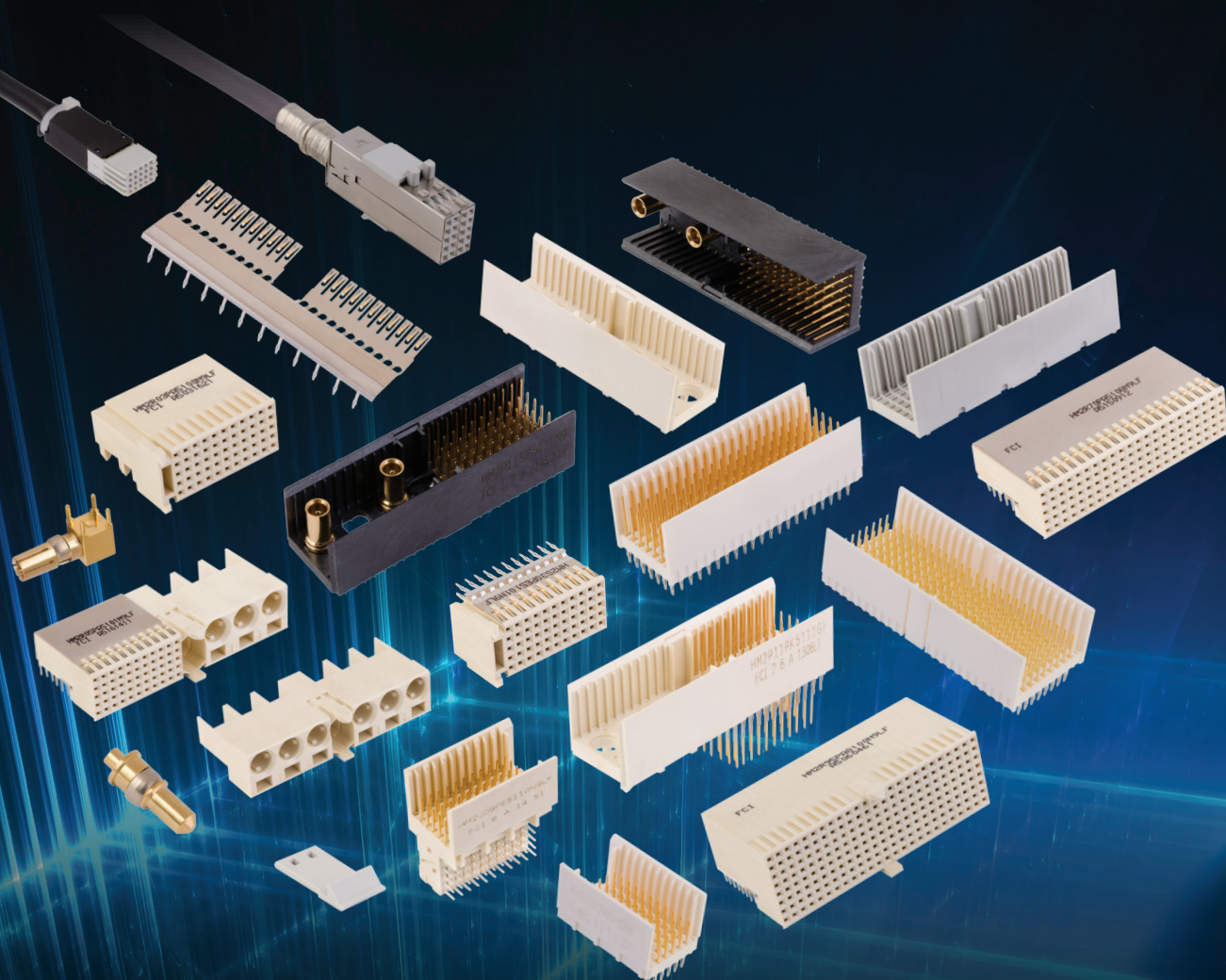




Millipacs® 2mm Hard Metric Connector Selector Guide

Millipacs® product family offers 2mm modular Board-to-Board and Cable-to-Board backplane connector solutions. Millipacs® product range include low speed and high speed (10Gb/s) signal connectors, cable, power and hybrid connectors, CompactPCI® and accessories.

MILLIPACS® BACKPLANE CONNECTORS

Millipacs® is a 2mm modular, Board-to-Board and Cable-to-Board Interconnection system in Hard Metric (HM) configuration designed in accordance with IEC 917, IEC 61076-4-101 and Telcordia GR-1217-CORE standards.

Millipacs® series 2mm HM connector is one of the most popular backplane connector system and offers attractive propositions for all market segments due to the cost-effectiveness, user flexibility, standardization and availability of its broad range. Millipacs® connector system is extensively used for chassis-based packaging in Communications, Data, Medical and Industrial & Instrumentation market segments. Millipacs® product family addresses a range of system architectures including backplane, coplanar, cabled backplane and mezzanine applications. Types of connector include Vertical Header, Right Angle Receptacle, Right Angle Header, Vertical Receptacle and Cable Receptacle. Millipacs® is the prime choice among all backplane connectors for signal applications up to 3Gb/s data rate.

FCI also offers Millipacs® High Speed (HS) series 2mm HM 5 row Right Angle Receptacle suitable for data rate up to 10Gb/s. It has mating compatibility with standard IEC 61076-4-101 series 2mm HM Vertical Header. The Millipacs® HS Receptacle and 2mm HM Vertical Header mating combination delivers low cross talk performance at higher frequencies.

TECHNICAL INFORMATION

MATERIALS

- VH Housing
 - Thermoplastic UL94V-0 for standard press-fit
 - High Temperature Polymer for Pin-in-Paste terminations and Millipacs® high speed
- RAH, VR and RAR Housings
 - High Temperature Polymer
- Contact: Copper Alloy
- Operating Temperature: -55°C to +125°C

ELECTRICAL PERFORMANCE

- Current Rating: 1.5A at 20°C; 1.0A at 70°C
- Contact Resistance: 20mΩ max.; 25mΩ max. for Millipacs® high speed
- Insulation Resistance: 10,000MΩ min.
- Voltage: 750Vrms

MECHANICAL PERFORMANCE

- Mating Force: 0.75N max. per contact; 0.50N max. per contact for Millipacs® high speed
- Withdrawal Force: 0.15N min. per contact
- Hertz Stress: 200 Kpsi min.
- Misalignment: Longitudinal ±2.0 mm; Transversal ±2.5 mm
- Inclination: ±2.0°

SPECIFICATIONS FOR MILLIPACS® STANDARD

- Product Specification: GS-12-203
- Application Specifications
 - VH: GS-20-034
 - RAH, VR and RAR: GS-20-022

SPECIFICATIONS FOR MILLIPACS® HIGH SPEED

- Product Specification: GS-12-1044
- Application Specifications: GS-20-22

APPROVALS AND CERTIFICATIONS

- IEC 917, IEC 61076-4-101
- DIN 43356 and IEEE 1301 Hard Metric Practice
- Telcordia GR-1217-CORE standards
- UL and CSA recognized

PACKAGING

- Tray packaging for standard versions
- Tape and reel packaging for Pin-in-Paste headers

Legend:
VH: Vertical Header
RAH: Right Angle Header
VR: Vertical Receptacle
RAR: Right Angle Receptacle

► 5 ROW SIGNAL – STANDARD

Millipacs® 5 row signal–standard				Vertical Header (VH)		Shroud	Right Angle Receptacle (RAR)	
				Shielded	Non-Shielded		Top Shielded	Non-Shielded
	Type A	module length 50 mm 110 pos service center	press-fit	HM2P07PD5111N9LF	HM2P07PD5110N9LF	HM2H07P1LF	HM2R01PA5108N9LF	HM2R01PA5100N9LF
			rear-plug-up	HM2P07PK5111GFLF	HM2P07PK5110GFLF			
	Type B	module length 50 mm 125 pos no service center	press-fit	HM2P08PD5111N9LF	HM2P08PD5110N9LF	HM2H08P1LF	HM2R02PA5108N9LF	HM2R02PA5100N9LF
			rear-plug-up	HM2P08PK5111GFLF	HM2P08PK5110GFLF			
	Type AB	module length 50 mm 125 pos guiding pegs	press-fit	HM2P65PD5111N9LF	HM2P65PD5110N9LF	HM2H65P1LF	HM2R65PA5108N9LF	HM2R65PA5100N9LF
			rear-plug-up	HM2P65PK5111GFLF	HM2P65PK5110GFLF			
	Type C	module length 25 mm 55 pos service center–left	press-fit	HM2P09PD5111N9LF	HM2P09PD5110N9LF	HM2H09P1LF	HM2R03PA5108N9LF	HM2R03PA5100N9LF
			rear-plug-up	HM2P09PK5111GFLF	HM2P09PK5110GFLF			
	Type CR	module length 25 mm 55 pos service center–right	press-fit	HM2P80PD5111N9LF	HM2P80PD5110N9LF	HM2H80P1LF	HM2R20PA5108N9LF	HM2R20PA5100N9LF
			rear-plug-up	HM2P80PK5111GFLF	HM2P80PK5110GFLF			

► 5 ROW SIGNAL – HIGH SPEED 10GB/S NEW

Millipacs® 5 row signal–high speed		Right Angle Receptacle (RAR)	Other Features
	Type A	10127112–101LF	• Suitable for data rate up to 10Gb/s according to IEEE 803.2ap • Mating compatibility to the IEC 61076–4–101 series 2mm hard metric (HM2) backplane header • Row-wise or horizontal pinning or broad side coupling • Staggered PCB terminals ensures low crosstalk performances at high frequencies • Same outer physical dimensions (except pcb terminal footprint) to IEC 61076–4–101 compliant 2mm hard metric receptacle
	Type AB	10127156–101LF	
	Type C	10127169–101LF	

TYPICAL PINNING RECOMMENDATION

f	0	0	0	0	0	0	0	0	0	0	0
e	G	G	S	S	G	G	S	S	G	G	LS
d	S	S	G	G	S	S	G	G	S	S	G
c	G	G	S	S	G	G	S	S	G	G	LS
b	S	S	G	G	S	S	G	G	S	S	G
a	G	G	S	S	G	G	S	S	G	G	LS
z											
Type C	1	2	3	4	5	6	7	8	9	10	11

Legend:

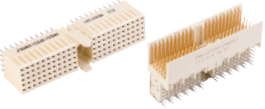
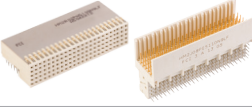
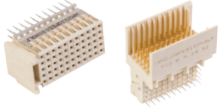
S – High Speed signal pins

LS – Low Speed signal pins

G – Ground pins

For custom pinning configuration requirement, please contact our FCI sales representatives.

▶ 5 ROW SIGNAL – REVERSED

Millipacs® 5 row signal-reversed			Right Angle Header (RAH)		Vertical Receptacle (VR)	
			Top Shielded	Non-Shielded	Shielded	Non-Shielded
	Type A	module length 50 mm 110 pos service center	HM2J07PE5118N9LF	HM2J07PE5110N9LF	HM2S10PE5101N9LF	HM2S10PE5100N9LF
	Type B	module length 50 mm 125 pos no service center	HM2J08PE5118N9LF	HM2J08PE5110N9LF	HM2S02PE5101N9LF	HM2S02PE5100N9LF
	Type C	module length 25 mm 55 pos service center-left	HM2J09PE5118N9LF	HM2J09PE5110N9LF	HM2S30PE5101N9LF	HM2S30PE5100N9LF

▶ 5 ROW SIGNAL – PIN-IN-PASTE

Millipacs® 5 row Pin-in Paste			Vertical Header (VH)
			Shielded
	Type A	with 110 signal contacts	HM2P40SZ5111N9LF
	Type C	with 55 signal contacts	HM2P09SZ5111N9LF
	Type M	with 55 signal contacts and 3 power/coax option	HM2P11SZ5011N9LF

► 8 ROW SIGNAL – STANDARD

Millipacs® 8 row signal-standard				Vertical Header (VH)		Shroud	Right Angle Receptacle (RAR)	
				Shielded	Non-Shielded		Top Shielded	Non-Shielded
	Type D	module length 50 mm 176 pos service center	press-fit	HM2P87PD8111N9LF	HM2P87PD8110N9LF	HM2H87P1LF	HM2R87PA8108N9LF	HM2R87PA8100N9LF
			rear-plug-up	HM2P87PK8111GFLF	HM2P87PK8110GFLF			
	Type DE	module length 50 mm 200 pos guiding pegs	press-fit	HM2P95PD8111N9LF	HM2P95PD8110N9LF	HM2H95P1LF	HM2R95PA8108N9LF	HM2R95PA8100N9LF
			rear-plug-up	HM2P95PK8111GFLF	HM2P95PK8110GFLF			
	Type E	module length 50 mm 200 pos no service center	press-fit	HM2P88PD8111N9LF	HM2P88PD8110N9LF	HM2H88P1LF	HM2R88PA8101N9LF	HM2R88PA8100N9LF
			rear-plug-up	HM2P88PK8111GFLF	HM2P88PK8110GFLF			
	Type F	module length 25 mm 88 pos service center-left	press-fit	HM2P89PD8111N9LF	HM2P89PD8110N9LF	HM2H89P1LF	HM2R89PA8108N9LF	HM2R89PA8100N9LF
			rear-plug-up	HM2P89PK8111GFLF	HM2P89PK8110GFLF			

► SIGNAL & POWER

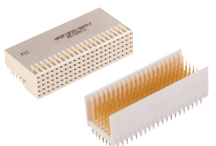
Signal & Power			Vertical Header (VH)	Right Angle Receptacle (RAR)
	Type L	module length 50 mm 6 power positions service center	HM2A30PG5000LF	HM2E30PH5000LF
	Type N	module length 25 mm 3 power positions service center	HM2A32PG5000LF	HM2E32PH5000LF
	Type M	module length 50 mm 3 power + 55 signal positions service center + location pegs	HM2P11PD5111N9LF	HM2R05PA5108N9LF

► CABLE CONNECTORS

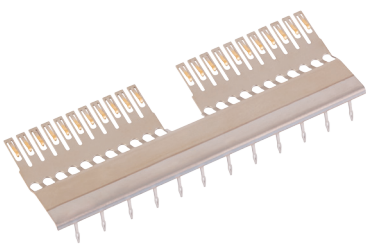
LF – Low Frequency			26AWG	30AWG – 28AWG
	Non-Shielded	2 x 5 positions	HM2C06D2C010N9LF	HM2C06D0C010N9LF
		4 x 5 positions	HM2C01D2C010N9LF	HM2C01D0C010N9LF
	Shielded	2 x 5 positions	HM2C09D2C021L9LF	HM2C09D0C021L9LF
		4 x 5 positions	HM2C10D2C021L9LF	HM2C10D0C021L9LF
		6 x 5 positions	HM2C11D2C021L9LF	HM2C11D0C021L9LF
		8 x 5 positions	HM2C12D2C021L9LF	HM2C12D0C021L9LF

Rear plug-up accessories			
	Cable-to-Board Shroud	5 x 5 positions	HM2H04P1LF
		5 x 25 positions	HM2H05P1LF
	Locking Key		HM2LK1LF

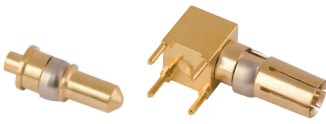
► 5 ROW – COMPACTPCI®

Millipacs® 5 row– CompactPCI®				Vertical Header (VH)		Shroud	Right Angle Receptacle (RAR)	
				Shielded	Non-Shielded		Top Shielded	Non-Shielded
	Type AB19	module length 38 mm 95 pos guiding pegs	press-fit	HM2P67PD5111N9LF	HM2P67PD5110N9LF	HM2H67P1LF	HM2R67PA5108N9LF	HM2R67PA5100N9LF
			rear-plug-up	HM2P67PK5111GFLF	HM2P67PK5110GFLF			
	Type AB22	module length 44 mm 110 pos guidng pegs	press-fit	HM2P66PD5111N9LF	HM2P66PD5110N9LF	HM2H66P1LF	HM2R66PA5108N9LF	HM2R66PA5100N9LF
			rear-plug-up	HM2P66PK5111GFLF	HM2P66PK5110GFLF			
	Type B22	module length 44 mm 110 pos no service center	press-fit	HM2P70PD5111N9LF	HM2P70PD5110N9LF	HM2H70P1LF	HM2R70PA5108N9LF	HM2R70PA5100N9LF
			rear-plug-up	HM2P70PK5111GFLF	HM2P70PK5110GFLF			

▶ ACCESSORIES

Bottom Shield	Connector Type		Part Number
	Type AB19	CompactPCI®	HM2LS66ALF
	Type AB22	CompactPCI®	HM2LS67ALF
	Type B22	CompactPCI®	HM2LS70ALF
	Type A	Millipacs	HM2LS22ALF
	Type AB	Millipacs	HM2LS22ALF
	Type C	Millipacs	HM2LS11ALF
	Type CR	Millipacs	HM2LS11ALF
	Type D	Millipacs	HM2LS22A8LF
	Type DE	Millipacs	HM2LS25A8LF
	Type E	Millipacs	HM2LS25A8LF
	Type F	Millipacs	HM2LS11A8LF
	Type M	Millipacs	HM2LS11ALF

Coding Devices	Color	Plug	Receptacle
	cadmium-yellow	HM2DK3456PLF	HM2DK1278RLF
	brilliant-blue	HM2DK1567PLF	HM2DK2348RLF
	reseda-green	HM2DK2578PLF	HM2DK1346RLF
	strawberry-red	HM2DK1248PLF	HM2DK3567RLF

Power Contacts	Connector Type	Pin Contact	Socket Contact
	Dipsolder Power Contacts (10A max. current)	RM12PIE54ERPLF	RC12PIE52ERPLF



For more information, please contact:
communications@fci.com