

Xcede® Backplane Connector

DESIGNED TO SUPPORT 56G DATA RATE REQUIREMENTS

The Xcede® product family allows for scalable data rates up to 56Gb/s with minimal cost. The flexibility of the design and available configurations allow for a complete solution for all system architectures.

- Scalable data rates up to 56Gb/s
- Up to 82 differential pairs per linear inch
- Mechanical longevity and ruggedness
- 2, 3, 4, 5, 6 and 8 pair configurations
- Integrated power and guidance



FEATURES

- Backwards mate compatibility
- Derivatives including coplanar, orthogonal, and mezzanine configurations
- Up to 82 differential pairs per linear inch
- Embedded capacitor available
- Option of a 15.7mil drill compliant pin
- Guidance and keying options

BENEFITS

- Scalable upgrades to 56Gb/s without costly redesigns
- Provides a complete solution for unique designs
- Supports high density requirements
- Additional performance margin and overall system cost savings
- Dual diameter vias enhance the return loss performance of the footprints
- Allows for flexibility of design

TECHNICAL INFORMATION

MATERIAL

- Housing: LCP (1st shot), Conductive Plastic (2nd shot)
- Contact Base metal: Copper Alloy
- Plating: Performance-based plating at separable interface; meets requirements of product specification

ELECTRICAL PERFORMANCE

- Signal Current Rating: 1A per contact
- Ground Current Rating: 2A per contact
- Power Current Rating: 6A per contact
- Signal Dielectric Withstanding Voltage: 600VAC (RMS)
- Ground Dielectric Withstanding Voltage: 750VAC (RMS)
- Mating Interface Contact Resistance Change: 10mΩ max.
- Compliant Pin To Plated Through Hole Resistance: 1mΩ max.
- Insulation Resistance: 1000MΩ

MECHANICAL PERFORMANCE

- 250 mating cycles
- Signal Contact Mating Force: 0.59N max. per contact
- Ground Contact Mating Force: 0.59N max. per contact
- Signal Contact Wipe Length: 1.5mm – 3.0mm
- Compliant Pin Insertion Force: 5lbs – 15lbs per pin
- Compliant Pin Retention Force: 0.5lbs – 2.0lbs per pin

APPROVALS AND CERTIFICATIONS

- UL94-V0

PACKAGING

- Tray / Tube

ENVIRONMENTAL

- Maximum Non-Operating Temperature Range (unmated): 125°C for 24 hours
- Maximum Operating Temperature Range: +105°C
- Minimum Operating Temperature Range: -40°C
- In accordance with Telcordia GR-1217-CORE & EIA-364 Standards

SPECIFICATIONS

- TB-2150 General Product Specification for Xcede® Product Family
- TB-2149 Xcede® Product Family Routing Guidelines
- TB-2211 Xcede® Routing Guidelines

TARGET MARKETS/APPLICATIONS



Hubs
Switches
Routers
Optical Transport
Wireless Infrastructure



Servers
External Storage System (ESS)
Supercomputer



Test Equipment
Emulation Equipment

PART NUMBERS – X2

Description	Part Numbers
X2, High Speed Backplane Connectors, 4-Pair, 6 pos, Open	974-400B-C0H
X2, High Speed Backplane Connectors, 4-Pair, 8 pos, Open	974-400C-L0H
X2, High Speed Backplane Connectors, 4-Pair, 6 pos, Open	974401BL0H
X2, High Speed Backplane Connectors, 4-Pair, Left Polarizing	974-4A0B-C0H
X2, High Speed Backplane Connectors, 4-Pair, Left Polarizing	974-4B0B-C0H
X2, High Speed Backplane Connectors, 5-Pair, Open	974500BA0H
X2, High Speed Backplane Connectors, 5-Pair, 8 pos, Open	974-500C-A0H
X2, High Speed Backplane Connectors, 5-Pair, 8 pos, Left Wall	974-5L0C-A0H
X2, High Speed Backplane Connectors, 5-Pair, Right Wall	974-5M0A-A0H
X2, High Speed Backplane Connectors, 5-Pair, 8 pos, Right Wall	974-5M0C-A0H
X2, High Speed Backplane Connectors, 4-Pair, 4 pos, Open	974-400A-C0H
X2, High Speed Backplane Connectors, 4-Pair, 8 pos, Open	974-400C-C0H
X2, High Speed Backplane Connectors, 6-Pair, 4 pos, Open	974-600A-C0H
X2, High Speed Backplane Connectors, 6-Pair, 8 pos, Open	974-600C-C0H
X2, High Speed Backplane Connectors, 6-Pair, 6 pos, Open	974-600B-C0H

Find part number details using the search box on www.amphenol-cs.com

PART NUMBERS – XCEDE® PLUS

Description	Part Numbers
Backplane connectors, Cable Backplane, Plus 4X6 Cable	HS30710001
XCede® Plus, High Speed Backplane Connectors, Ortho bp, 2-Pair, 270deg 85Ω	940215AH0H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, Left Wall	9404L0A40H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, Left Wall	9404L0B50H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, Right Wall	9404M0B50H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, 8 pos, Right Wall	9404M0C40H
XCede® Plus, High Speed Backplane Connectors, ortho bp, 2-Pair, 90deg 85Ω	940214AH0H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, Open	940400B50H
XCede® Plus, High Speed Backplane Connectors, ortho 6-Pair, bp, Double End Wall, 90 deg, 100Ω, 25 sig/35 gnd	940612F90H
XCede® Plus, High Speed Backplane Connectors, 6-Pair, bp, Double End Wall, 270 deg, 100Ω	940613F90H
XCede® Plus, High Speed Backplane Connectors, 6-Pair, bp, Left Polarizing, Right Wall, 90 deg 100Ω	940622FB1H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, Open	940400A40H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, Right Polarizing	9404Y0A30H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, Right Polarizing	9404Y0A40H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, Left Polarizing	9404A0B30H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, Left Wall	9404L0B70H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, Open	940400B30H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, Open	940400B40H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, Open	940400B70H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, Right Wall	9404M0B70H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, Right	9404Y0B40H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, 8 pos, Left Wall	9404L0C30H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, 8 pos, Open	940400C30H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, 8 pos, Open	940400C40H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, 8 pos, Right Wall	9404M0C30H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, 8 pos, Right	9404Y0C40H
XCede® Plus, High Speed Backplane Connectors, 4-Pair, 8 pos, Left Polarizing	9404J0C30H
XCede® Plus, High Speed Backplane Connectors, 6-Pair, Open	940-600B-30H
XCede® Plus, High Speed Backplane Connectors, 6-Pair, Open	940-600B-40H
XCede® Plus, High Speed Backplane Connectors, 6-Pair, Open	940600B70H
XCede® Plus, High Speed Backplane Connectors, 6-Pair, 6 pos, Left walled	940-6L0B-30H
XCede® Plus, High Speed Backplane Connectors, 6-Pair, 6 pos, Right walled	940-6M0B-30H
XCede® Plus, High Speed Backplane Connectors, 8- Pair, 6 pos, Left Polarizing/guide	940-8J0B-30H
XCede® Plus, High Speed Backplane Connectors, 8- Pair, 6 pos, Left walled	940-8L0B-30H
XCede® Plus, High Speed Backplane Connectors, 8- Pair, 6 pos, Right walled	940-8M0B-30H
XCede® Plus, High Speed Backplane Connectors, 8- Pair, 8 pos, Open	940800C70H
XCede® Plus, High Speed Backplane Connectors, 8-Pair, Open	940-800B-30H
XCede® Plus, High Speed Backplane Connectors, 8-Pair, Open	940800B70H

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PART NUMBER SELECTOR – X2

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974 — D E F G — H I J

Pairs	
2	2 Pair
3	3 Pair
4	4 Pair
5	5 Pair
6	6 Pair
8	8 Pair

Metal (per MTS506) & Finish (per EGS205) All Metal is High Perf. Cu Alloy	
0	No Pin/Standard Machine Guide Pin
D	769
E	768
H	806
J	805
Y	Not Loaded

End Condition/Guide/Pol. Mfg. State:			
0	Open	1	Left & Right Wall
A	L Pol, Key A	N	L Pol, No Key W/O Guide
B	L Pol, Key B	P	R Pol, Key A
C	L Pol, Key C	Q	R Pol, Key B
D	L Pol, Key D	R	R Pol, Key C
E	L Pol, Key E	S	R Pol, Key D
F	L Pol, Key F	T	R Pol, Key E
G	L Pol, Key G	U	R Pol, Key F
H	L Pol, Key H	V	R Pol, Key G
J	L Pol, No Key w/Guide	W	R Pol/ Key H
L	Left Wall	Y	R Pol, No Key W/Guide
M	Right Wall	Z	R Pol, No Key W/O Guide

Guide Pin Selection	
0	No Pin/Standard Machine Guide Pin

DESIGNATOR	SIGNAL WIPE	LG. GROUND WIPE	SMALL GROUND WIPE	DRILL
0	N/A	N/A	N/A	N/A
A	2.0mm	3.5mm	3.5mm	All parts 15.7
B	2.0mm	3.5mm	3.5mm	All parts 17.7
C	2.0mm	4.0mm	3.5mm	All parts 15.7
D	2.0mm	4.0mm	3.5mm	All parts 17.7
E	2.5mm	3.5mm	3.5mm	All parts 15.7
F	2.5mm	3.5mm	3.5mm	All parts 17.7
G	2.5mm	4.0mm	3.5mm	All parts 15.7
H	2.5mm	4.0mm	3.5mm	All parts 17.7
J	3.0mm	3.5mm	3.5mm	All parts 15.7
K	3.0mm	3.5mm	3.5mm	All parts 17.7
L	3.0mm	4.0mm	3.5mm	All parts 15.7
M	3.0mm	4.0mm	3.5mm	All parts 17.7
N	2.0mm	3.5mm	3.5mm	Signal/ Lg.Gnd 21.7. Sm. Gnd 17.7
R	2.5mm	3.5mm	3.5mm	Signal/ Lg.Gnd 21.7. Sm. Gnd 17.7
T	2.5mm	4.0mm	3.5mm	Signal/ Lg.Gnd 21.7. Sm. Gnd 17.7
U	3.0mm	3.5mm	3.5mm	Signal/ Lg.Gnd 21.7, m.Gnd 17.7
V	3.0mm	4.0mm	3.5mm	Signal/ Lg.Gnd 21.7, Sm.Gnd 17.7

NOTE: Numbers are symmetric end conditions

Pitch	
0	1.85mm Standard, W/O Extra Ground
1	1.85mm Standard, W/ Extra Ground

Product Type	
A	4 Position
B	6 Position
C	8 Position
D	10 Position
E	12 Position
F	24 Position
G	4 Position W/ Smart Shield
H	6 Position W/ Smart Shield
J	8 Position W/ Smart Shield
K	4 Position W/ Smart Shield & LG.GND Backside Plating
L	6 Position W/ Smart Shield & LG.GND Backside Plating
M	8 Position W/ Smart Shield & LG.GND Backside Plating

PART NUMBER SELECTOR – Xcede®

Find part number details using the search box on www.amphenol-cs.com

951 — **D** **E** **FG** — **H** **I** **J**

Pairs	
2	2 Pair
3	3 Pair
4	4 Pair
5	5 Pair
6	6 Pair

End Condition/Guide/Pol. Mfg. State:			
0	Open	1	Left & Right Wall
A	L Pol, Key A	N	L Pol, No Key W/O Guide
B	L Pol, Key B	P	R Pol, Key A
C	L Pol, Key C	Q	R Pol, Key B
D	L Pol, Key D	R	R Pol, Key C
E	L Pol, Key E	S	R Pol, Key D
F	L Pol, Key F	T	R Pol, Key E
G	L Pol, Key G	U	R Pol, Key F
H	L Pol, Key H	V	R Pol, Key G
J	L Pol, No Key w/Guide	W	R Pol/ Key H
L	Left Wall	Z	R Pol, No Key W/O Guide
Y	R Pol, No Key w/Guide		

NOTE: Numbers are symmetric end conditions

Metal (per MTS506) & Finish (per EGS205) All Metal is High Perf. Cu Alloy			
A	Unplated	F	804
B	735	G	803
C	732	H	806
D	769	J	805
E	768	Y	Not Loaded or N/A

Guide Pin Selection	
0	No Pin/Standard Machine Guide Pin
1	Std. Machined guide pin (25.7mm = 2pr., 31.64 = 3 thru 6 pair)
2	Machined 21.6mm guide pin, for use on a module that marries to a 22mm Stacker
4	25.7 Machined guide pin, for use on a module that marries to a 30mm Stacker
5	25.7mm Machined guide pin, for use on a module that marries to a 30mm Stacker
6	Ortho Machined wide guide w/o stub
7	Ortho Machined wide guide w/stub

NOTE: 1 & 5 were originally rolled guide pins, replaced by machined guide pins (for legacy use only.)

Product Type			
OC	HSD, 6 pos, 1.85mm	2E	HSD, 8 pos, 1.85mm, 4.64mm shroud base
OE	HSD, 8 pos, 1.85mm	2J	HSD, 4 pos, 1.85mm, 4.64mm shroud base
OJ	HSD, 4 pos, 1.85mm	2N	HSD, 24 pos, 1.85mm 4.64mm shroud base
ON	HSD, 24 pos, 1.85mm	2Q	HSD, 14 pos, 1.85mm, 4.64mm shroud base
OQ	HSD, 14 pos, 1.85mm	3C	HSD, 6 pos, 3.00mm
1A	L-Series, 5 pos, 1.85mm	3E	HSD, 8 pos, 3.00mm
2A	L-Series, 10 pos, 1.85mm	3J	HSD, 4 pos, 3.00mm
3A	L-Series, 25 pos, 1.85mm (not tooled)	3C	HSD, 6 pos, 3.00mm
4A	L-Series, 5 pos, 1.85mm, thin wall	7C	HSD, 6 pos, 2.25mm
5A	L-Series, 5 pos, 1.85mm, thin wall	7E	HSD, 8 pos, 2.25mm
6A	L-Series, 5 pos, 1.85mm, thin wall (not tooled)	7J	HSD, 4 pos, 2.25mm
IC	HSD, 6 pos, 1.85mm, 3.64mm shroud base	7N	HSD, 24 pos, 2.25mm
IE	HSD, 8 pos, 1.85mm, 3.64mm shroud base	8C	HSD, 6 pos, 1.85mm, thick wall (Unloaded Shroud ONLY)
1J	HSD, 4 pos, 1.85mm, 3.64mm shroud base	90	2.68mm orthogonal, 90 degree, 100Ω IM
IN	HSD, 24 pos, 1.85mm, 3.64mm shroud base	91	2.68mm orthogonal, 270 degree, 100Ω IM
IQ	HSD, 14 pos, 1.85mm, 3.64mm shroud base	92	2.68mm orthogonal, 90 degree, 85Ω IM
2C	HSD, 6 pos, 1.85mm, 4.64mm shroud base	93	2.68mm orthogonal, 270 degree, 100Ω IM

NOTE: Unloaded orthogonal shroud options are 90&92 only, and can be loaded at 90 or 270 degrees

Signal Wipe/Large Ground Height	
0	Empty Shroud or 1mm pin, L-Series
1	2=3mm pin, 4mm Lg. ground, 21.7 drill
2	3mm pin, 4mm Lg. ground, 21.7 drill
3	2mm pin, 4mm Lg ground, 17.7 drill
4	3mm pin, 4mm Lg ground, 17.7 drill
5	2mm pin, 3mm Lg ground, 21.7drill
6	3mm pin, 3mm Lg ground, 21.7drill
7	2mm pin, 3mm Lg. ground. 17.7 drill
8	3mm pin, 3mm Lg ground, 17.7drill
9	2.5mm pins, 3.5mm Lg. ground
A	2.5mm pins, 3.5mm Lg. ground, w2.0mm pins in C&D locations
B	2.0mm pins, 3.5mm Lg. ground, 17.7drill
C	1.5mm pins, 4mm Lg. ground, 21.7 drill
D	1.5mm pins, 3mm Lg ground, 21.7 drill
E	1.5mm pins, 4mm Lg. ground, 17.7 drill
F	1.5mm pins, 3mm Lg ground, 17.7 drill

NOTE: For L-Series part numbers, digits F&G are LA thru 6A (per "product type"), The only signal pin options are 0, 1 & 2

PART NUMBER SELECTOR – Xcede® Plus

Find part number details using the search box on www.amphenol-cs.com

940

D

E

F

G

H

I

J

Pairs			
2	2 Pair	5	5 Pair
3	3 Pair	6	6 Pair
4	4 Pair	8	8 Pair

End Condition/Guide/Pol. Mfg. State	
0	Open
1	Left & Right Wall
2	L. Pol, R. Wall w/ Wide guide pin/ No Pol. Pin, Orthogonal Only
3	R. Pol, L. Wall w/ Wide guide pin/ No Pol. Pin, Orthogonal Only
4	L Pol, No Key, No Guide
5	R. Pol, No Key, No guide

NOTE: Parts with a numeric in the “E” digit have Symmetric End Conditions

0	Open	N	L Pol, No Key W/O Guide
A	L Pol, Key A	P	R Pol, Key A
B	L Pol, Key B	Q	R Pol, Key B
C	L Pol, Key C	R	R Pol, Key C
D	L Pol, Key D	S	R Pol, Key D
E	L Pol, Key E	T	R Pol, Key E
F	L Pol, Key F	U	R Pol, Key F
G	L Pol, Key G	V	R Pol, Key G
H	L Pol, Key H	W	R Pol/ Key H
J	L Pol, No Key w/Guide	Y	R Pol, No Key, W/Guide
L	Left Wall	Z	R Pol, No Key W/O Guide
M	Right Wall		

Pitch	
0	1.85mm Standard
1	2.68mm Ortho Stitched and Routable
2	2.68mm Ortho, 90°, 100Ω
3	2.68mm Ortho, 270°, 100Ω
4	2.68mm Ortho, 90°, 85Ω
5	2.68mm Ortho, 270°, 85Ω

Note: A) 100Ω only offering for options 0 & 1
B) 0, 1 & 2 are the only unloaded shroud options

Product Type & Plastic			
A	4 Position	F	12 Position
B	6 Position	G	14 Position
C	8 Position	H	16 Position
D	10 Position	J	24 Position
E	11 Position		

Metal (per MTS506) & Finish (per EGS205) All Metal is High Perf. Cu Alloy			
A	Unplated	F	804
B	735	G	803
C	732	H	806
D	769	J	805
E	768	Y	Not Loaded or N/A

Guide Pin Selection	
0	No Pin/Standard Machine Guide Pin
1	Wide Machined Guide Pin

Signal Wipe/Large Ground Height					
H = SIGNAL, LG. GROUND, SMALL GROUND, DRILL, AND USAGE					
DESIGNATOR	SIGNAL WIPE	LG. GROUND WIPE	SMALL GROUND WIPE	DRILL	USAGE
0	UNLOADED				
1	2.0 MM	4.0 MM	3.0 MM	21.7	STITCHED
2	5	5	5	5	5
3	6	6	6	6	6
4	7	7	7	7	7
5	2	2	2	2	2
6	4	4	4	4	4
7	5	5	5	5	5
8	6	6	6	6	6
9	7	7	7	7	7
A	5	5	5	5	5
B	6	6	6	6	6
C	7	7	7	7	7
D	2	2	2	2	2
E	4	4	4	4	4
F	5	5	5	5	5
G	6	6	6	6	6
H	7	7	7	7	7
I	2	2	2	2	2
J	4	4	4	4	4
K	5	5	5	5	5
L	6	6	6	6	6
M	7	7	7	7	7
N	5	5	5	5	5

HSBPXCDEBPL1224EA4