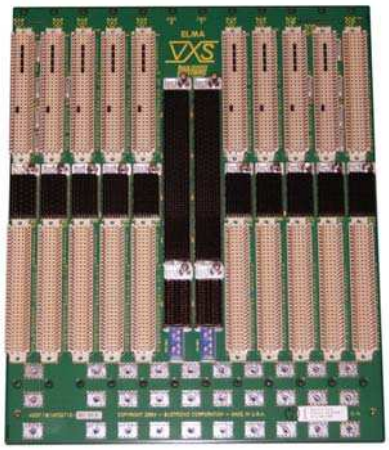
VXS Backplanes - Dual Star



Description

The VXS backplane is an effort by VITA to bring switched serial fabrics to VME. Part of the "VME Renaissance", the VITA 41.0 core specification for VXS has been ratified. VXS adds a high-speed connector over P0 of a VME64x backplane for serial data traffic. Designers will have the flexibility of plugging in standard VME64x cards for parallel bus only, integrate new payload and switch cards for parallel bus and switch fabric transport or switch fabric transport only. The VXS spec allows for four differential serial pairs per direction link over P0, and supports up to two such ports on each VMEbus card.

The subsets of VITA 41 include InfiniBand (VITA 41.1) and Rapid I/O (VITA 41.2) and may include GigaBit Ethernet (VITA 41.3), and PCI Express (VITA 41.4).

Elma Bustronic has performed Signal Integrity studies and simulation on its VXS backplane design. The result is high-performance in the most cost-effective design. With intelligent routing studies, we are able to decrease the layer count -- keeping costs and board thicknesses low. Elma Bustronic incorporates a controlledimpedance stripline design and offers VXS backplanes in 6U and 7U heights and various configurations.

Features

- Conforms to ANSI/VITA 41.0 VXS backplane specifications
- Switched serial traffic over PO of VME64x backplane
- High speed MultiGig RT-2 connector over P0
- Plenty of power bugs for 3.3V, 5V, 12V and GND
- Compatible with VME64x standard line cards
- Single Star, Dual Star, Mesh, and Hybrid versions available
- Various configurations of payload slots, switch cards slots, etc.
- Versions designed to VITA 41.6 for Gigabit Ethernet control channel layer

Board Specifications

- 10-layer (8-slot), 12-layer (12-slot), 18-layer (12-slot Nelco, 20, 21 slot) board
- 2 oz. copper power and ground
- PCB UL listed 94V-0
- PCB FR-4 or Nelco 4000-13SI
- PCB .147" (8-slot), .160" (12-slot), .198" (12-slot Nelco) thick, .157" (20, 21-slot)

Mechanical Specifications

- 8, 12, 20 slots, other sizes available
- 6U (8, 21-slot), 7U (12, 20-slot) heights
- 160-pin, class II VME connectors
- Multi-Gig RT-2 P0 connectors

Blade	Signal
1	VPC
2	+5V
3	+5V
4	+5V
5	GND
6	GND

Rated at 10A per contact @ 95 C.

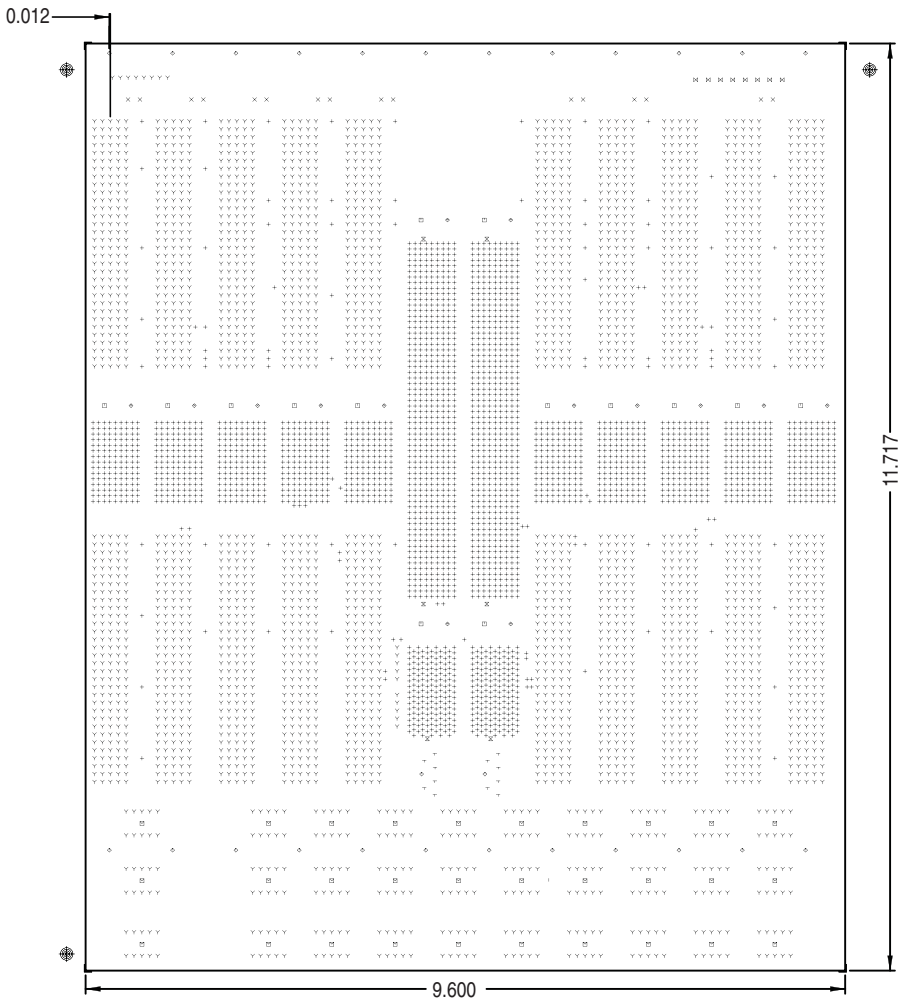
Switch Board Power 1 Connector

Connector	Part Designation	Description
P1	T1-M08-R[6]	Tier 1, monolithic, 0.8" pitch, right angle

Switch Board Sideboard Connectors

VXS Backplanes - Dual Star

Line Drawing



ORDER INFORMATION

Total Slots	Description	Width (in.)	Height (in.)	Part Number
8	2 switch card slots, 6 payload slots	6.36	10.32	101VXSD608
12	2 switch card slots, 10 payload slots	9.60	11.72	101VXSD712
12	2 switch card slots, 10 payload slots V41.6 GigE control channel implementation	9.60	11.72	101VXSE712
18	2 switch card slots, 16 payload slots	10.19	10.32	101VXSD618
20	2 switch card slots, 18 payload slots	16.00	11.72	101VXSD720
20	2 switch card slots, 18 payload slots V41.6 GigE control channel implementation	16.00	11.72	101VXSE720
21	2 switch card slots, 16 VXS, 3 VME64x	16.87	10.32	Consult Factory

VXS Backplanes - Dual Star

Product Configurations

(Example: 101VXSD720-0621R)

101	Product	Form	Slots	-_ _ _ _ _Configuration

Product
VXS = VITA 41 Compatible 7U

Topology
D = Dual Star
E = Dual Star with V41.6 GigE control channel

02-21 = Slots

Configuration

Power Interface
0 = 10 pin power tap with 6/32 screw
1 = M4 threaded stud
2 = 10 pin power taps with busbar kit
9 = Custom [9 _ _ _ sequential numbers]
X = Not applicable

J1 Connectors and Shrouds
0 = Not applicable
1 = Not applicable
2 = 160 pin 17mm with shrouds, all slots
3 = 160 pin 13mm with shrouds, all slots
4 = 160 pin 13mm without shrouds, all slots
5 = 160 pin 17mm without shrouds, all slots
6 = 160 pin 5mm without shrouds, all slots
7 = Not applicable
8 = 160 pin 17mm slot 1, 5mm all other slots
X = Not applicable

J2 Connectors and Shrouds
0 = Not applicable
1 = Not applicable
2 = 160 pin 17mm with shrouds, all slots
3 = 160 pin 13mm with shrouds, all slots
4 = 160 pin 13mm without shrouds, all slots
5 = 160 pin 17mm without shrouds, all slots
6 = 160 pin 5mm without shrouds, all slots
X = Not applicable

J0 Connectors and Shrouds
0 = No J0 connector
1 = J0 [9 x 15 connector]
2 = J0, RJ0, rear alignment pin and header (if VME64x slots present, J0 and shrouds inst.)
X = Not applicable

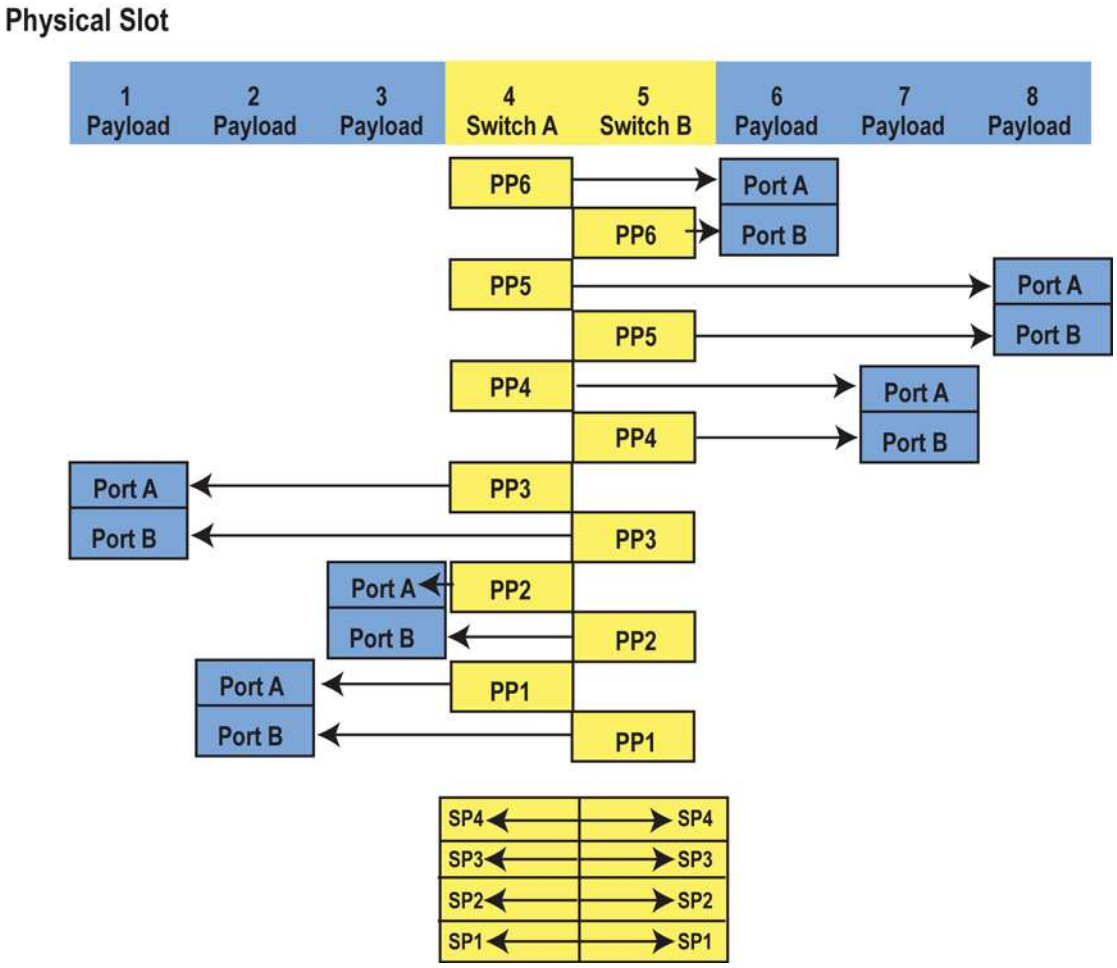
RoHS Compliance
R = RoHS compliant

Common Configurations

-0621 **-0621R**

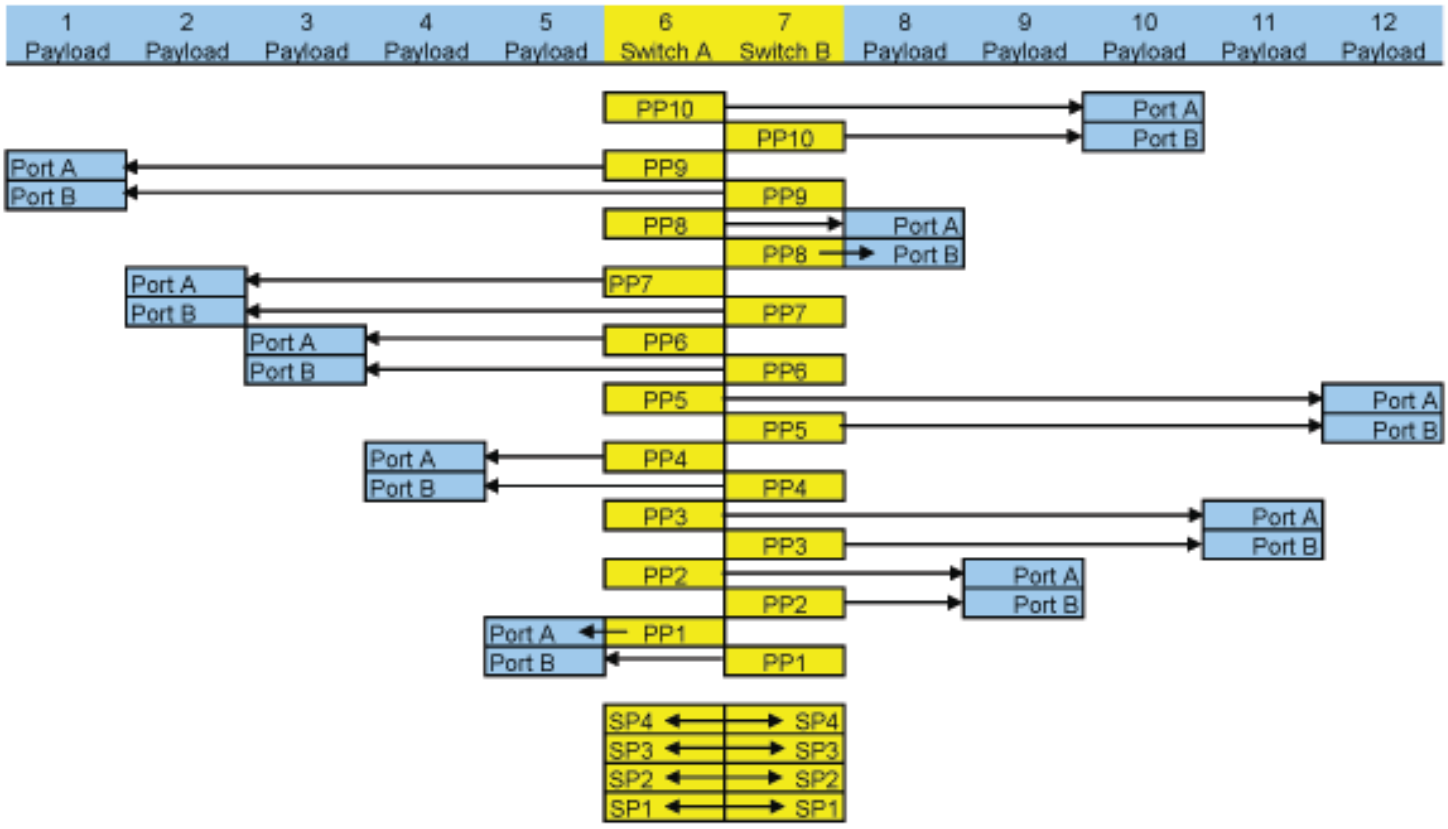
VXS Backplanes - Dual Star

8-Slot Port Mapping



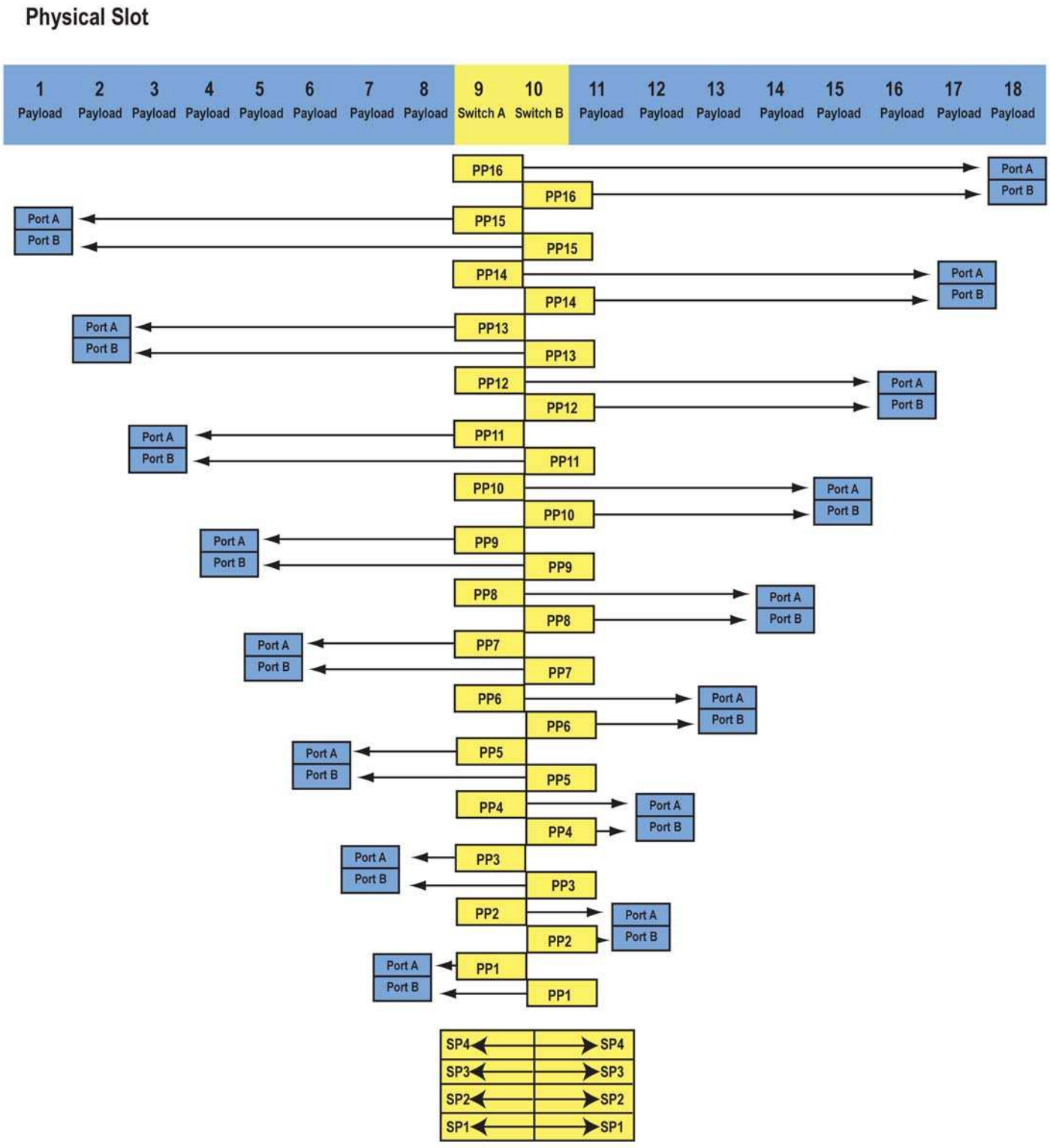
VXS Backplanes - Dual Star

12-Slot Port Mapping



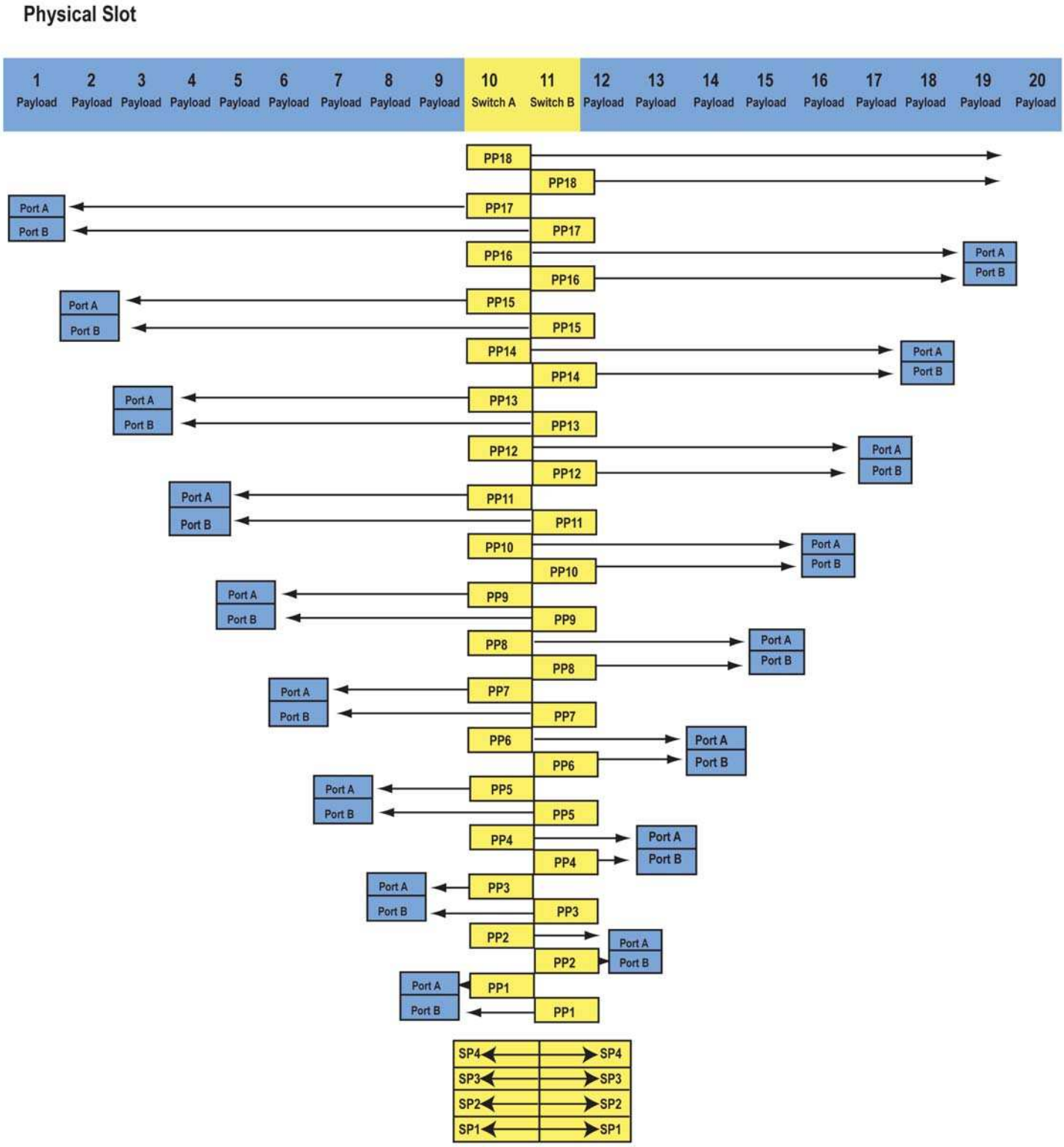
VXS Backplanes - Dual Star

18-Slot Port Mapping



VXS Backplanes - Dual Star

20-Slot Port Mapping



VXS Backplanes - Dual Star

Signal Assignments for V41.6 GigE control channel version

12-Slot

Slot	Port
Slot 1	Port 9
Slot 2	Port 7
Slot 3	Port 5
Slot 4	Port 3
Slot 5	Port 1
Slot 6	Switch
Slot 7	Switch
Slot 8	Port 2
Slot 9	Port 4
Slot 10	Port 6
Slot 11	Port 8
Slot 12	Port 10

20-Slot

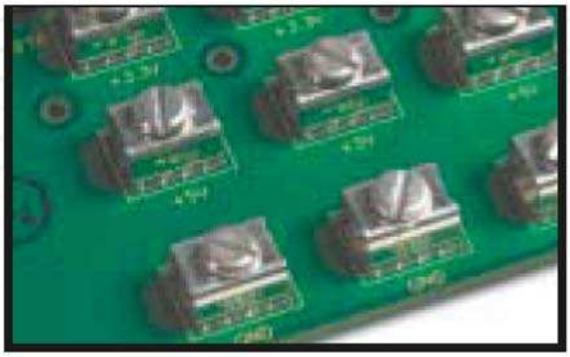
Slot	Port
Slot 1	Port 17
Slot 2	Port 15
Slot 3	Port 13
Slot 4	Port 11
Slot 5	Port 9
Slot 6	Port 7
Slot 7	Port 5
Slot 8	Port 3
Slot 9	Port 1
Slot 10	Switch
Slot 11	Switch
Slot 12	Port 2
Slot 13	Port 4
Slot 14	Port 6
Slot 15	Port 8
Slot 16	Port 10
Slot 17	Port 12
Slot 18	Port 14
Slot 19	Port 16
Slot 20	Port 20

VXS Backplanes - Dual Star

Specifications

- VITA 1.7-2003 Increased Current Level for 96 Pin & 160 Pin DIN/IEC Connector
- VITA 41.0-200x VXS VMEbus Switched Serial Standard
- VITA 41.10-2003 Live Insertion System Requirements for VITA 41 Boards Trial Use Standard
- VITA 41.11-2005 Rear Transition Module Standard for VXS VMEbus Switched Serial Payload
- ANSI/VITA 38-2003 System Management Draft Standard
- ANSI/VITA 1.1-1997 VME64x Standard as modified by VITA 41.0 (P0/J0 connector and Switch Slots)
- ANSI/VITA 1.5-2003 2eSST (Source Synchronous Transfer)

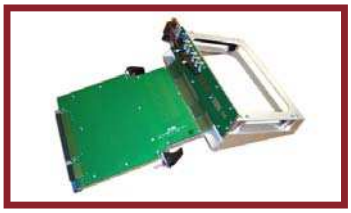
The power insertion area is below the signal slots above the bottom-mounting rail.



Power Bugs

Related Products from Elma Electronic:

- System Platforms – need a chassis for your backplane?
- VXS Embedded Computing Products – SBCs, Switches, Shelf Managers, and More.



Did you know we also offer with this VXS backplane:

- VXS Extenders, RTMs, test modules
- Thermal or backplane simulation/test, paint/silkscreen, customization, integration