



# ExaMAX<sup>®</sup> HIGH SPEED BACKPLANE CONNECTOR SYSTEM

## Product Presentation



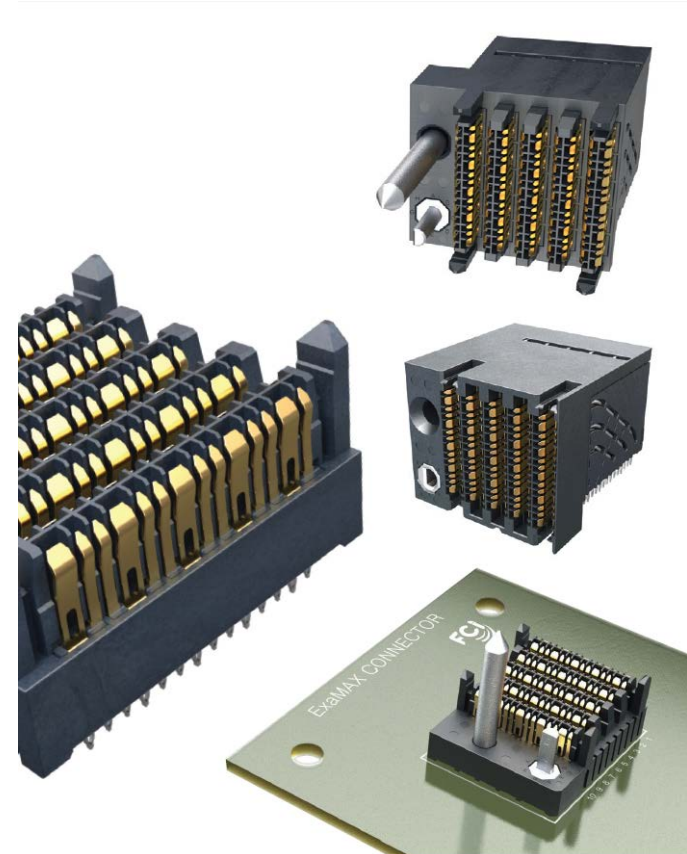
# ExaMAX®



## What is it?

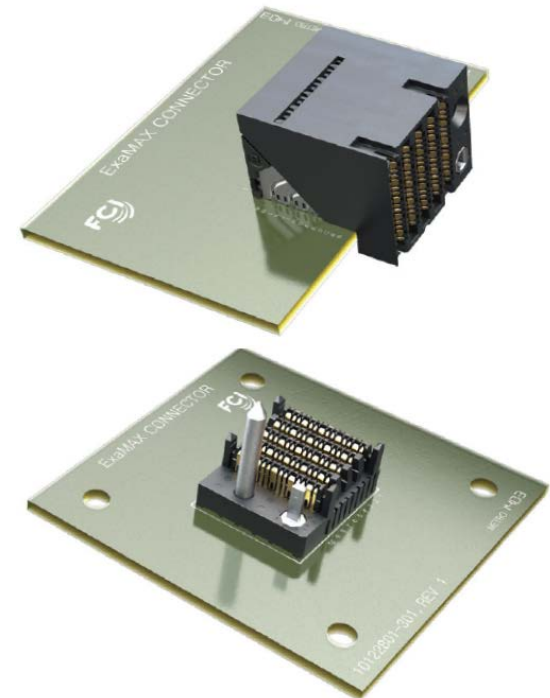
- ExaMAX® high speed backplane connector system is designed to enable superior 25Gb/s electrical performance and provide a path to 56Gb/s in anticipation of further increases in bandwidth requirements and the data rates used for high speed signaling.

- The ExaMAX® high speed connector system is offered in industry standard packaging options including a broad range of backplane, coplanar, mezzanine, cable-to-board, orthogonal midplane and orthogonal direct configurations.



## Advantages of EXAMAX<sup>®</sup>

- ExaMAX<sup>®</sup> 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 56Gb/s. The simple, functional design contributes to a very cost-effective solution.



## Features and Benefits

Features	Benefits
<ul style="list-style-type: none"><li>• Data rates scalable from 25Gb/s to 56Gb/s for higher bandwidth applications</li></ul>	<ul style="list-style-type: none"><li>• Supports system upgrade without costly redesigns</li><li>• Backward mating compatible</li><li>• Footprint compatible to standard ExaMAX® VS</li></ul>
<ul style="list-style-type: none"><li>• 12 to 96 differential pairs per node</li></ul>	<ul style="list-style-type: none"><li>• Wide product range for various packaging options</li></ul>
<ul style="list-style-type: none"><li>• Unique beam-on-beam interface and skew equalized leadframes</li></ul>	<ul style="list-style-type: none"><li>• Provides low crosstalk while eliminating insertion loss resonances</li><li>• Reduces mating force up to 65% compared to traditional blade and beam designs</li></ul>
<ul style="list-style-type: none"><li>• Hermaphroditic mating interface protects mating beams</li></ul>	<ul style="list-style-type: none"><li>• Durable, reliable mating interface design eliminates crushed pins</li></ul>
<ul style="list-style-type: none"><li>• 85Ω and 92Ω nominal impedance ± 10%</li></ul>	<ul style="list-style-type: none"><li>• Minimizes impedance discontinuities</li><li>• Supports industry specifications such as Intel, QPI, Intel UPI and PCI Express</li></ul>
<ul style="list-style-type: none"><li>• Modular, hard metric connector design</li></ul>	<ul style="list-style-type: none"><li>• 2mm pitch for high density application</li><li>• 3mm pitch enables quad routing and lowers PCB cost</li></ul>
<ul style="list-style-type: none"><li>• Zero skew</li></ul>	<ul style="list-style-type: none"><li>• Optimizes PCB routing</li></ul>
<ul style="list-style-type: none"><li>• Additional signal pin per column</li></ul>	<ul style="list-style-type: none"><li>• Integrates high and low speed signals in the same connector</li></ul>
<ul style="list-style-type: none"><li>• High speed signal PCB hole: 0.036mm</li><li>• Ground pin PCB hole: 0.050mm</li></ul>	<ul style="list-style-type: none"><li>• Optimizes electrical performance and aspect ratio</li></ul>
<ul style="list-style-type: none"><li>• Integrated guide design</li></ul>	<ul style="list-style-type: none"><li>• Improves mating performance using minimal board space</li></ul>

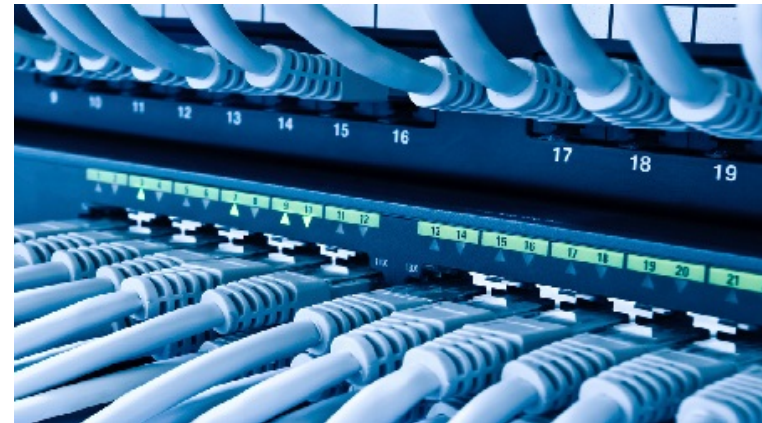
# ExaMAX®



## Typical Application



Data Center

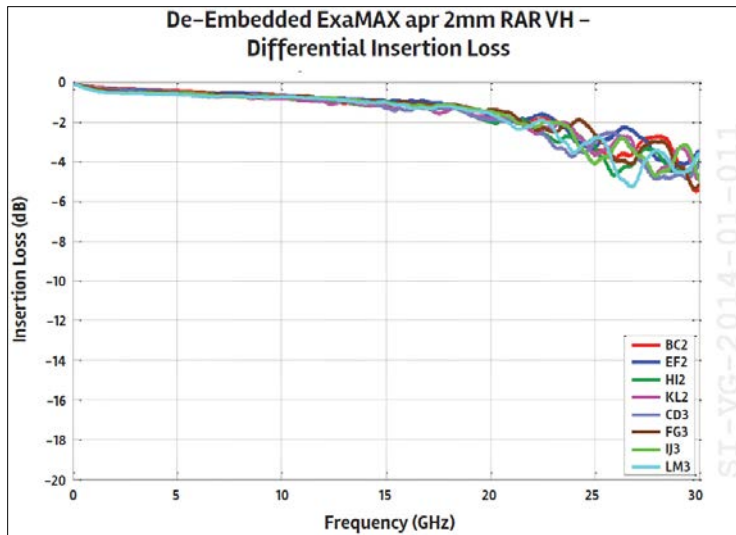


High End Telecom



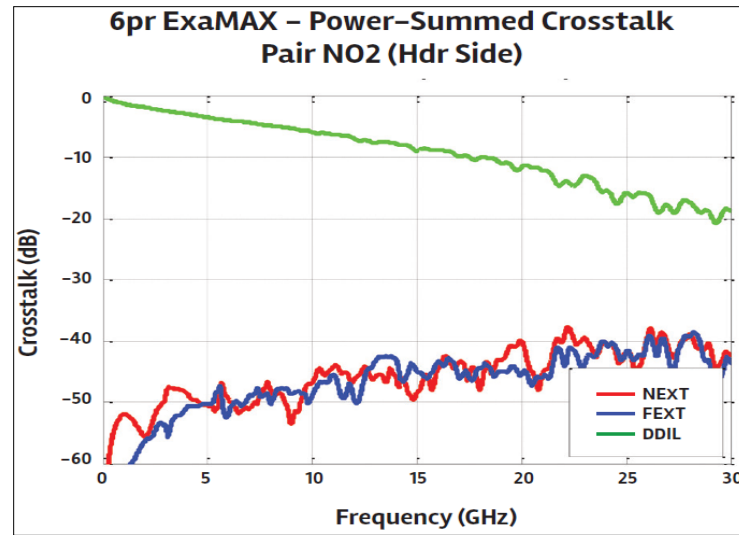
Computer Server

## Specifications



### 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



### SIGNAL INTEGRITY PERFORMANCE

- See next page for plots of Insertion Loss and power-summed crosstalk
- Impedance is tuned to 92 making the ExaMAX® Connector suitable for usage in both 85- and 100-ohm systems
- Test reports are available which show the performance in both 85- and 100-ohm environments
- Connector complies with industry standards:
  - OIF CEI-25G-LR Specification
  - IEEE 8023.bj Specification

## Part Numbers – Traditional BP No Guide

ExaMAX Traditional Mother - Daughter Board					Differential Impedance
Part Numbers			Mating Connector System		
Pairs	Columns	Differential Pairs	No Guide Pin		
			Vertical Header	Right Angle Receptacle	
2	6	12	10128334-101LF	10128332-101LF	92 Ohms
	8	16	10124412-101LF	10124411-101LF	
	10	20	10124414-101LF	10124413-101LF	
3	6	18	10128349-101LF	10128347-101LF	
	8	24	10124311-101LF	10124308-101LF	
	10	30	10121412-101LF	10121401-101LF	
4	6	24	10127896-101LF	10137000-101LF	
	8	32	10121067-101LF	10137002-101LF	
	10	40	10126366-101LF	10137004-101LF	
	12	48	10132074-101LF	10137006-101LF	
6	6	36	10128351-101LF	10131760-101LF	
	8	48	10124752-101LF	10131762-101LF	
	10	60	10127791-101LF	10131764-101LF	
	12	72	10123162-101LF	10131766-101LF	
8	8	64	10129433-101LF	10129430-101LF	
	10	80	10129418-101LF	10128498-101LF	
	12	96	10135021-101LF	10135015-101LF	



Vertical Header  
(No Guide)



Right Angle Receptacle  
(No Guide)

## Part Numbers – Traditional BP Left Guide

ExaMAX Traditional Mother - Daughter Board					Differential Impedance
Part Numbers			Mating Connector System		
Pairs	Columns	Differential Pairs	Guide Left (Pin)		
			Vertical Header	Right Angle Receptacle	
2	6	12	10128334-12JLF	10128332-12JLF	92 Ohms
	8	16	10124412-12JLF	10124411-12JLF	
	10	20	10124414-12JLF	10124413-12JLF	
3	6	18	10128349-12JLF	10128347-12JLF	
	8	24	10124311-12JLF	10124308-12JLF	
	10	30	10121412-12JLF	10121401-12JLF	
4	6	24	10127896-12JLF	10137000-12JLF	
	8	32	10121067-12JLF	10137002-12JLF	
	10	40	10126366-12JLF	10137004-12JLF	
	12	48	10132074-12JLF	10137006-12JLF	
6	6	36	10128351-12JLF	10131760-12JLF	
	8	48	10124752-12JLF	10131762-12JLF	
	10	60	10127791-12JLF	10131764-12JLF	
	12	72	10123162-12JLF	10131766-12JLF	
8	8	64	10129433-12JLF	10129430-12JLF	
	10	80	10129418-12JLF	10128498-12JLF	
	12	96	10135021-12JLF	10135015-12JLF	



Vertical Header  
(Left Guide)



Right Angle Receptacle  
(Left Guide)



## Part Numbers – Traditional BP Right Guide

ExaMAX Traditional Mother - Daughter Board					Differential Impedance
Part Numbers			Mating Connector System		
Pairs	Columns	Differential Pairs	Guide Right (Pin)		
			Vertical Header	Right Angle Receptacle	
2	6	12	10128334-11JLF	10128332-11JLF	92 Ohms
	8	16	10124412-11JLF	10124411-11JLF	
	10	20	10124414-11JLF	10124413-11JLF	
3	6	18	10128349-11JLF	10128347-11JLF	
	8	24	10124311-11JLF	10124308-11JLF	
	10	30	10121412-11JLF	10121401-11JLF	
4	6	24	10127896-11JLF	10137000-11JLF	
	8	32	10121067-11JLF	10137002-11JLF	
	10	40	10126366-11JLF	10137004-11JLF	
	12	48	10132074-11JLF	10137006-11JLF	
6	6	36	10128351-11JLF	10131760-11JLF	
	8	48	10124752-11JLF	10131762-11JLF	
	10	60	10127791-11JLF	10131764-11JLF	
	12	72	10123162-11JLF	10131766-11JLF	
8	8	64	10129433-11JLF	10129430-11JLF	
	10	80	10129418-11JLF	10128498-11JLF	
	12	96	10135021-11JLF	10135015-11JLF	



Vertical Header  
(Right Guide)



Right Angle Receptacle  
(Right Guide)

## Part Numbers – Coplanar No Guide

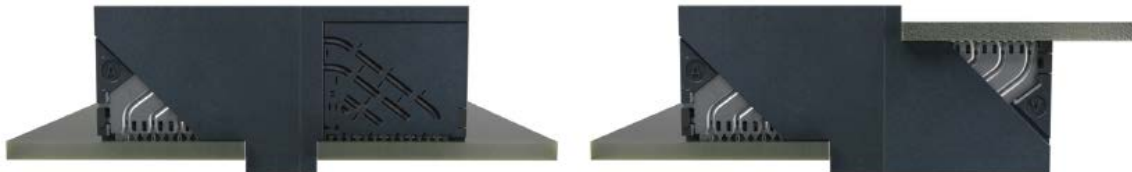
ExaMAX Coplanar: No Guide Pin					Differential Impedance
Part Numbers			Mating Connector System		
Pairs	Columns	Differential Pairs	No Guide Pin		
			Right Angle Header	Right Angle Receptacle	
2	6	12	10128401-101LF	10128332-101LF	92 Ohms
	8	16	10128403-101LF	10124411-101LF	
	10	20	10128405-101LF	10124413-101LF	
3	6	18	10128413-101LF	10128347-101LF	
	8	24	10128415-101LF	10124308-101LF	
	10	30	10128417-101LF	10121401-101LF	
4	6	24	10125287-101LF	10137000-101LF	
	8	32	10128419-101LF	10137002-101LF	
	10	40	10128421-101LF	10137004-101LF	
6	6	36	10125350-101LF	10131760-101LF	
	8	48	10124558-101LF	10131762-101LF	
	10	60	10128425-101LF	10131764-101LF	
	12	72	10124560-101LF	10131766-101LF	
	16	96	10132650-101LF	10131770-101LF	
8	8	64	10129435-101LF	10129430-101LF	
	10	80	10129428-101LF	10128498-101LF	
	12	96	10135018-101LF	10135015-101LF	



Right Angle Header  
(No Guide)



Right Angle Receptacle  
(No Guide)



## Part Numbers – Coplanar Left Guide

ExaMAX Coplanar: Guide Left (Pin)					Differential Impedance
Part Numbers			Mating Connector System		
Pairs	Columns	Differential Pairs	Guide Left (Pin)		
			Right Angle Header	Right Angle Receptacle	
2	6	12	10128401-12JLF	10128332-12JLF	92 Ohms
	8	16	10128403-12JLF	10124411-12JLF	
	10	20	10128405-12JLF	10124413-12JLF	
3	6	18	10128413-12JLF	10128347-12JLF	
	8	24	10128415-12JLF	10124308-12JLF	
	10	30	10128417-12JLF	10121401-12JLF	
4	6	24	10125287-12JLF	10137000-12JLF	
	8	32	10128419-12JLF	10137002-12JLF	
	10	40	10128421-12JLF	10137004-12JLF	
6	6	36	10125350-12JLF	10131760-12JLF	
	8	48	10124558-12JLF	10131762-12JLF	
	10	60	10128425-12JLF	10131764-12JLF	
	12	72	10124560-12JLF	10131766-12JLF	
8	8	64	10129435-12JLF	10129430-12JLF	
	10	80	10129428-12JLF	10128498-12JLF	
	12	96	10135018-12JLF	10135015-12JLF	



Right Angle Header  
(Left Guide)

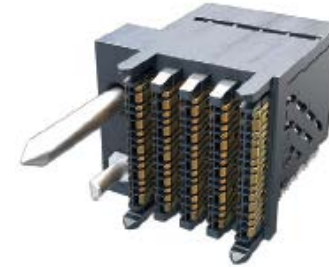


Right Angle Receptacle  
(Left Guide)



## Part Numbers – Coplanar Right Guide

ExaMAX Coplanar: Guide Right (Pin)					Differential Impedance
Part Numbers			Mating Connector System		
Pairs	Columns	Differential Pairs	Guide Right (Pin)		
			Right Angle Header	Right Angle Receptacle	
2	6	12	10128401-11JLF	10128332-11JLF	92 Ohms
	8	16	10128403-11JLF	10124411-11JLF	
	10	20	10128405-11JLF	10124413-11JLF	
3	6	18	10128413-11JLF	10128347-11JLF	
	8	24	10128415-11JLF	10124308-11JLF	
	10	30	10128417-11JLF	10121401-11JLF	
4	6	24	10125287-11JLF	10137000-11JLF	
	8	32	10128419-11JLF	10137002-11JLF	
	10	40	10128421-11JLF	10137004-11JLF	
6	6	36	10125350-11JLF	10131760-11JLF	
	8	48	10124558-11JLF	10131762-11JLF	
	10	60	10128425-11JLF	10131764-11JLF	
	12	72	10124560-11JLF	10131766-11JLF	
8	8	64	10129435-11JLF	10129430-11JLF	
	10	80	10129428-11JLF	10128498-11JLF	
	12	96	10135018-11JLF	10135015-11JLF	



Right Angle Header  
(Right Guide)



Right Angle Receptacle  
(Right Guide)





**THANK YOU**

