

AIRMAX VS[®] BACKPLANE/MIDPLANE CONNECTORS

OVERVIEW

The AIRMAX[®] Product Family is FCI's core offering, a leading backplane solution for telecom, networking, server, and storage applications. The Shieldless Open Pin Field Design with no pre-assigned ground pins provides the ultimate flexibility in board layout. The AIRMAX[®] product family addresses a broad range of system architectures, including backplane, midplane, coplanar, midplane orthogonal, cabled backplane, and mezzanine applications.

The new **AIRMAX VS2[™]** provides a best cost alternative within the AIRMAX[®] Family up to 12.5Gb/s while the **AIRMAX VSe[®]** provides a performance optimized connector solution up to 25Gb/s.



FEATURES & BENEFITS

- Provides options for the protected receptacle to be on the backplane/midplane or on the daughter card at the designer's discretion
- Available range of differential pairs/column, column pitches and column counts offers design flexibility
- Designs optimized for either 100Ω or 85Ω impedance to match channel impedance and reduce loss
- Halogen-free signal modules aid efforts to minimize the use of environmentally sensitive materials
- Available power and guide modules complement signal connector offering

TARGET MARKETS/APPLICATIONS

- Communications
 - Switches
 - Routers
 - Optical transport
 - Wireless infrastructure
- Data
 - Servers
 - Storage systems
 - Super computers





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-temperature thermoplastic, UL94V-0

ELECTRICAL PERFORMANCE

- 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: $100 \pm 8\Omega$ @ 50 ps (10-90%) rise time
- Differential insertion loss: $< 1\text{dB}$ through 6.25Gb/s
 $< 1.5\text{ dB}$ through 12.5Gb/s
- Near-end crosstalk (multi-active): $< -38\text{ dB}$ through 6.25Gb/s; $< -28\text{ dB}$ through 12.5Gb/s
- Far-end crosstalk (multi-active): $< -41\text{ dB}$ through 6.25Gb/s; $< -28\text{ dB}$ through 12.5Gb/s

80 Ω Connectors

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

MECHANICAL PERFORMANCE

- Durability: 200 cycles
- Mating force: 0.45 N max./contact
- Unmating force: 0.15 N min./contact
- Compliant pin insertion force:
 - Vertical headers, right-angle headers or right-angle receptacles: 40 N max.
 - Vertical receptacles: 25 N max.

SPECIFICATIONS

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

APPROVALS AND CERTIFICATIONS

- Telcordia GR-1217-CORE Central Office

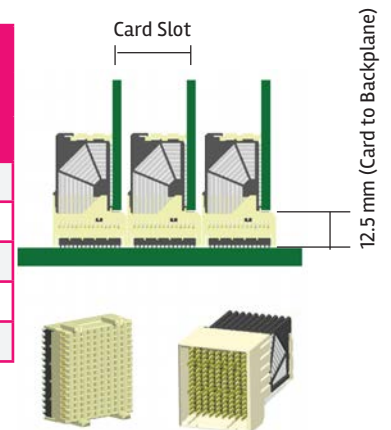
PACKAGING

- Tubes
- Trays (vertical receptacle only)

AIRMAX VS® SIGNAL MODULES WITH VERTICAL RECEPTACLE

TYPICAL APPLICATIONS & SIGNAL DENSITY

Minimum Card Slot Spacing (mm)	Column Pitch (mm)	Differential Pairs			Contacts			Product Family
		per column	Linear Density		per column	Linear Density		
			per inch	per cm		per inch	per cm	
25	2.0	5	63.5	25.0	15	190.5	75	AirMax VS
25	3.0	5	42.3	16.7	15	127.0	50	AirMax VS
20	2.0	4	50.8	20.0	12	152.4	60	AirMax VS
20	3.0	4	33.9	13.3	12	101.6	40	AirMax VS
17	2.0	3	38.1	15.0	9	114.3	45	AirMax VS



AIRMAX VS® SIGNAL MODULES WITH VERTICAL RECEPTACLE

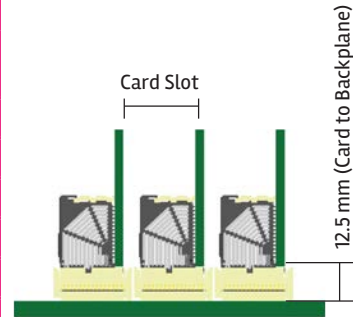
Differential Impedance (ohms)	Minimum Card Slot Spacing (mm)	Differential Pairs		Total Contacts	Number Of Columns	Column Pitch (mm)	Header Type	Module Width Along Card Edge (mm)	Signal Module Part Numbers	
		Total	Per Column						Backplane/ Midplane	Daughter Card
85	25	50	5	150	10	2.0	4-wall	22.0	10099767-101LF	10097311-101LF
85	25	50	5	150	10	3.0	4-wall	32.0	10099768-101LF	10087771-101LF
85	17	18	3	150	6	2.0	4-wall	14.0	10096461-101LF	10097256-101LF
100	25	50	5	150	10	2.0	2-wall	20.0	10016537-101LF	10016527-101LF
100	25	50	5	150	10	2.0	4-wall	22.0	10016537-101LF	10025613-101LF
100	25	50	5	150	10	3.0	2-wall	30.0	10035146-101LF	10037323-101LF
100	25	50	5	150	10	3.0	4-wall	32.0	10035146-101LF	10037324-101LF
100	25	40	5	120	8	2.0	2-wall	16.0	10040993-101LF	10041746-101LF
100	25	40	5	120	8	3.0	4-wall	18.0	10040993-101LF	10041460-101LF
100	25	40	5	120	8	3.0	2-wall	24.0	10064493-101LF	10064488-101LF
100	25	40	5	120	8	3.0	4-wall	26.0	10064493-101LF	10064489-101LF
100	20	40	4	120	10	2.0	2-wall	20.0	10028264-101LF	10029391-101LF
100	20	40	4	120	10	2.0	4-wall	22.0	10028264-101LF	10028436-101LF
100	20	40	4	120	10	3.0	2-wall	30.0	10035465-101LF	10035514-101LF
100	20	40	4	120	10	3.0	4-wall	32.0	10035465-101LF	10035515-101LF
100	20	32	4	96	8	2.0	2-wall	16.0	10052842-101LF	10052837-101LF
100	20	32	4	96	8	2.0	4-wall	18.0	10052842-101LF	10052838-101LF
100	20	24	4	72	6	2.0	2-wall	12.0	10052829-101LF	10052824-101LF
100	20	32	4	96	8	2.0	4-wall	14.0	10052829-101LF	10052825-101LF
100	17	30	3	90	10	2.0	2-wall	20.0	10034251-101LF	10034264-101LF
100	17	30	3	90	10	2.0	4-wall	22.0	10034251-101LF	10034249-101LF
100	17	24	3	72	8	2.0	2-wall	16.0	10045271-101LF	10045266-101LF
100	17	24	3	72	8	2.0	4-wall	18.0	10045271-101LF	10045267-101LF
100	17	18	3	54	6	2.0	2-wall	12.0	10043546-101LF	10040862-101LF
100	17	18	3	54	8	2.0	4-wall	14.0	10043546-101LF	10039851-101LF

Disclaimer

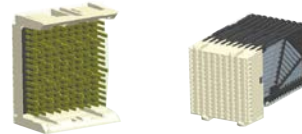
AIRMAX VS® & ZIPLINE® SIGNAL MODULES WITH VERTICAL HEADERS

TYPICAL APPLICATIONS & SIGNAL DENSITY

Minimum Card Slot Spacing (mm)	Column pitch (mm)	Differential Pairs			Contacts			Product Family
		per column	Linear Density		per column	Linear Density		
			per inch	per cm		per inch	per cm	
27	1.8	6	84.6	33.3	18	254.0	100	ZipLine
27	2.0	5	63.5	25.0	15	190.5	75	AirMax VS
27	3.0	5	42.3	16.7	15	127.0	50	AirMax VS
23	2.0	4	50.8	20.0	12	152.4	60	AirMax VS
23	3.0	4	33.9	13.3	12	101.6	40	AirMax VS
19	2.0	3	38.1	15.0	9	114.3	45	AirMax VS



AIRMAX VS® SIGNAL MODULES WITH VERTICAL HEADER



Differential Impedance (ohms)	Minimum Card Slot Spacing (mm)	Differential Pairs		Total Contacts	Number Of Columns	Column pitch (mm)	Header Type	Module Width Along Card Edge (mm)	Signal Module Part Numbers	
		Total	Per Column						Backplane/Midplane	Daughter Card
									Vertical Receptacle	Right-Angle Header
85	27	50	5	150	10	2.0	2-wall	20.0	10095500-1050011LF	10095504-1011F
85	27	50	5	150	10	3.0	2-wall	30.0	10073377-1050011LF	10095505-1011F
100	27	50	5	150	10	2.0	2-wall	20.0	10056098-1050011LF	10034475-1011F
100	27	50	5	150	10	3.0	2-wall	30.0	10056427-1050011LF	10057041-1011F
100	27	40	5	120	8	2.0	2-wall	16.0	10055140-1050011LF	10045548-1011F
100	23	40	4	120	10	2.0	2-wall	20.0	10056100-1050011LF	10035754-1011F
100	23	40	4	120	10	2.0	4-wall	22.0	10056100-1080011LF	10035754-1011F
100	23	40	4	120	10	3.0	2-wall	30.0	10056430-1050011LF	10045722-1011F
100	23	40	4	120	10	3.0	4-wall	32.0	10056430-1080011LF	10045722-1011F
100	23	32	4	96	8	2.0	2-wall	16.0	10055307-1050011LF	10060905-1011F
100	23	32	4	96	8	3.0	2-wall	24.0	10056429-1050011LF	10076645-1011F
100	19	30	3	90	10	2.0	2-wall	20.0	10056103-1050011LF	10056335-1011F
100	19	30	3	90	10	2.0	4-wall	22.0	10056103-1080011LF	10056335-1011F
100	19	18	3	54	6	2.0	2-wall	12.0	10056101-1050011LF	10053656-1011F

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