 500VDC
- Current Rating (with 30° C T-rise above ambient)
 - Signal contact: 0.5A/Contact (both signal and ground contacts can carry current)

APPROVALS AND CERTIFICATIONS

- Telcordia GR-1217-CORE Central Office qualification passed
- UL E66906

ENVIRONMENTAL

- Operating Temperature: -55°C to +85°C

SPECIFICATION

- Amphenol Product Specification: GS-12-1096
- Amphenol Application Specification: GS-20-0361

INDUSTRY SPECIFICATIONS

Industry Specifications	Speed Performance
PCI Express (PCIe) Gen 1/2/3/4	2.5Gb/s to 16Gb/s
Serial Attached SCSI (SAS) 1.1/2.1/3.0/4.0	3Gb/s to 24Gb/s
SATA Revision 1.x/2.x/3.x	1.5Gb/s to 6Gb/s
Fibre Channel (FC) Gen1/Gen2/Gen3/Gen4/Gen5	1.0625Gb/s to 14.025Gb/s
InfiniBand (IB) SDR/DDR/QDR/FDR/EDR	2.5Gb/s to 25Gb/s
Ethernet 1Gbe/10Gbe/40Gbe/100Gbe/25Gbe	1.25Gb/s to 25.78125Gb/s

TARGET MARKETS/APPLICATIONS



Hubs
Optical Transport
Router
Switches
Wireless Infrastructure



External Storage System
Server
Supercomputer



Emulation Equipment
Industrial & Instrumentation
Test Equipment

PART NUMBERS

EXAMAX® VS TRADITIONAL MOTHER-DAUGHTER BOARD: NO GUIDE

Product Variation			Mating Connector System	
Pairs	Columns	Differential Pairs	No Guide Pin	
			Vertical Header (VH)	Right Angle Receptacle (RAR)
4	6	24	10127896-101LF	10137857-101LF
	8	32	10121067-101LF	10137858-101LF
	10	40	10126366-101LF	10137859-101LF
	12	48	10132074-101LF	10137860-101LF



Vertical Header
(No Guide)



Right Angle Receptacle
(No Guide)

EXAMAX® VS TRADITIONAL MOTHER-DAUGHTER BOARD: LEFT GUIDE

Product Variation			Mating Connector System	
Pairs	Columns	Differential Pairs	Left Guide Pin	
			Vertical Header (VH)	Right Angle Receptacle (RAR)
4	6	24	10127896-12JLF	10137857-12JLF
	8	32	10121067-12JLF	10137858-12JLF
	10	40	10126366-12JLF	10137859-12JLF
	12	48	10132074-12JLF	10137860-12JLF



Vertical Header
(Left Guide)



Right Angle Receptacle
(Left Guide)

EXAMAX® VS TRADITIONAL MOTHER-DAUGHTER BOARD: RIGHT GUIDE

Product Variation			Mating Connector System	
Pairs	Columns	Differential Pairs	Right Guide Pin	
			Vertical Header (VH)	Right Angle Receptacle (RAR)
4	6	24	10127896-11JLF	10137857-11JLF
	8	32	10121067-11JLF	10137858-11JLF
	10	40	10126366-11JLF	10137859-11JLF
	12	48	10132074-11JLF	10137860-11JLF

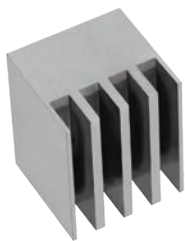


Vertical Header
(Right Guide)

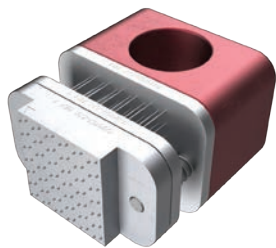


Right Angle Receptacle
(Right Guide)

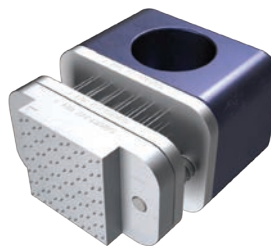
TOOLING INFORMATION



Insertion Tool



Vertical and Right Angle Header Removal Tool



Right Angle Receptacle Removal Tool

EXAMAX® VS APPLICATION TOOLING

Product Variations			Vertical Header (VH) Tooling	
Pairs	Columns	Differential Pairs	Insertion Tool Part Number	Removal Tool Part Number
4	6	24	10125491-006	10126131-006
	8	32	10125491-008	10126131-008
	10	40	10125491-010	10126131-010
	12	48	10125491-012	10126131-012

Product Variations			Right Angle Receptacle (RAR) Tooling	
Pairs	Columns	Differential Pairs	Insertion Tool Part Number	Removal Tool Part Number
4	6	24	Flat Rock	10126151-006
	8	32	Flat Rock	10126151-008
	10	40	Flat Rock	10126151-010
	12	48	Flat Rock	10126151-012

EXAMAX® PROTECTIVE CAPS

PART NUMBERS



Header Protective Cap



Receptacle Protective Cap

Product Variation			Protective Caps	
Pairs	Columns	Differential Pairs	Header	Receptacle
4	6	24	10138303-006	10138300-006
	8	32	10138303-008	10138300-008
	10	40	10138303-010	10138300-010
	12	48	10138303-012	10138300-012