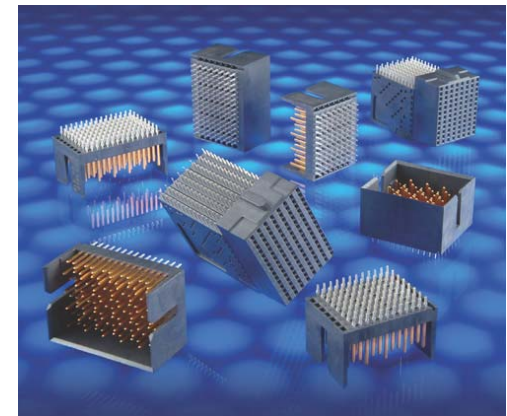
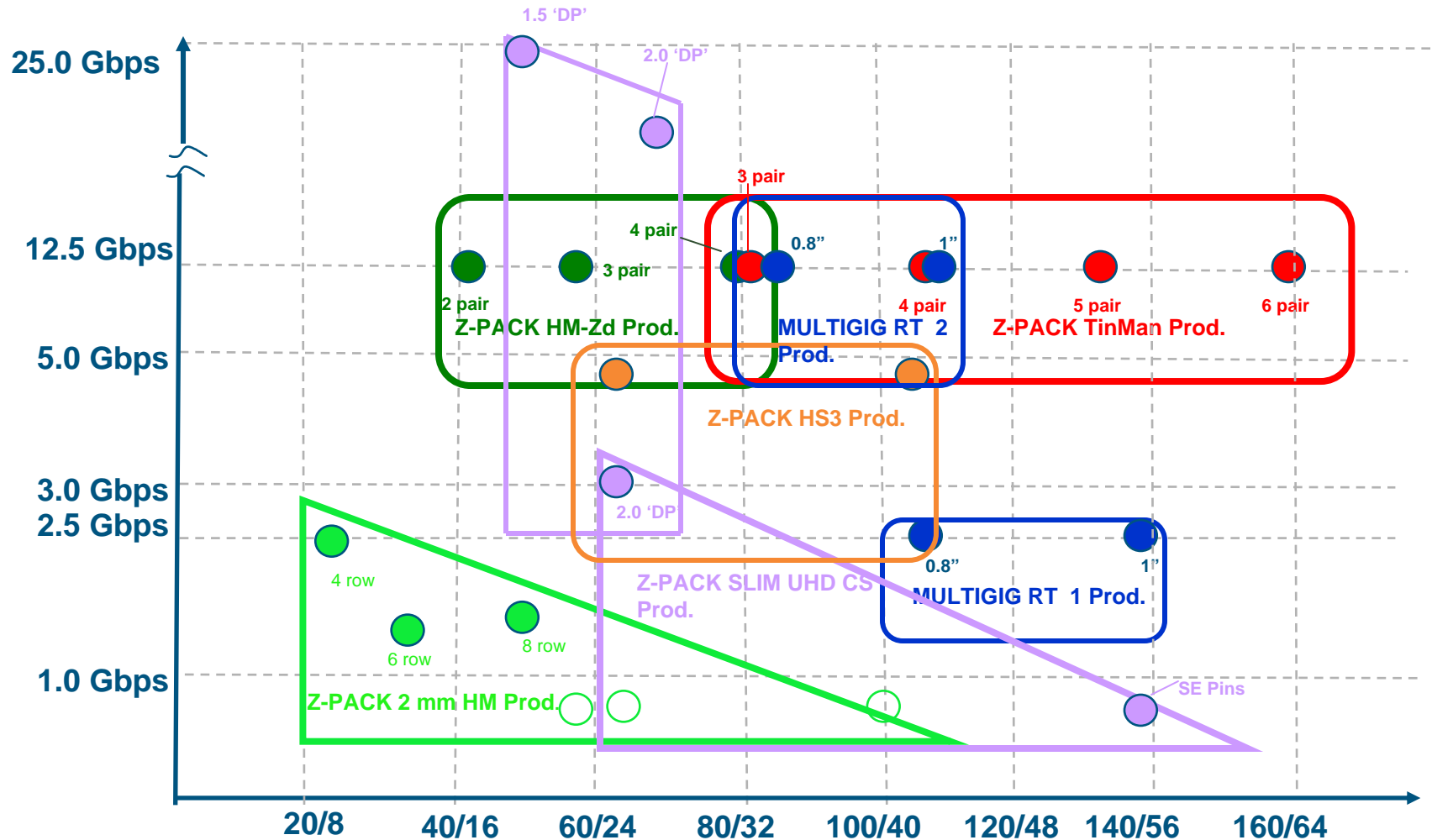


# Z-PACK TinMan Connector System

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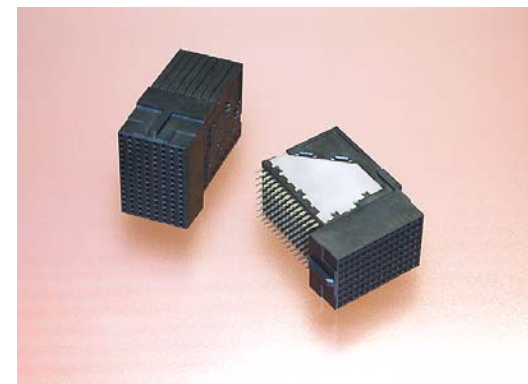
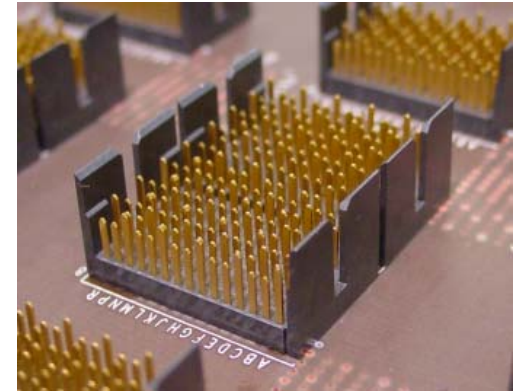


# Backplane Connectors Roadmap



# Z-PACK TinMan Connector System

- Exceptional differential performance, 12+ Gb/s
- High density
- Low cost
- Bellcore/Telcordia compliant
- Repairable pins on backplane
- Fully compliant with all “HM” compliant guide and power modules

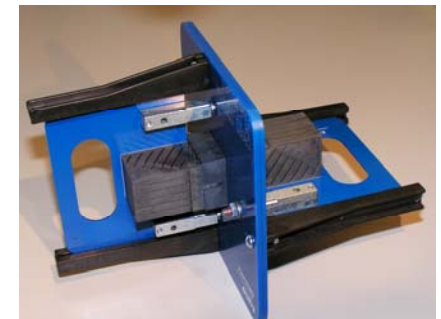
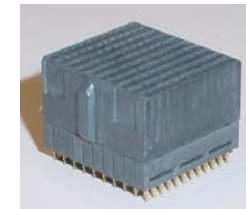
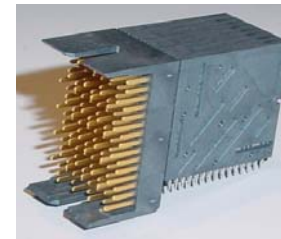
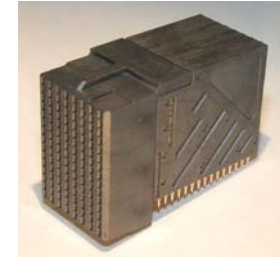
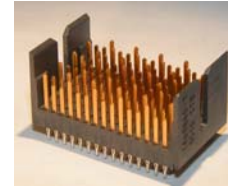


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# Z-PACK TinMan Connector System Connector Configurations

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- Traditional backplane configuration
  - Vertical header to R/A receptacle
- Co-planar applications
  - R/A header to R/A receptacle
- Mezzanine applications
  - Vertical header to vertical receptacle
- Midplane cross-connect (“orthogonal”) applications



# Z-PACK TinMan Connector System

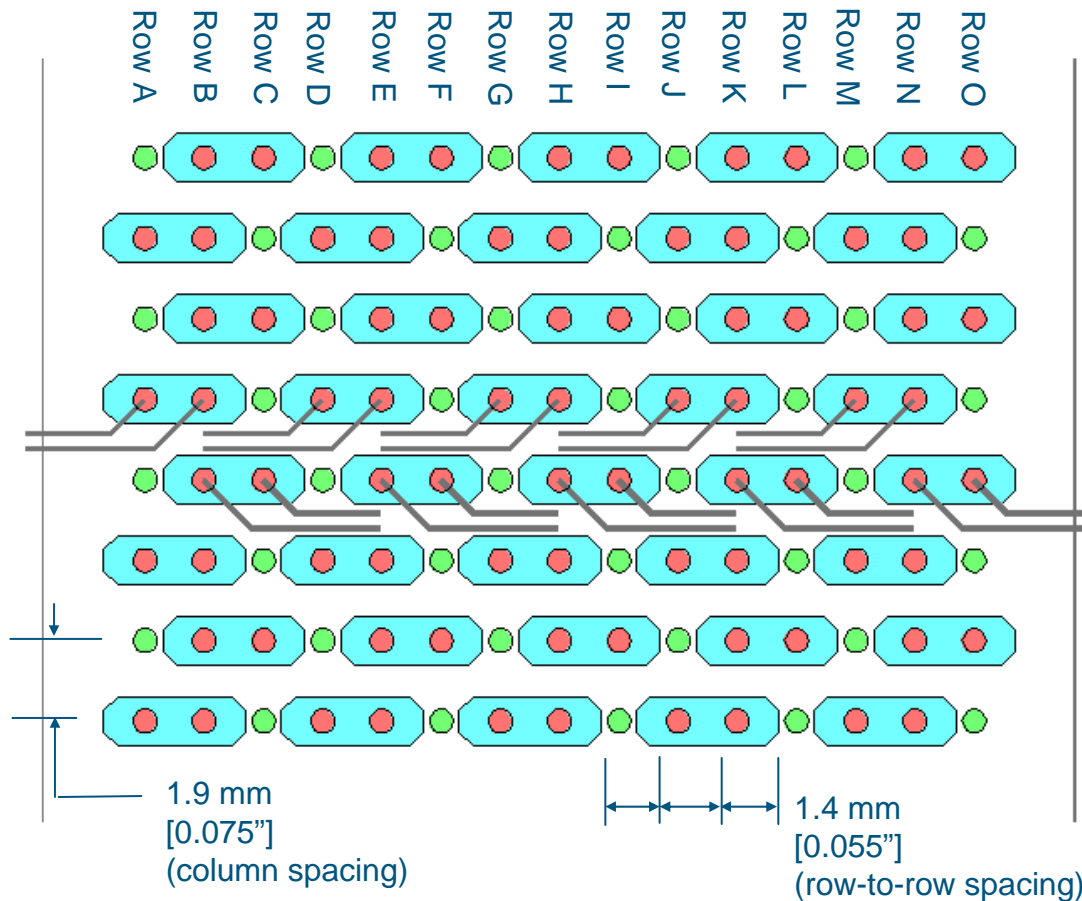
## Density Options

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<b>Pairs per Column</b>	<b>Part Envelope mm [in]</b>	<b>Density Pairs/cm [Pairs/in]</b>	<b>Column Pitch mm [in]</b>
3 Pair	16.0 mm [0.630"]	15 /cm [40 /in]	1.9 mm [0.075"]
4 Pair	20.2 mm [0.795"]	21 /cm [53 /in]	1.9 mm [0.075"]
5 Pair	24.4 mm [0.961"]	26 /cm [66 /in]	1.9 mm [0.075"]
6 Pair	28.6 mm [1.126"]	31/cm [80 /in]	1.9 mm [0.075"]

- Parts available with and without end walls
- All parts 12+ Gbps capable

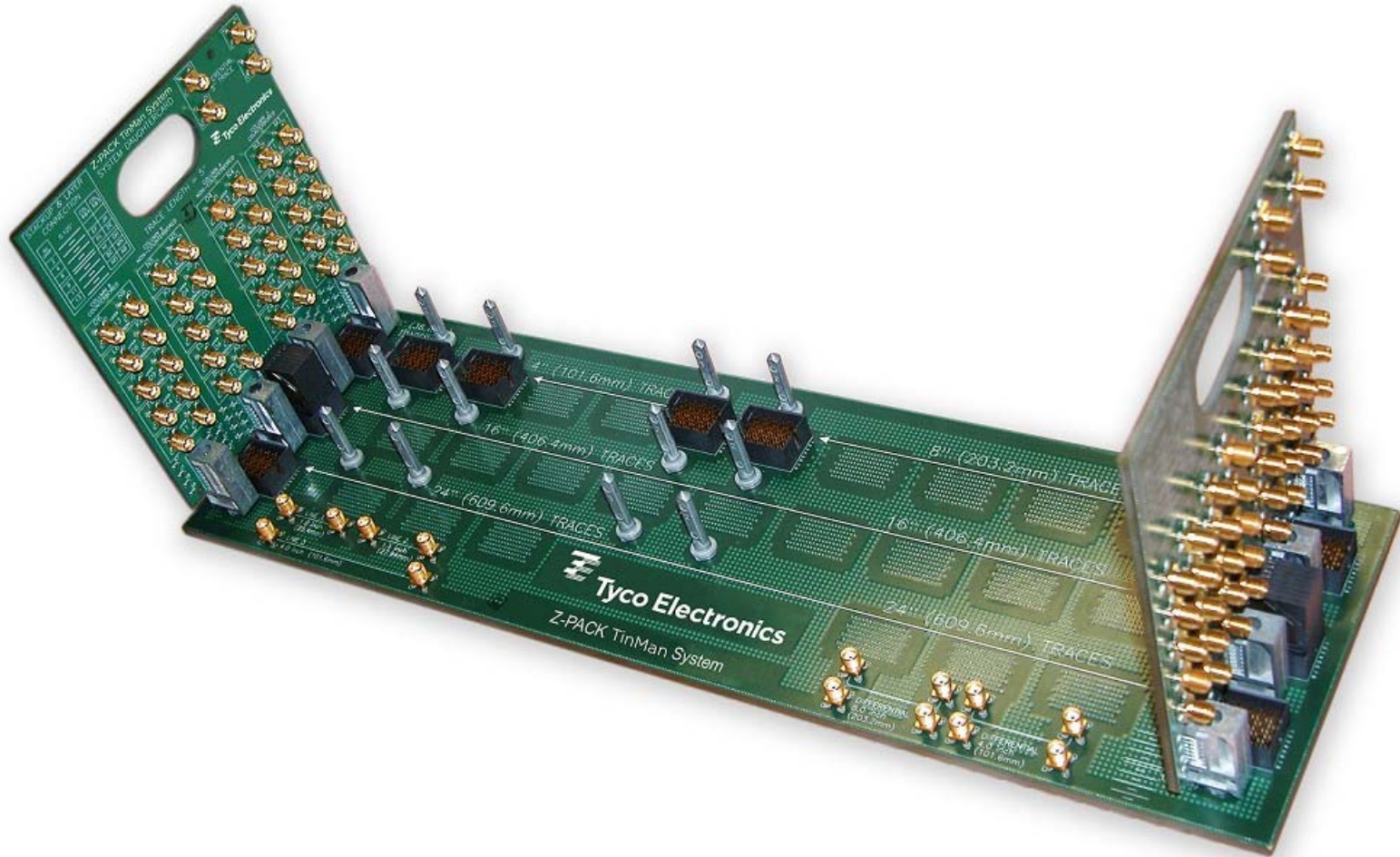
# Z-PACK TinMan Connector System Footprint Via Pattern



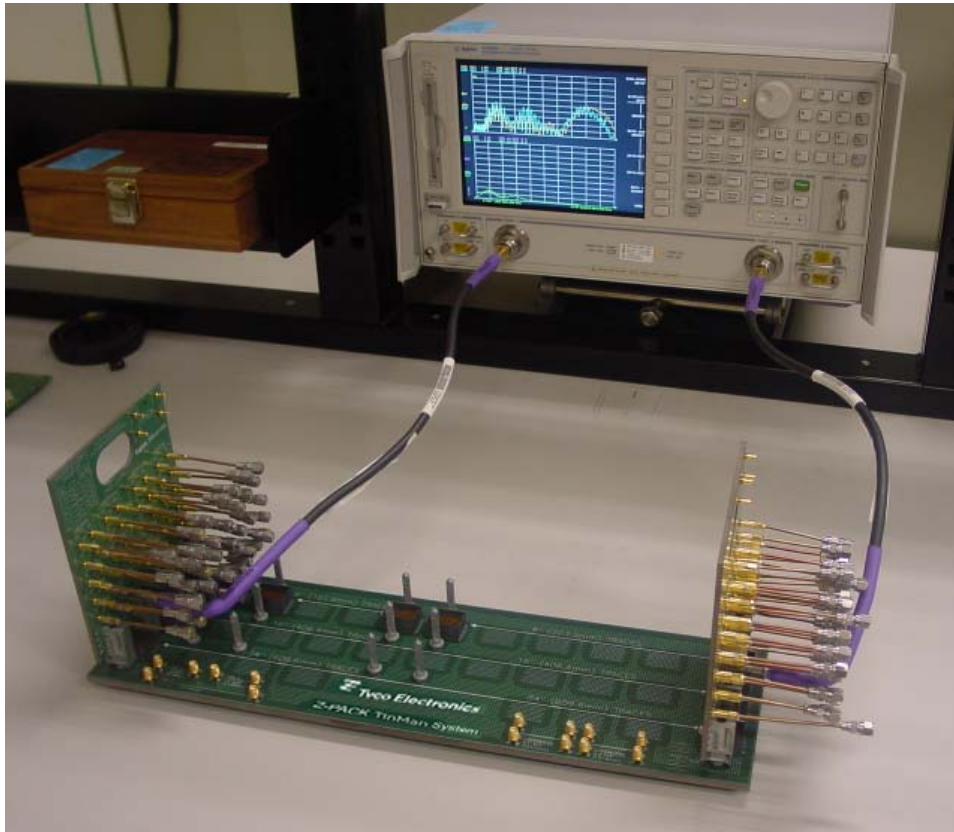
- Supports 0.2 mm [0.008"] traces
- Flipped columns reduce via-to-via noise
- 0.46 mm [0.018"] finished diameter via
- Straight route out
- 5 layer breakout (5-pair)
- Same BP & DC footprint
- Routing guide available
- Allegro parts available for some configurations



# Z-PACK TinMan Connector System System Evaluation Kit



# Z-PACK TinMan Connector System System Evaluation Kit

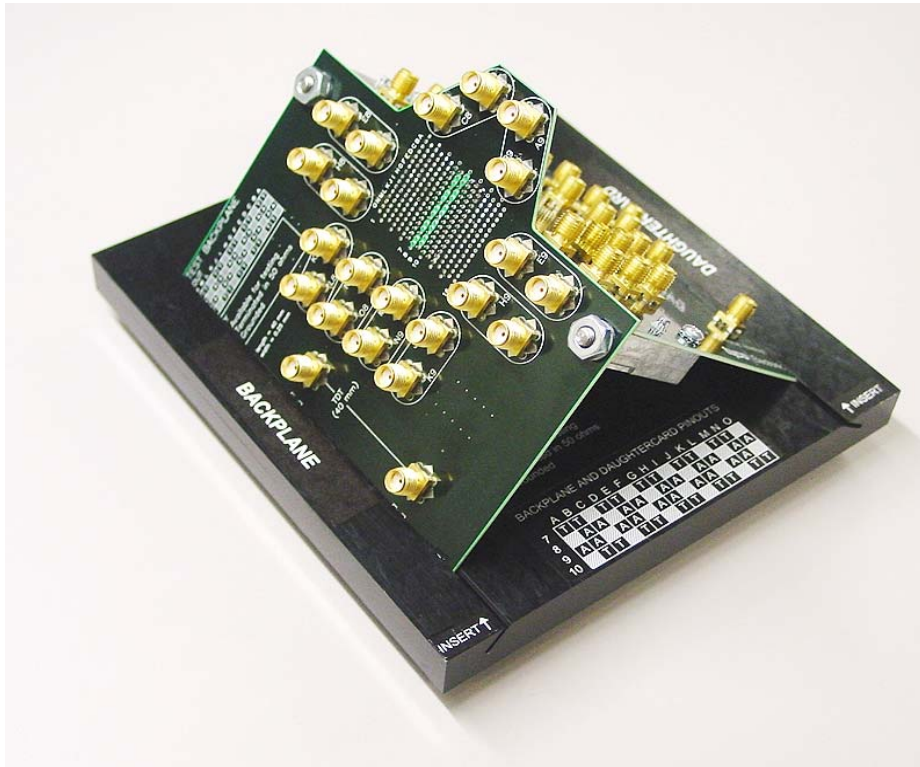


- Provides data showing the connector's performance in a typical system environment
- 2 Daughtercards
  - 3.18 mm [0.125"] thickness
  - Nelco 4000-6 material
  - 127 mm [5.0"] trace length
  - 0.13 mm [0.005"] trace width
- Backplane
  - 5.08 mm [0.200"] thickness
  - Nelco 4000-13 material
  - Various trace lengths
  - 0.18 mm [0.007"] trace width
- Links with and without counterboring
- Available for loan

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# Z-PACK TinMan Connector System

## *Connector-Only Evaluation Kit*



- Same test boards used for all tests
- Provide “connector only” data (minimal footprint)
- 1.5 mm [0.060”] board thickness
- Bottom layer via connect
- Short traces (40 mm [1.575”])
- Available for loan
- Following data tested using
  - TDS8000 Digital Sampling Oscilloscope
  - Agilent E8364B PNA Analyzer

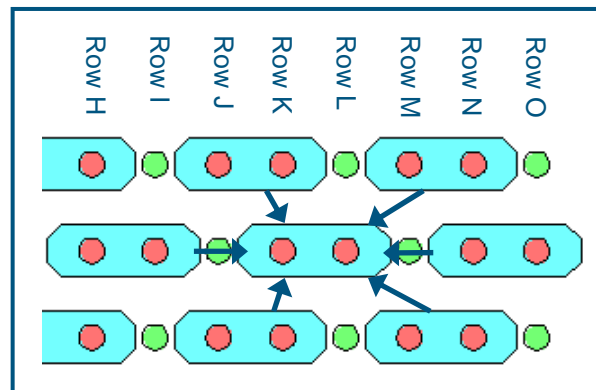
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# Z-PACK TinMan Connector System

## Worst-case NEXT/FEXT, Worst-case Pinout

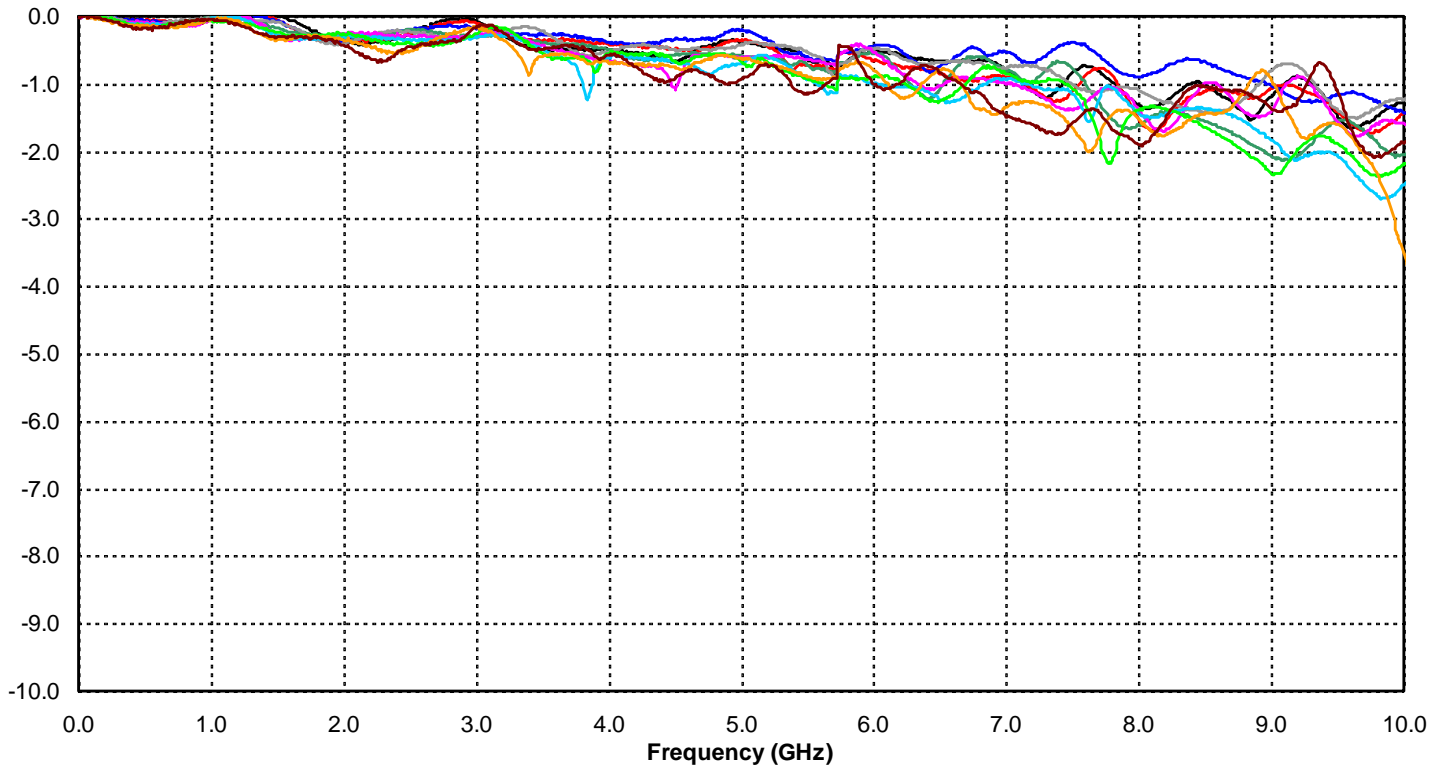
Pair	NEXT	FEXT
AB9	1.1%	0.5%
BC8	2.5%	1.0%
DE9	2.9%	1.1%
EF8	2.7%	1.1%
GH9	2.7%	1.1%
HI8	2.8%	1.2%
JK9	2.7%	1.0%
KL8	2.6%	1.1%
MN9	2.1%	0.9%
NO8	0.9%	0.5%



- TEST DATA
- Single mated 5-pair 1.9 mm column pitch connector
- Vertical header
- R/A receptacle
- 50 ps (20-80%) edge rate
- Vertical header driven far end crosstalk
- Includes two 1.5 mm [0.060"] vias to bottom layer traces
- Asynchronous sum of peaks from each aggressor
- Percentage is total noise divided by differential swing (A-B)

# Z-PACK TinMan Connector System Differential Insertion Loss

Z-PACK TinMan 5pr 1.9mm VHdrR1-RARcptR4



- TEST DATA
- Single mated 5-pair 1.9 mm column pitch connector
- Vertical header
- R/A receptacle
- Includes two 1.5 mm [0.060"] vias to bottom layer traces

— Hdr A9B9 -> Rcpt A9B9 Mag dB (SDD21)	— Hdr B8C8 -> Rcpt B8C8 Mag dB (SDD21)
— Hdr D9E9 -> Rcpt D9E9 Mag dB (SDD21)	— Hdr E8F8 -> Rcpt E8F8 Mag dB (SDD21)
— Hdr G9H9 -> Rcpt G9H9 Mag dB (SDD21)	— Hdr H8I8 -> Rcpt H8I8 Mag dB (SDD21)
— Hdr J9K9 -> Rcpt J9K9 Mag dB (SDD21)	— Hdr K8L8 -> Rcpt K8L8 Mag dB (SDD21)
— Hdr M9N9 -> Rcpt M9N9 Mag dB (SDD21)	— Hdr N8O8 -> Rcpt N8O8 Mag dB (SDD21)



THANK YOU

June 4, 2008