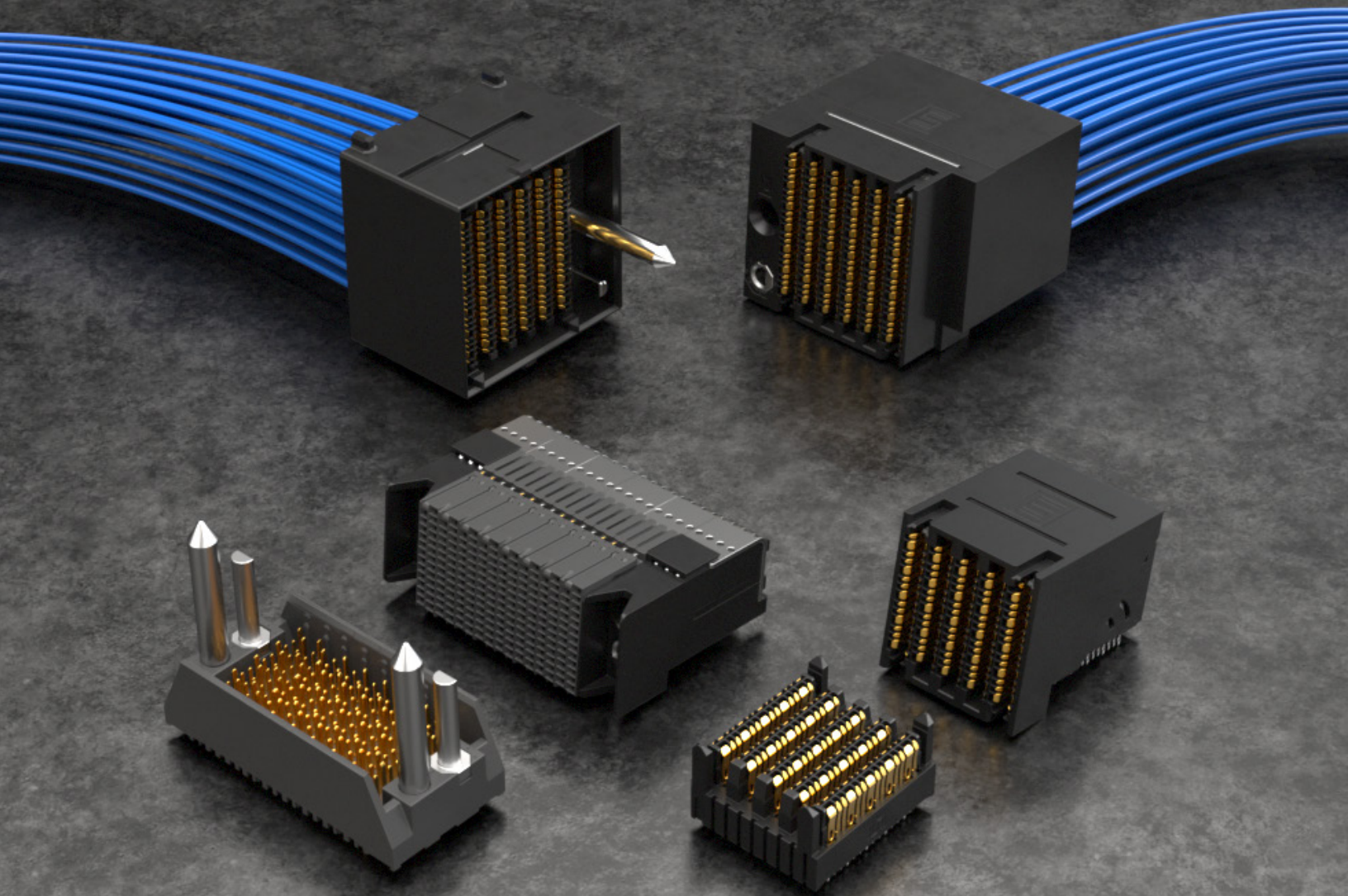


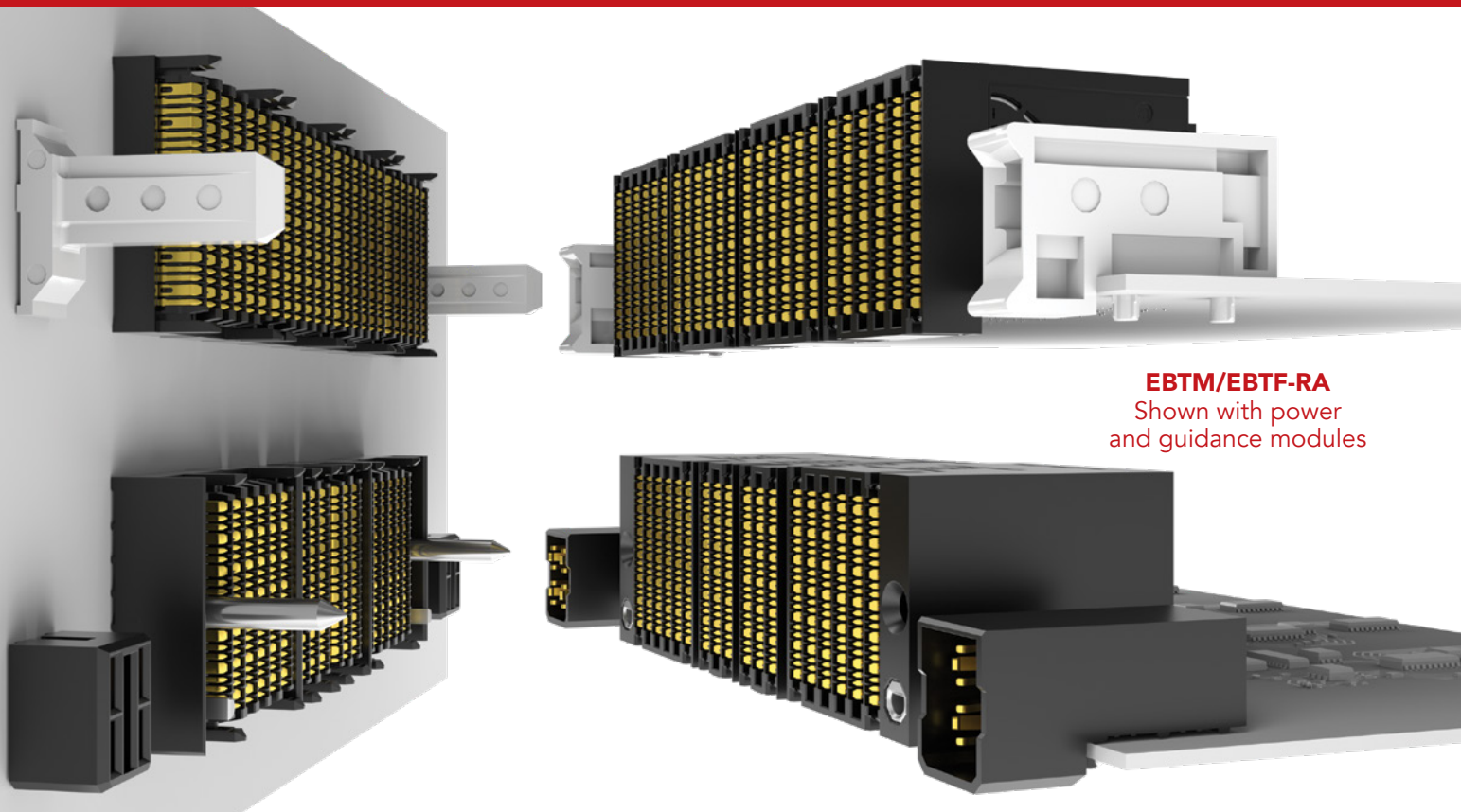


# HIGH-SPEED **BACKPLANE SYSTEMS**



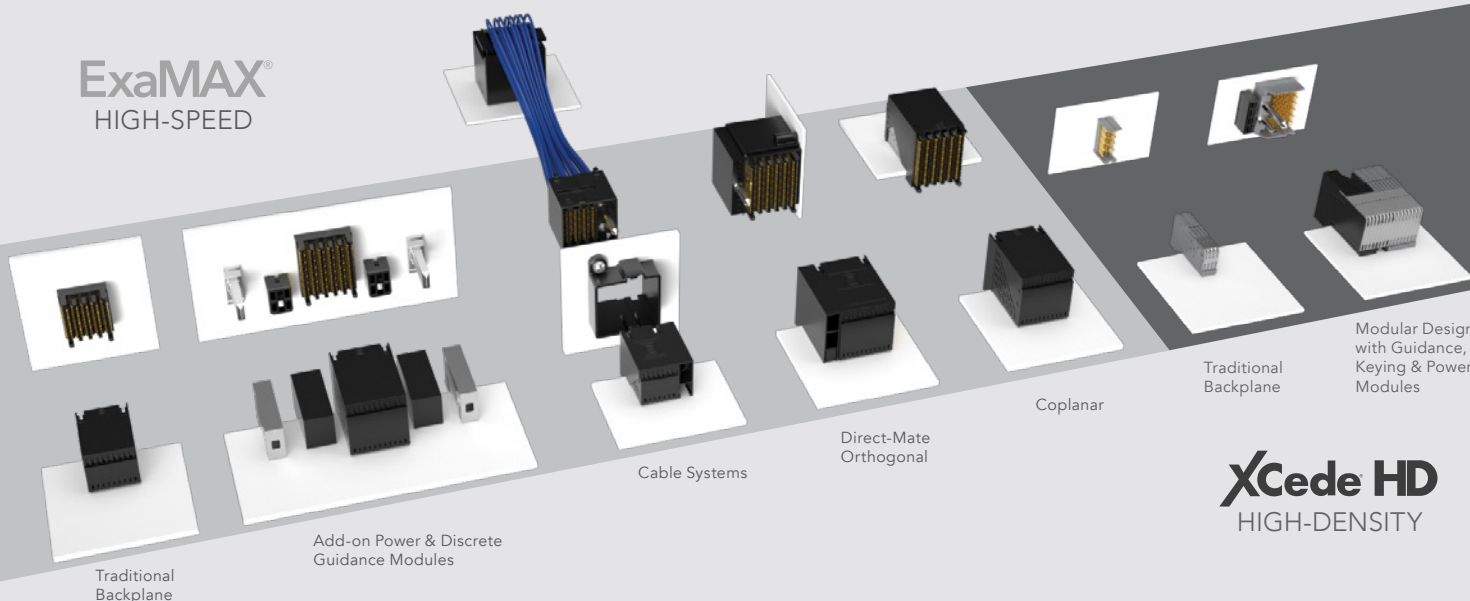
# HIGH-SPEED BACKPLANE SYSTEMS

HIGH-DENSITY • DESIGN FLEXIBILITY • HIGH RELIABILITY



**EBTM/EBTF-RA**  
Shown with power  
and guidance modules

**ExaMAX<sup>®</sup>**  
HIGH-SPEED



Traditional  
Backplane

Add-on Power & Discrete  
Guidance Modules

Cable Systems

Direct-Mate  
Orthogonal

Coplanar

Traditional  
Backplane

Modular Design  
with Guidance,  
Keying & Power  
Modules

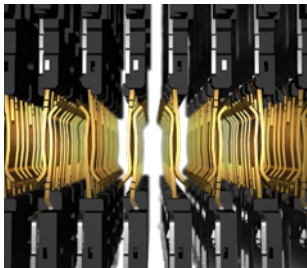
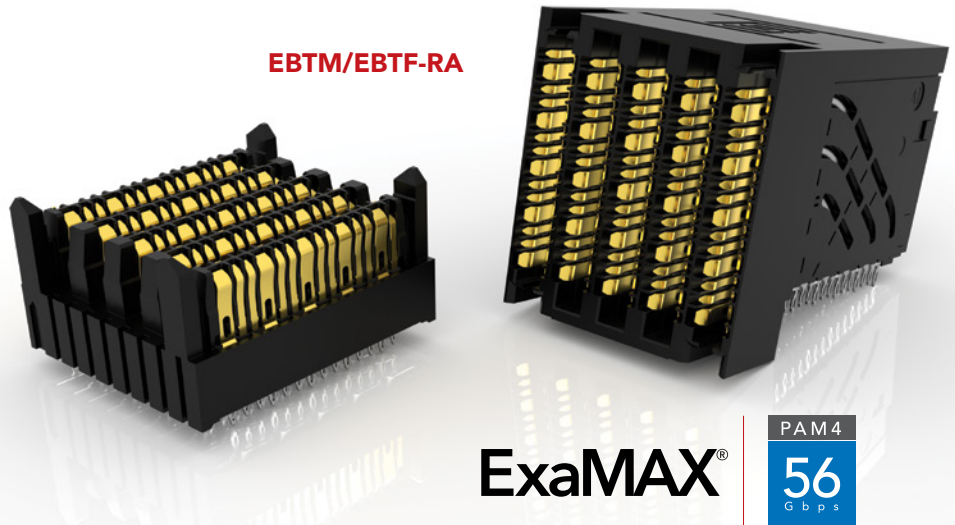
**XCode HD**  
HIGH-DENSITY



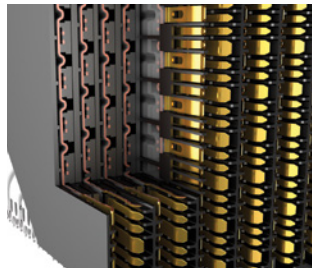
# EXAMAX® HIGH-SPEED BACKPLANE

- Meets industry specifications such as PCI Express®, Intel OPI and VPI, SAS, SATA, Fibre Channel, InfiniBand™ and Ethernet
- Exceeds OIF CEI-28G-LR specification for 28 Gbps standards
- 24 - 72 pair designs (4 and 6 pairs; 6, 8, 10 and 12 columns)
- Wafer design increases isolation for reduced crosstalk
- Press-fit tails provide a reliable electrical connection
- Cable assemblies available (EBCM/EBCF)

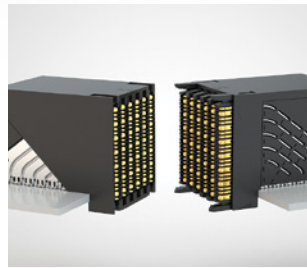
**EBTM/EBTF-RA**



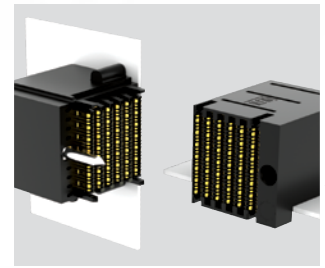
Two reliable points of contact



Staggered differential pair design with an embossed ground plane



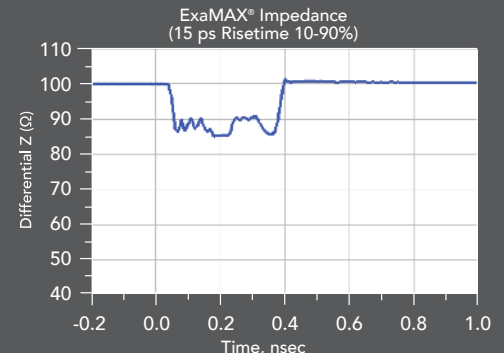
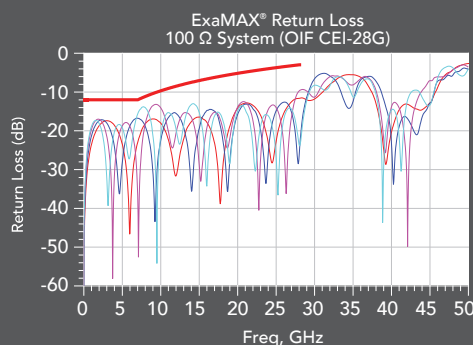
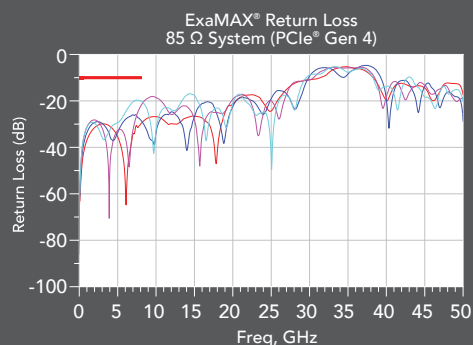
Coplanar available to bypass the midplane (EBTM-RA)



Direct-mate orthogonal (EBDM-RA) eliminates the midplane for a shorter signal path

## PERFORMANCE CHARTS

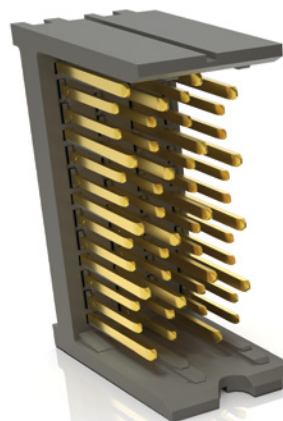
ExaMAX® is engineered for 92  $\Omega$  impedance to address both 85  $\Omega$  and 100  $\Omega$  applications



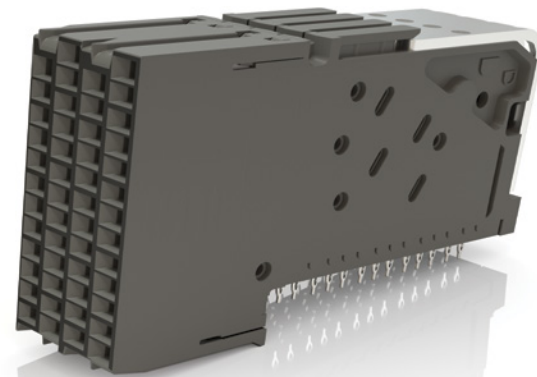
ExaMAX® is a trademark of AFCI

# XCEDE® HD HIGH-DENSITY BACKPLANE

- Small form factor and modular design provides significant space-savings and flexibility
- High-performance system
- Up to 84 differential pairs per linear inch
- 3, 4 and 6-pair designs on 4, 6 and 8 columns
- Integrated power, guidance, keying and side walls available
- 85  $\Omega$  and 100  $\Omega$  options
- Combine any configuration of modules to create one integrated receptacle (BSP Series); corresponding terminal modules are individually mounted to the backplane



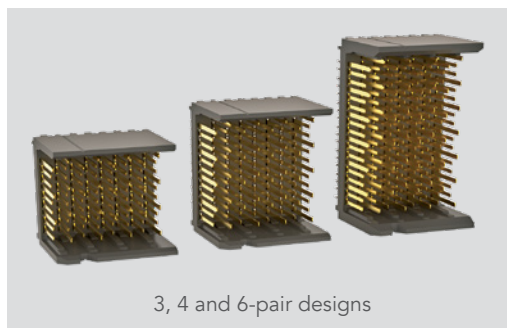
HDTM/HDTF



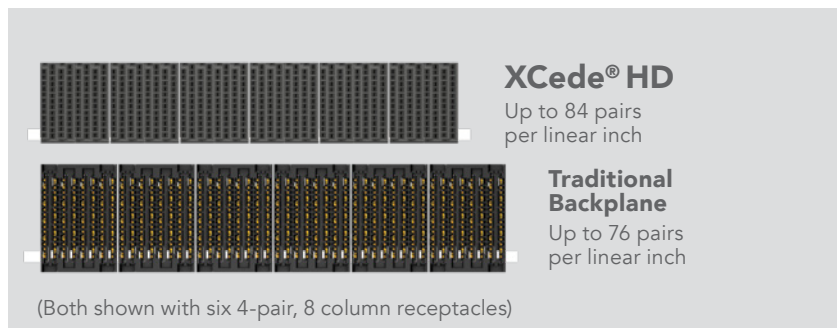
**Xcede HD**

**16**  
Gbps

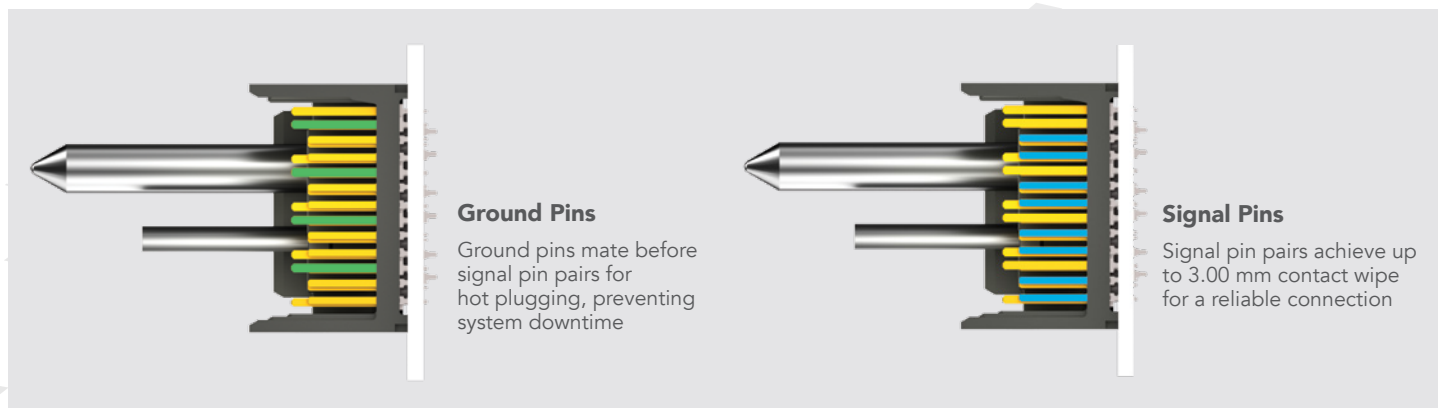
## SMALL FORM FACTOR



## DENSITY COMPARISON



## SIGNAL/GROUND PIN STAGING

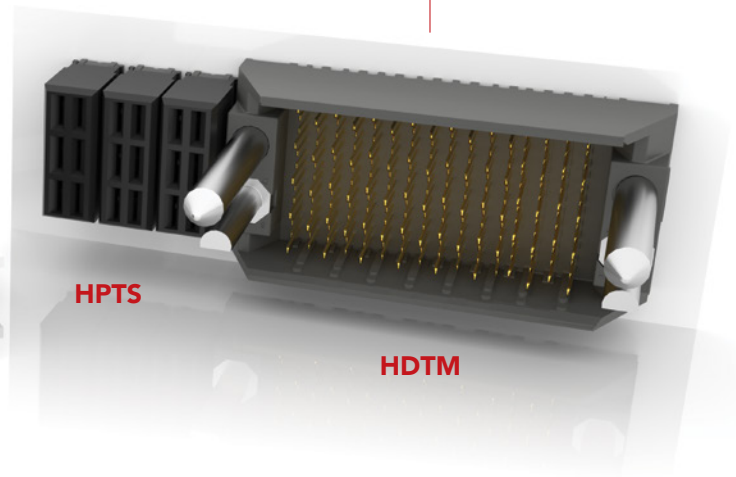
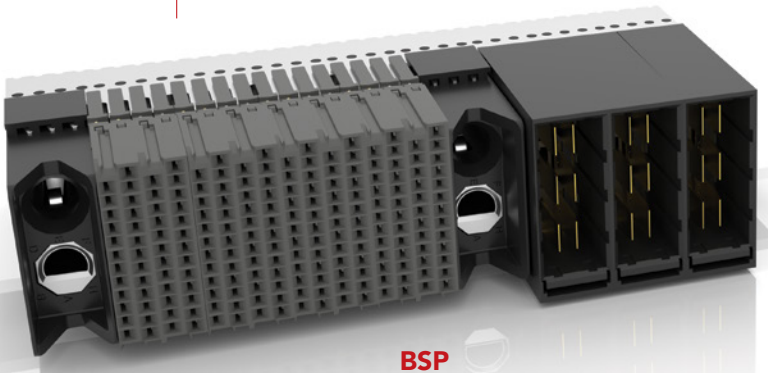


## MODULAR DESIGN

XCede® HD consists of signal, power and keying/guidance modules for incredible design flexibility. The modules can be customized in any configuration to meet specific application requirements. Contact [HSBP@samtec.com](mailto:HSBP@samtec.com) for more information about building a full XCede® HD solution.

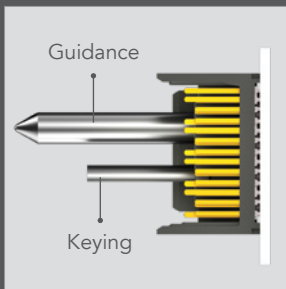
### How to build a full solution:

- ① Right-angle modules can be built into a single customizable BSP
- ② Build a BSP part by combining any number, in any configuration, of HDTFs, power and keying/guidance modules to create one receptacle
- ③ Header modules mount to the backplane individually, in any configuration of HDTM and HPTS Series

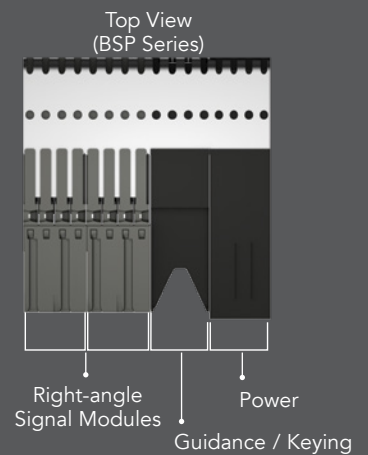
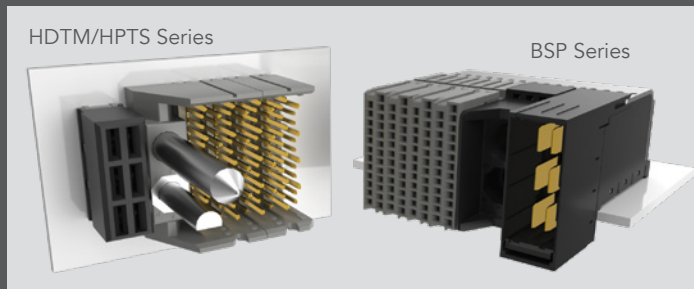


XCede® is a registered trademark of Amphenol Corporation.

### PRODUCT BREAKDOWN (BSP Custom Configuration Shown)



Side View  
(HDTM/HPTS Series)





## EXAMAX® BACKPLANE CABLE ASSEMBLIES

- Utilizes Samtec's Eye Speed® ultra low skew twinax cable technology for improved signal integrity, increased flexibility and routability
- Highly customizable with modular flexibility
- Reduce costs due to lower layer counts
- 30 and 34 AWG
- Multiple end options available

**ExaMAX®**

PAM4  
**112**  
Gbps



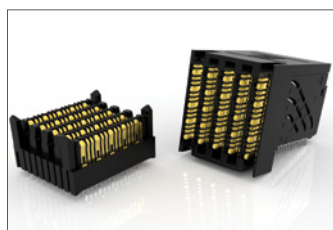
**EBCF**

**EBTM/EBCL**

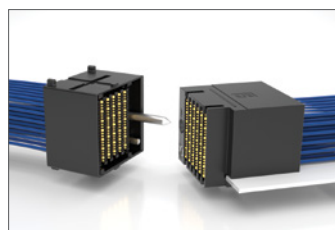
### DESIGN FLEXIBILITY



4 and 6 pairs;  
4-16 columns



Intermateable with all  
ExaMAX® connectors



Integrated guidance and  
keying options



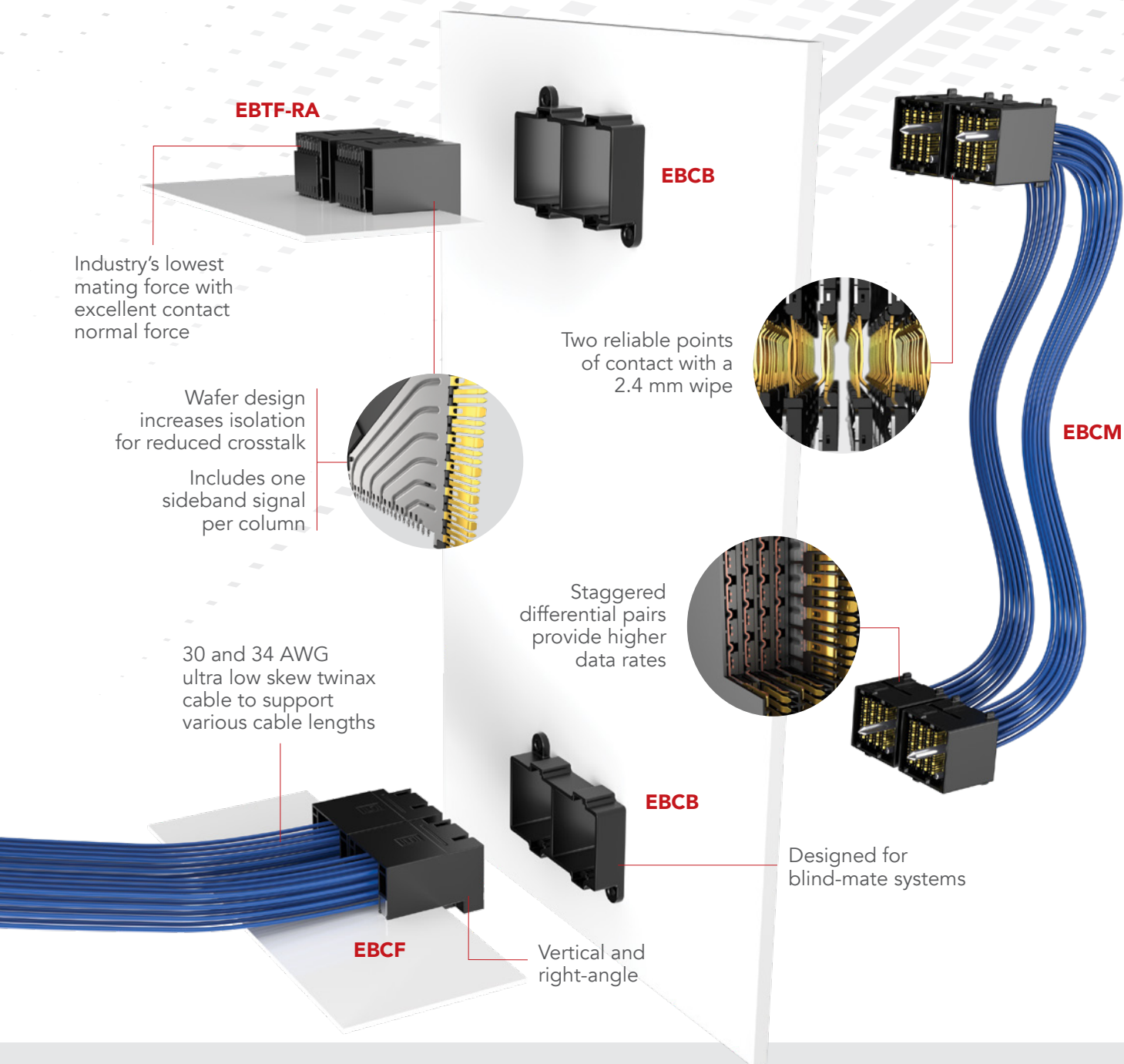
Cable-to-DMO  
(Direct Mate Orthogonal)

### HIGH-DENSITY APPLICATION



Increases architectural flexibility by overcoming the limitations of a traditional connector-to-connector backplane

[samtec.com/backplane](http://samtec.com/backplane)

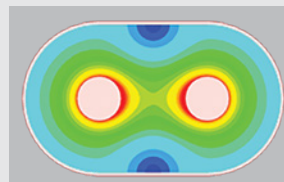


## ULTRA LOW SKEW TWINAX CABLE

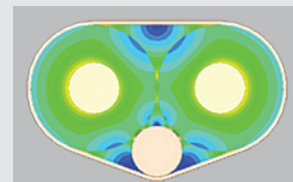
Samtec's Eye Speed® co-extruded twinax cable technology eliminates the performance limitations and inconsistencies of individually extruded dielectric twinax cabling, improving signal integrity, bandwidth and reach for high-performance system architectures.

- Tight coupling between signal conductors
- Improved bandwidth and reach
- Improved signal integrity and eye pattern opening

**EYE  
SPEED  
CABLE**



✓ **Good** design coupling with Samtec's co-extruded ultra low skew twinax



✗ **Bad** design coupling with individually extruded conductors & drain wire



**samtec**  
SUDDEN SERVICE®

UNITED STATES • NORTHERN CALIFORNIA • SOUTHERN CALIFORNIA • SOUTH AMERICA • UNITED KINGDOM  
GERMANY • FRANCE • ITALY • NORDIC/BALTIC • BENELUX • ISRAEL • INDIA • AUSTRALIA / NEW ZEALAND  
SINGAPORE • JAPAN • CHINA • TAIWAN • HONG KONG • KOREA

**[samtec.com/backplane](http://samtec.com/backplane)**