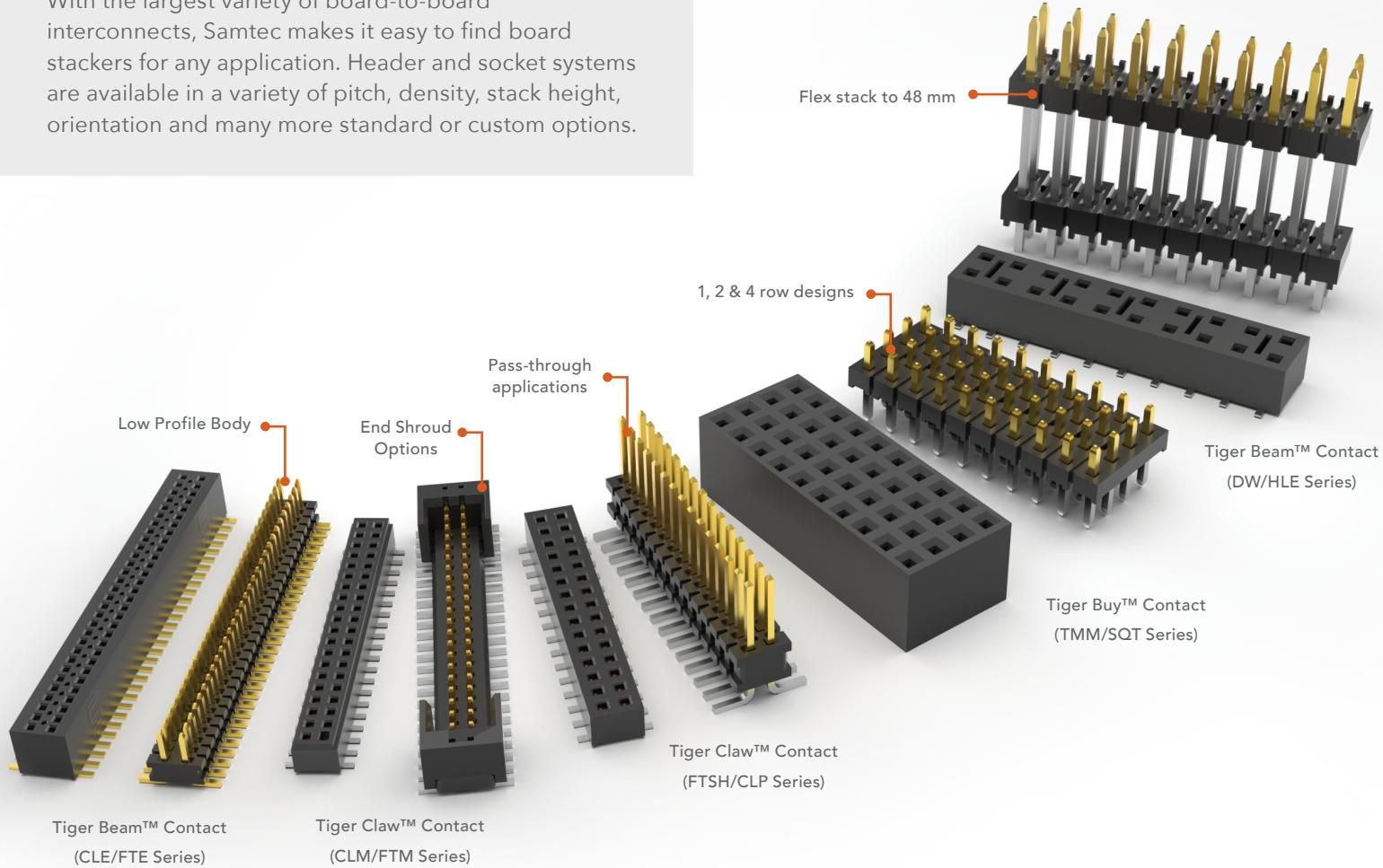


# FLEXIBLE STACKING

## APPLICATION DESIGN GUIDE

# FLEXIBLE STACKING

With the largest variety of board-to-board interconnects, Samtec makes it easy to find board stackers for any application. Header and socket systems are available in a variety of pitch, density, stack height, orientation and many more standard or custom options.



## INCREDIBLE FLEXIBILITY

- Post height: adjustable in .005" increments
- Body positions: adjustable in .005" increments
- Board stacking distance: 1.65 mm - 48.51 mm
- Number of pins: 2-300
- Number of rows: 1-6

## VARIETY OF PITCHES

- 0.80 mm
- 1.00 mm
- 1.27 mm
- 1.27 x 1.27 mm
- 1.27 x 2.54 mm
- 2.00 mm
- 2.54 mm

## BUILD IT YOURSELF

Check out Solutionator® to quickly build a mated set for your specific application. Visit [samtec.com/solutionator](http://samtec.com/solutionator)



## CUSTOMIZABLE

- Mix-and-match headers and sockets to find the right solution
- Quick and easy custom parts are available. Contact Samtec.

## VARIETY OF CONTACTS

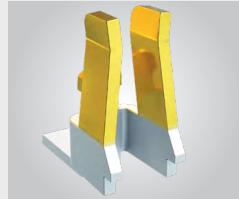
### TIGER<sup>TM</sup> EYE CONTACT

- High-reliability
- High mating cycles
- Multi-finger contact



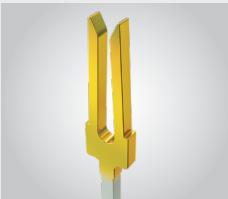
### TIGER<sup>TM</sup> CLAW CONTACT

- Pass-through
- Ultra-low profile
- Dual wipe contact



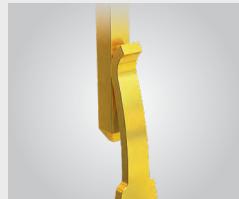
### TIGER<sup>TM</sup> BUY CONTACT

- High-retention
- Cost-effective
- Tuning fork contact

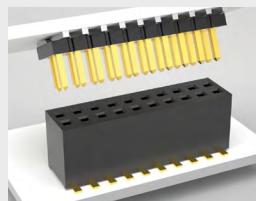


### TIGER<sup>TM</sup> BEAM CONTACT

- Best cost
- Reliable performance
- Post & beam contact

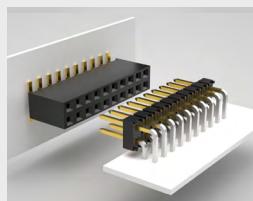


## VARIETY OF ORIENTATIONS/APPLICATIONS



### Standard

- Choice of contact system
- Single, double and triple row designs
- Largest variety



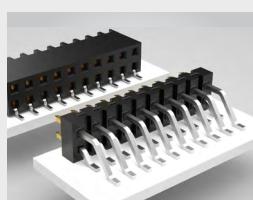
### Right-angle

- Design flexibility
- Tiger Claw<sup>TM</sup> & Tiger Buy<sup>TM</sup> contacts
- Through-hole, surface mount



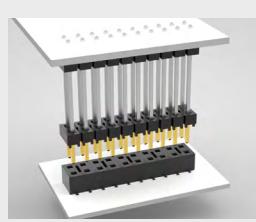
### Low Profile

- Down to 1.65 mm stack height
- Tiger Claw<sup>TM</sup> contacts
- Space saving



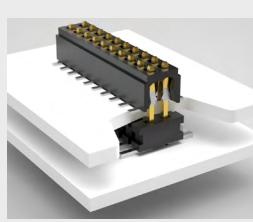
### Coplanar

- 1-4 row designs
- Surface mount, through-hole or mixed technology
- Tiger Claw<sup>TM</sup> & Tiger Beam<sup>TM</sup> contacts



### Elevated

- Up to 48.26 mm stack height
- Design flexibility
- Clearance, air flow



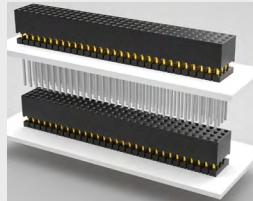
### Bottom Entry

- Tiger Claw<sup>TM</sup> contacts
- Access to components when mated
- Space savings



### Pass-through

- Connect three or more boards
- Tiger Claw<sup>TM</sup> and Tiger Beam<sup>TM</sup> contacts
- Surface mount or offset through-hole



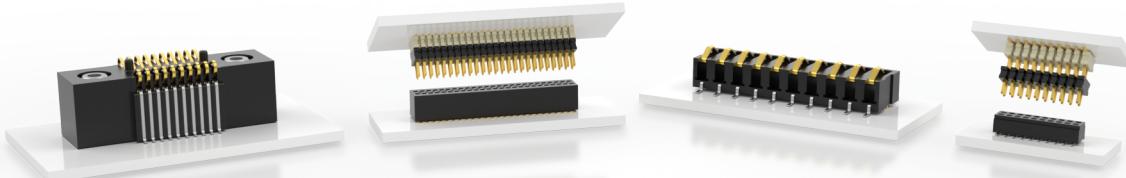
### Self-nesting

- Tiger Buy<sup>TM</sup> contacts
- Press-fit or through-hole tails
- PC/104-Plus<sup>TM</sup> embedded applications

# BOARD STACKING REFERENCE

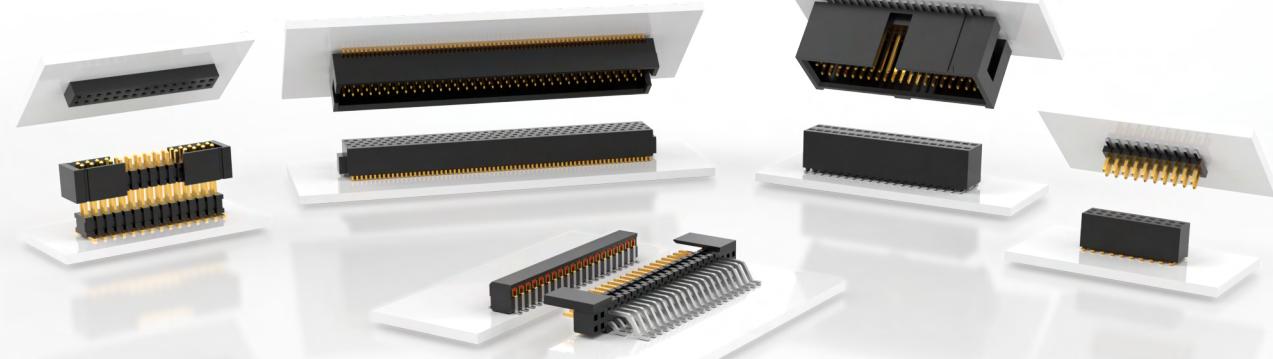
Focused/most popular series in charts. For all flexible stacking solutions visit [samtec.com/connectors](http://samtec.com/connectors)

## ONE-PIECE, 0.80 mm & 1.00 mm PITCH



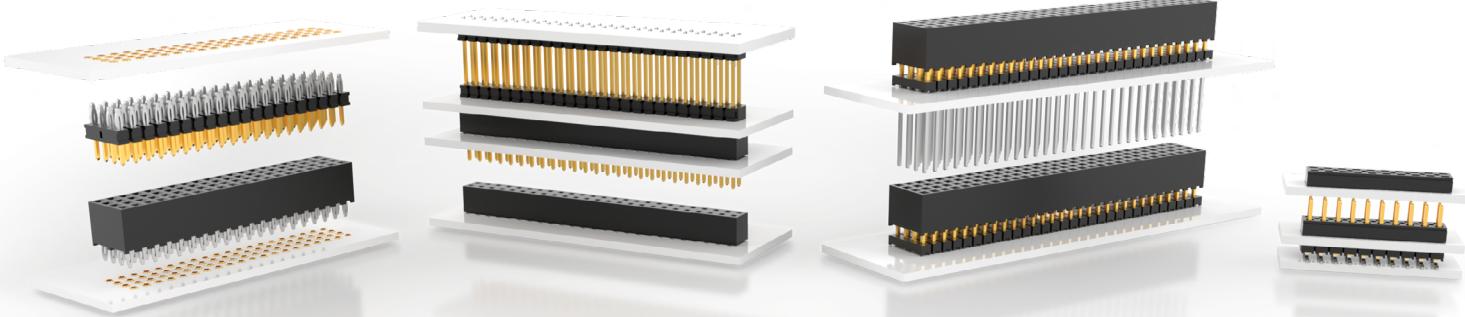
Series	FSI	SEI	SIB	CLE	FTE	CLM	FTMH/FTM	MLE	MW		
<b>PITCH</b>	1.00 mm		2.54 mm	0.80 mm		1.00 mm					
<b>ORIENTATION</b>	V				V & RA	V	V & RA	V			
<b>BOARD STACKING (mm)</b>	min	3	1.65	3.8	5	5	3.48		4.57		
	max	10			9.14		8.43	5.11	4.62		
<b>CONTACT SYSTEM</b>					Tiger Beam™	Tiger Claw™	Tiger Beam™				
<b>MATES</b>	One-Piece				FTE, AW	CLE	FTM, FTMH, MW	CLM, MLE	FTM, FTMH, MW		
							CLM, MLE				

## 1.27 mm PITCH HEADERS & SOCKETS



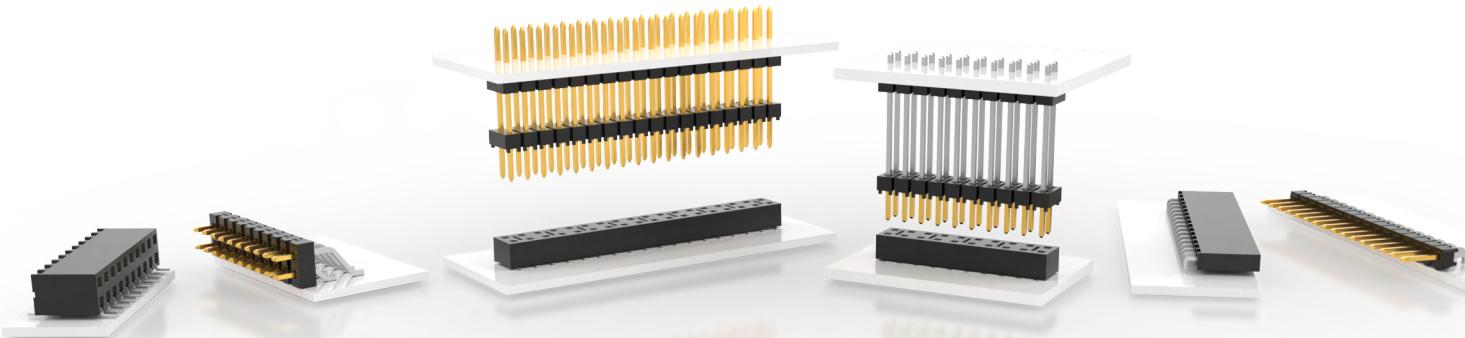
Series	CLP	FLE	FTS	FTSH	FW	SOLC	TOLC	DWM/HDWM	FTR	RSM	SLM
<b>PITCH</b>	1.27 mm x 1.27 mm							1.27 mm x 2.54 mm			
<b>ORIENTATION</b>	V & RA		V		V & RA		V				
<b>BOARD STACKING (mm)</b>	min	3.53	5.82	3.53	5.18	7.72	6.35		9.65	9.78	
	max	17.75	19.15	5.82	7.49	19.15	12.00		22.99	14.73	19.69
<b>CONTACT SYSTEM</b>	Tiger Claw™	Tiger Beam™					Tiger Buy™				
<b>MATES</b>	FTSH, FTS, FW		CLP, FLE				TOLC	SOLC	SMS, SLM, RSM		HTMS, TMS, MTMS, DWM, TML, ZML, TMS

## 2.00 mm PITCH HEADERS & SOCKETS



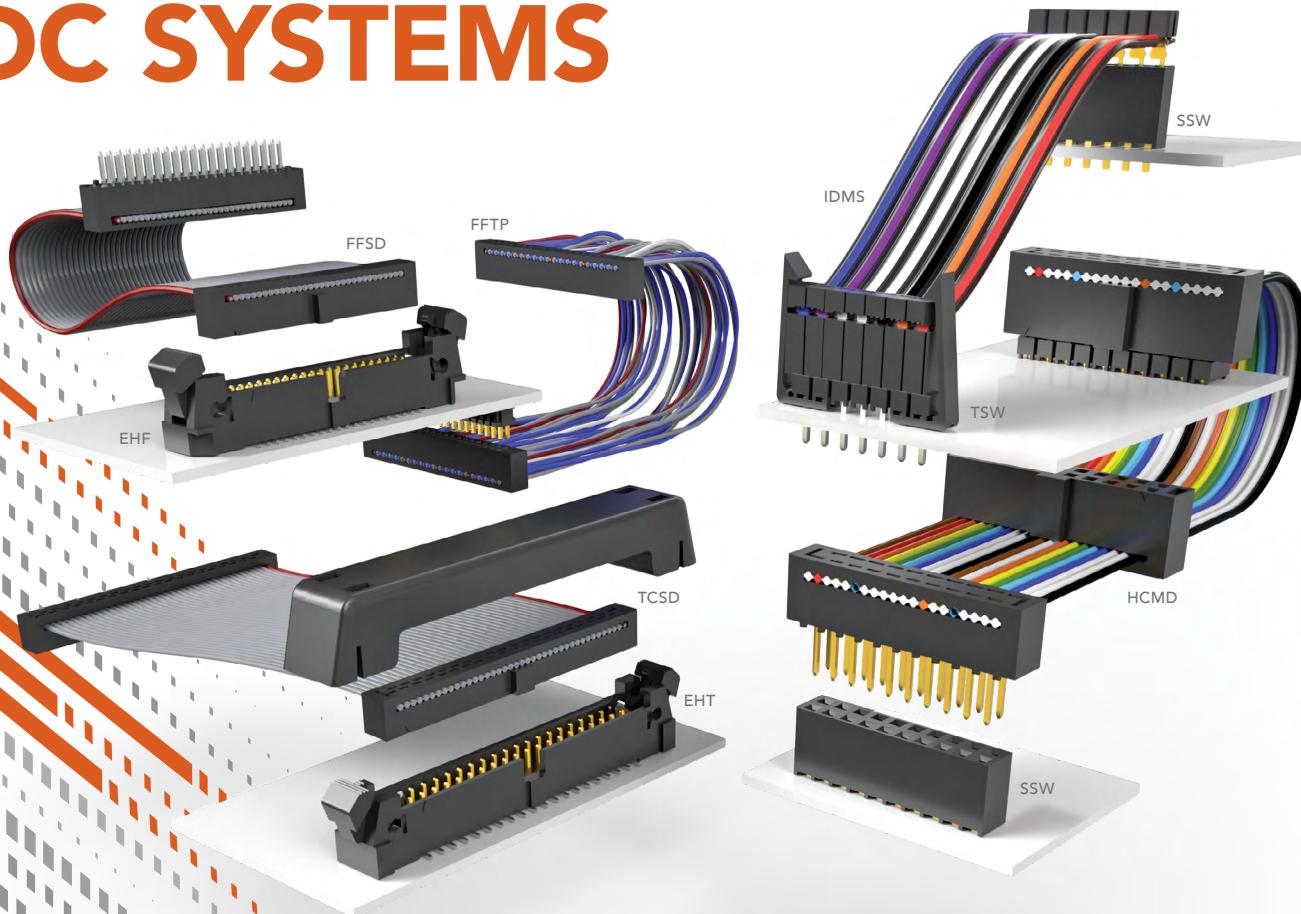
SERIES		MMT	TMM/ MTMM	TMMH	TW	ZLTMM	CLT	ESQT/ -368	MMS	SMM	SQT	SQW	TLE
ORIENTATION		RA	V & RA		V			V & RA	V	V & RA	V		
TERMINATION		SMT & MT	T/H & SMT			T/H	T/H & SMT	T/H	T/H & SMT	SMT	T/H	T/H & SMT	SMT
BOARD STACKING (mm)	min	2	3.63	4.14	7.49	7.62	3.63	9.37	5.94	6.07	7.85		6.99
	max	4	18.87	22.07	43.31	13.34	4.98	43.31	19.81	17.78	29.59		17.53
CONTACT SYSTEM						Tiger Claw™	Tiger Buy™	Tiger Claw™	Tiger Eye™	Tiger Buy™		Tiger Beam™	
MATES		CLT, SQT, SQW, ESQT, TLE, SMM, MMS				SQT, SQW, ESQT, SMM	TMM, TMMH, MTMM, MMT, TW, LTMM, ZLTMM, ESQT, PTT, TSH, TMMS, PTHF	TMMH, TMM, MTMM, MMT, TW, LTMM, ZLTMM, ESQT, PTT, TSH	TMMH, TMM, MTMM, MMT, TW, LTMM, ZLTMM, PTT	TMMH, TMM, MTMM, MMT, TW, LTMM, ZLTMM, PTT	TMMH, TMM, MTMM, MMT, TW, LTMM, ZLTMM, PTT	TMMH, TMM, MTMM, MMT, TW, LTMM, ZLTMM, PTT	TMMH, TMM, MTMM, MMT, TW, LTMM, ZLTMM, PTT

## 2.54 mm PITCH HEADERS & SOCKETS



SERIES		DW, EW, ZW	HW	MTSW/ HMTSW	TLW/ MTLW	TSM	TSW/ HTSW	BCS	ESW, ESQ	HLE	SSM	SSQ	SSW
ORIENTATION		V		V & RA				V & RA	V		V & RA		
TERMINATION		T/H	T/H & SMT	T/H		SMT & MT	T/H			T/H & SMT	SMT	T/H	T/H & SMT
BOARD STACKING (mm)	min	13.59	10.03	7.24	6.1	7.47	7.87	9.02	13.59	7.47	11.18	10.03	
	max	48.51	30.73	46.36	20.96	14.48	35.69	18.92	48.51	26.16	30.1	38.35	
CONTACT SYSTEM								Tiger Claw™	Tiger Buy™	Tiger Beam™	Tiger Claw™	Tiger Buy™	
MATES		SSW, SSQ, ESW, ESQ, CES, SLW, BSW, BCS, SSM, HLE, PHF		SSW, SSQ, ESW, ESQ, BCS, BSW, CES, SLW, HLE, SSM	BSW, CES, SLW, HLE	SSW, SSQ, SSM, BSW, ESW, ESQ, BCS, BSW, CES, SLW	SSW, SSQ, SSM, HMTSW, TSS, ZSS, BCS, DW, EW, ZW, HW, TSM, MTLW, PHT	TSW, MTSW, HTSW, EW, MTLW, TSS, ZSS, TSM, DW, ZW, TSM, MTLW, HTSS	TSW, MTSW, HTSW, EW, MTLW, TSS, ZSS, TSM, MTLW, HTSS	TSW, MTSW, HTSW, DW, EW, ZW, TSM, MTLW, TSS, BST, HTSS, TLW, MTI W	TSW, MTSW, HTSW, DW, EW, ZW, TSS, ZSS, TSM, TSS, HTSS	TSW, MTSW, HTSW, MTLW, DW, EW, ZW, TSS, TLW, HW	

# IDC SYSTEMS

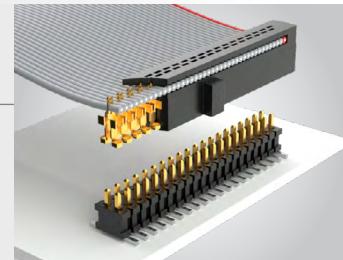


## 1.27 mm & 2.00 mm PITCH IDC CABLE SYSTEMS

TIGER  
EYE™  
IDC

- Exceptionally low-profile design
- Choice of socket and plug terminations
- Single or double ended
- Twisted pair or flat cable

- Tiger Eye™ board level mates
- Mating shrouded and ejector terminal strips
- Variety of options including rugged strain relief, polarization and standard wiring configurations



HIGH-RELIABILITY, HIGH CYCLE  
TIGER EYE™ IDC CONTACTS

## FLEXIBLE FLAT RIBBON IDC SYSTEMS

- Low profile with no bulky side locks
- Choice of dual beam socket or plug terminations

## MOLDED-TO-POSITION IDC ASSEMBLIES

- Low profile and skinny side locks
- Plugs with (0.64 mm) .025" square tail headers

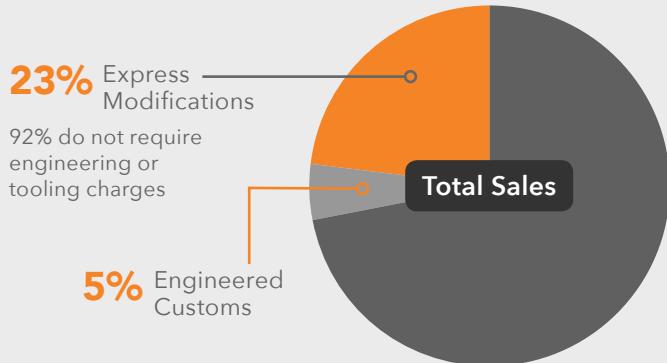
### IDC CABLE ASSEMBLIES & HEADERS

SERIES	IDMX/IDSX	HCMX/HCSX	TCSD/TCMD	FFSD/FFMD	FFTP/FMTP
Pitch	2.54 mm		2.00 mm	1.27 mm	
Cable	28 AWG Color Coded (standard) or Gray (optional)		28 AWG Gray	30 AWG Gray	30 AWG Twisted Pair
Headers	HTST/TST/ZST/EJH	TST/ZST/EJH	STMM/ETMM/EHT	SHF/ESHF/EHF	SHF/EHF
Contacts	Dual Beam Contacts			Tiger Eye™ Contacts	
Notes	Low Profile & Slim Body	Low Profile		Strain Relief Available	

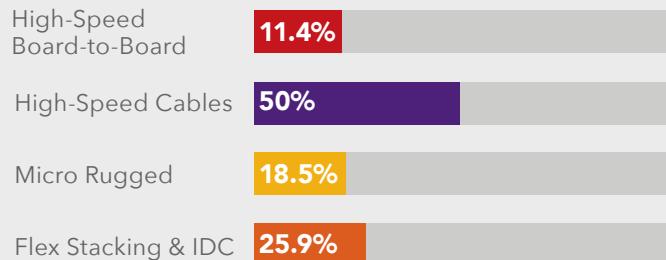
# MODIFIED & CUSTOM SOLUTIONS

## WILLINGNESS, SUPPORT & EXPERTISE

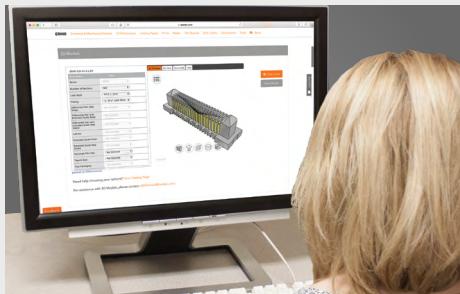
Customs and Modifications make up about 28% of Samtec's total sales.



A substantial percentage of Samtec's product segments are custom.



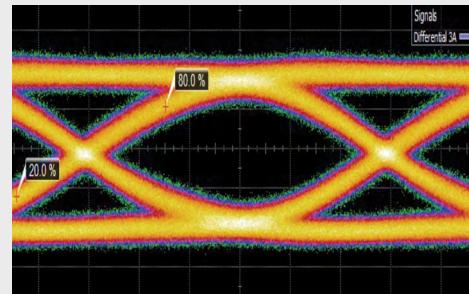
## INDUSTRY LEADING CUSTOMER SERVICE



## FLEXIBLE IN-HOUSE MANUFACTURING

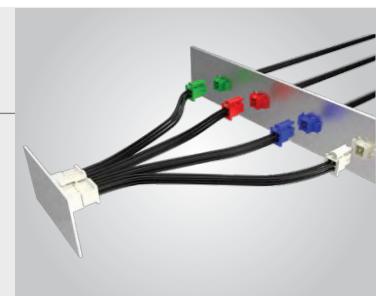


## SIGNAL INTEGRITY EXPERTISE



## FLEXIBLE CAPABILITIES

- Full engineering, design and prototype support
- Design, simulation and processing assistance
- Quotes and samples turned around in 24 hours
- Flexible, quick-turn manufacturing
- Dedicated Application Specific Product engineers and technicians
- Modified or custom options for board level connectors and cable assemblies including: contacts, bodies, stamping, plating, wiring, molding, ruggedizing features and much more
- Contact the Application Specific Products Group at [asp@samtec.com](mailto:asp@samtec.com) for express modifications or [customasp@samtec.com](mailto:customasp@samtec.com) for engineered customs.



## ENGINEERED CUSTOM

Multi-power staging, power/signal combo, header/socket combo & custom body

## EXPRESS MODIFICATION

2.54 mm pitch Mini Mate® discrete wire assembly with custom color coded breakout



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

JUNE 2018