

AirMax VS[®] COPLANAR CONNECTORS

OVERVIEW

AirMax VS[®] coplanar connectors permit mating 2 boards in the same plane. This is very useful for many applications, one base card can mate to many IO cards to cost effectively offer different system IO options. ATCA systems, Zone 3 connectors directly connect front and rear cards, bypassing the backplane, effectively doubling the electronic capabilities of each slot within the system.

AirMax VS[®] coplanar connectors can also marry boards of differing technologies such as digital boards with RF boards for radio applications. Another example is mating high layer count processor boards to a low layer count IO board. Coplanar extender boards are used for system testing and development. By mating right angle male connectors to right angle female connectors, these coplanar connections can be made using the same connector modules one would use for traditional backplane architectures. In fact, the same daughter cards can be used in traditional backplane, midplane, and coplanar configurations.

Several FCI connector families include coplanar mating components. AirMax[®] family includes many coplanar configurations; including 3, 4 and 5 pair per column connectors with column pitch of 2mm and 3mm. This family also includes 100 ohm versions for the broad market as well as 85 ohm versions required for some computer architectures. AirMax VS2[®] family includes coplanar configurations that can accommodate speeds up to 20Gb/s. AirMax VSe[®] coplanar connectors can accommodate 25Gb/s applications. Zipline[®] coplanar connectors provide very high density (84 differential pairs / inch, 33 pairs /cm). Millipacs[®] and Metral[®] connector families also offer coplanar configurations. Coplanar guidance modules assure accurate positioning and guidance of the boards. Coplanar power modules are also available.



FEATURES

- Same connector modules used in backplane and coplanar mating configurations
- One base board can mate with several smaller IO cards
- Modules from different families can be combined
- Hard metric practice
- 3mm pitch AirMax VS[®] modules allow 2 pairs between columns
- AirMax VS[®] 5x10 module is available in an 85 ohm version

BENEFITS

- Enables use of the same daughter cards in a wide range of system configurations
- Enables mixing of base boards and IO boards to be able to satisfy a broad range of end customer configurations, extending the range of solutions an OEM can offer to their customers
- Provides the precise pin counts, speeds, guidance and power needed for a particular coplanar connection
- All of the different module types mate with 12.5mm distance between the coplanar cards. Modules can be placed immediately next to each other for maximum system density
- Can reduce the layer count for both boards by up to 50%, saving system cost and improving performance
- 85 ohm for those systems that require this impedance, specifically optimized for the QPI[®] specification



TECHNICAL INFORMATION

MATERIALS

- Contacts: Copper Alloy
- Contact Finish:
 - Performance-based plating over nickel at separable interface
 - Tin over nickel on press-fit tails on standard lead-free products. Tin-lead option available upon request
- Housings: High Performance Thermoplastic, UL94V-0

ELECTRICAL PERFORMANCES

- Contact Resistance: $\leq 35\text{m}\Omega$ initial, $\leq 10\text{m}\Omega$ increase after environmental test
- Current Rating ($\leq 30^\circ\text{C}$ rise above ambient in still air): 0.5A/contact with all contacts powered

100 Ω CONNECTORS

- Differential impedance: $100 \pm 6\Omega$ @ 80 ps (10-90%) rise time
- Differential insertion loss: < 1.5 dB through 6.25Gb/s; < 3.5 dB through 12.5Gb/s
- Near-end crosstalk (multi-active): < -33 dB through 6.25Gb/s; < -28 dB through 12.5Gb/s
- Far-end crosstalk (multi-active): < -31 dB through 6.25Gb/s; < -25 dB through 12.5Gb/s

85 Ω CONNECTORS

- Differential impedance: $85 \pm 5\Omega$ @ 50 ps (10-90%) rise time
- Differential insertion loss: < 1.5 dB through 8Gb/s rise time
- Near-end crosstalk (multi-active): < -30 dB through 8Gb/s
- Far-end crosstalk (multi-active): < -30 dB through 8Gb/s

MECHANICAL PERFORMANCE

- Durability: 200 cycles
- Mating Force: 0.45N max./contact
- Unmating Force: 0.15N min./contact
- Compliant pin insertion force: 40 N max.

SPECIFICATIONS

- Product: GS-12-239
- Application: GS-20-035

APPROVALS AND CERTIFICATIONS

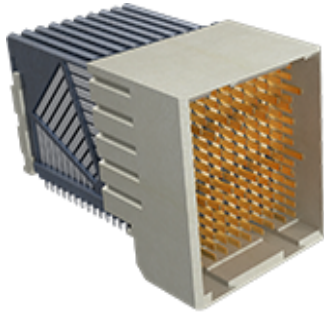
- Telcordia GR-1217-CORE Central Office

PACKAGING

- Tubes

TARGET MARKETS/APPLICATIONS

- Communications
 - Switches
 - Routers
 - Access
 - Optical Transmission
 - Wireless Base Stations
- Data
 - Servers
 - Switches
 - Storage
- Industrial & Instrumentation
 - Test & Measurement
- Medical



Right Angle Header (4 Wall)



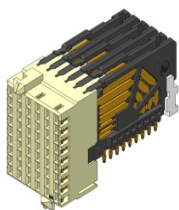
Right Angle Receptacle

PART NUMBERS

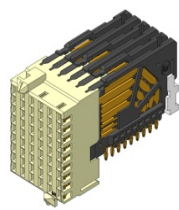
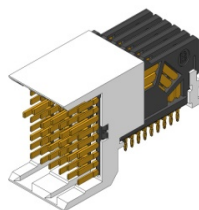
AirMax VS® SIGNAL MODULES MATING RIGHT ANGLE HEADER TO RIGHT ANGLE RECEPTACLE

Pairs	Product Variation			Mating Connector System			Differential Impedance
	Columns	Differential Pairs	Column Pitch	Right Angle Receptacle	Right Angle Header	Header Version	
3	6	18	2mm	10053656-101LF	10040862-101LF	2 Wall	100 OHMS
	6	18	2mm	10053656-101LF	10039851-101LF	4 Wall	
	8	24	2mm	10077323-101LF	10045266-101LF	2 Wall	
	8	24	2mm	10077323-101LF	10045267-101LF	4 Wall	
	10	30	2mm	10056335-101LF	10034264-101LF	2 Wall	
	10	30	2mm	10056335-101LF	10034249-101LF	4 Wall	
4	6	24	2mm	10114633-101LF	10052825-101LF	4 Wall	
	8	32	2mm	10060905-101LF	10052837-101LF	2 Wall	
	8	32	2mm	10060905-101LF	10052838-101LF	4 Wall	
	10	40	2mm	10035754-101LF	10029391-101LF	2 Wall	
	10	40	2mm	10035754-101LF	10028436-101LF	4 Wall	
	10	40	3mm	10045722-101LF	10035514-101LF	2 Wall	
5	10	40	3mm	10045722-101LF	10035515-101LF	4 Wall	
	8	40	2mm	10045548-101LF	10041746-101LF	2 Wall	
	8	40	2mm	10045548-101LF	10041460-101LF	4 Wall	
	10	50	2mm	10034475-101LF	10016527-101LF	2 Wall	
	10	50	2mm	10034475-101LF	10025613-101LF	4 Wall	
	10	50	3mm	10057041-101LF	10037323-101LF	2 Wall	
	10	50	3mm	10057041-101LF	10037324-101LF	4 Wall	

Pairs	Product Variation			Mating Connector System			Differential Impedance
	Columns	Differential Pairs	Column Pitch	Right Angle Receptacle	Right Angle Header	Header Version	
5	10	50	2mm	10095504-101LF	10097311-101LF	4 Wall	85 OHMS
	10	50	3mm	10095505-101LF	10087771-101LF		



2 wall headers stackable maximum density



4 wall headers protects pins

