

3M™ MetPak™ HSHM Press-Fit B19 Connectors

Legacy VERSAmodule Eurocard (VME) and CompactPCI (cPCI) systems cannot support newer high speed serial I/O protocols such as PCI Express or RapidIO without a forklift upgrade to the backplane. Standards allow faster speeds, but current high speed connectors are not backward compatible with 5 row 2 mm hard metric connectors on legacy VME64x with VITA31 and PICMG 2.16 backplanes.

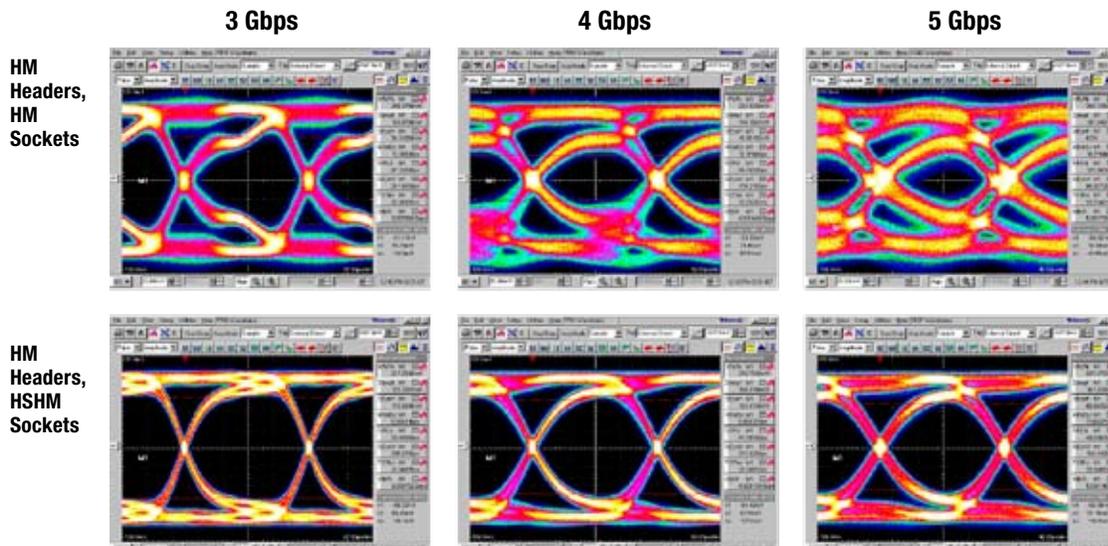
What if you could supercharge legacy VME and cPCI backplanes to 5 Gbps without disruptive and expensive backplane redesign and a forklift chassis upgrade? 3M™ MetPak™ High Speed Hard Metric (HSHM) Press-Fit B19 Connectors are designed to resolve this problem and provide a cost-effective upgrade to higher speed. With speeds up to 5 Gbps, 3M MetPak HSHM B19 fully shielded connector mates with 2 mm 5 row cPCI / hard metric headers; connectors P0 on VME64x with VITA31 and P3 on cPCI with PICMG 2.16. Full pin-to-pin compatibility can be maintained with existing VME and cPCI backplanes. A performance improvement up to 3X can be obtained by using daughter cards with MetPak HSHM B19 sockets mated to standard 5 row 2 mm hard metric headers.



3M™ MetPak™ HSHM Press-Fit Socket



3M™ MetPak™ HSHM Press-Fit Header



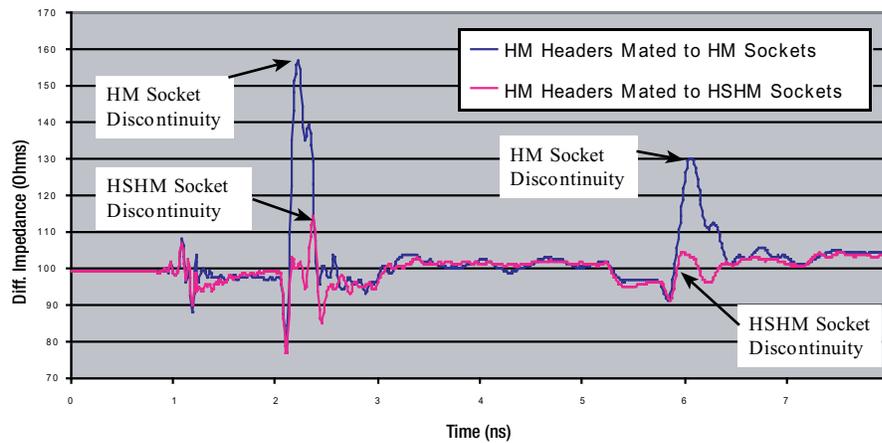
- Typically HM connectors are not used in applications above 1 Gbps.
- HM headers mated to HSHM sockets provide tremendous improvement in eye opening and jitter up to at least 5 Gbps.

3M™ MetPak™ HSHM Press-Fit B19 Connectors provide:

- Data rates up to 5 Gbps
- Low crosstalk at high frequencies
- True signal density: 5 row 63 mated pairs per linear inch
- 50/100 ohm (single-ended / differential) impedance
- Selective shielding in rows and/or columns
- Industry standard format for hard metric (IEC 61076-4-101)
- Dual beam contact construction for high reliability



Impedance TDR Profile



Crosstalk

NEAR END Crosstalk

Row	Aggressor Pair	Victim Pair
E	S +	S +
D	S -	S -
C	G	G
B	S +	S +
A	S -	S -

Risetime	35 ps	100 ps	200 ps	300 ps
HM-HM	5.0%	4.4%	3.5%	2.9%
HM-HSHM	3.3%	2.5%	1.7%	1.2%
Improvement	34%	43%	51%	59%

- Signal pattern assumes two differential pairs per column with middle row grounded.
- Crosstalk to neighboring pair is cut nearly in half even at rise times as fast as 100 ps.
- Crosstalk to pairs on opposite side of ground row is negligible.

Header Ordering Information (TS2220)

HSHM - H095BX - 5CPX - XXXXX (rows F and Z not loaded)

<p>High Speed Option: 4 = Coaxial, column differential and stripline (75 Ω) applications 5 = Row differential applications</p> <p>Tail Length: 1 = 4.4 mm pin and 3.5 mm shield 2 = 2 mm pin and 2 mm shield</p>	<p>Plating μm [μin]: TG30 = 0.76 [30] Min. Au Contact Area 2.54 [100] Min. SnPb Terminal Area 1.27 [50] Min. Ni All over</p> <p>TR40B = 0.127 [5] Min. Hard Au Contact Area, Lubricated 1.02 [40] Min. PdNi Contact Area 0.10 [4] Min. Pd Strike Contact Area 2.54 [100] Min. SnPb Terminal Area 1.27 [50] Min. Ni all over</p>
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Socket Ordering Information (TS2221)

HSHM - S095BX - 5AP1 - XXXXX

<p>High Speed Option: 1 = Row differential applications 4 = Coaxial and column differential applications 5 = Stripline applications (75 Ω)</p>	<p>Plating μm [μin]: TG30 = 0.76 [30] Min. Au Contact Area 2.54 [100] Min. SnPb Terminal Area 1.27 [50] Min. Ni All over</p> <p>TR40B = 0.127 [5] Min. Hard Au Contact Area 1.02 [40] Min. PdNi Contact Area 0.10 [4] Min. Pd Strike Contact Area 2.54 [100] Min. SnPb Terminal Area 1.27 [50] Min. Ni all over</p>
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If you want to dramatically improve your system performance without costly and time consuming backplane redesign, 3M has the solution for you with HSHM. For more information on the 3M™ MetPak™ HSHM Press-Fit B19 connectors or other HSHM products visit www.3m.com/interconnects. For evaluation samples please call your local 3M sales representative or email isd_samples@mmm.com.

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