VXS BACKPLANES-DUAL STAR

ELMA
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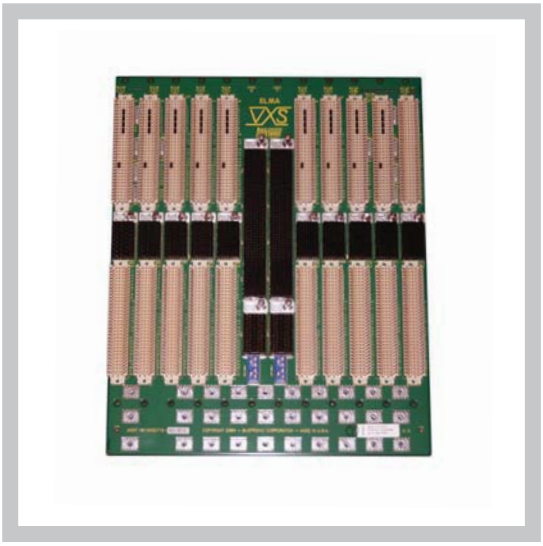

Features

- Conforms to VITA 41.0 VXS backplane specifications
- Switched serial traffic over PO of VME64x backplane
- High-speed Multi-Gig RT-2 connector for up to 6.4 Gbps signals 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.

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

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), PCI Express (VITA 41.4) and StarFabric (VITA 41.5).

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 controlled-impedance stripline design and offers VXS backplanes in 6U and 7U heights and various configurations.

Switch Board Power 1 Connector

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

Rated at 10A per contact @ 95 C.

Switch Board Sideboard Connectors

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

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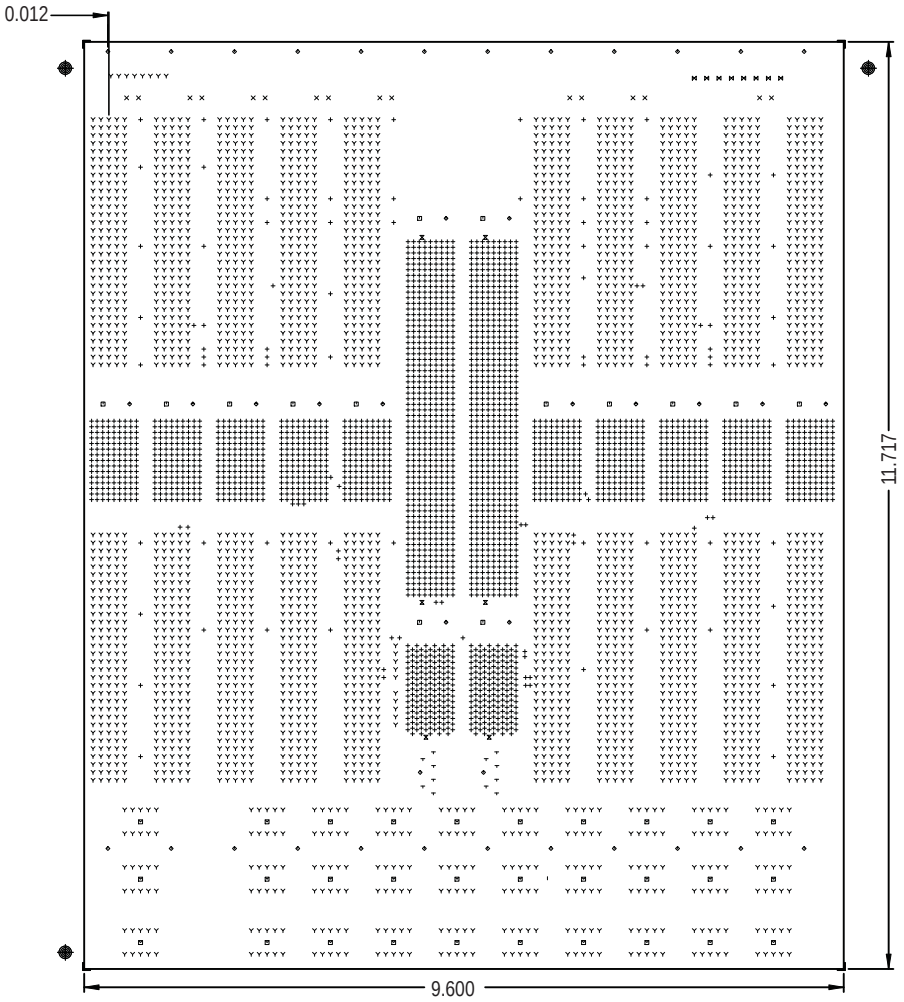
Line Drawing



Order Information

Total Slots	Switch Card Slots	Payload Slots	Width (in.)	Height (in.)	Part Number
8	2	6	6.36	10.32	101VXSD608
12	2	10	9.60	11.72	101VXSD712
18	2	16	10.19	10.32	101VXSD618
20	2	18	16.00	11.72	101VXSD720
21	2	16 VXS, 3 VME64x	16.87	10.32	Contact Factory

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VXS Backplanes - Dual Star

(Example: 101VXSD720-0621R)

101	Product	Form	Slots	-_ _ _ _ _Configuration

Product
VXS = VITA 41 Compatible 7U

Topology
D = Dual Star

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]
X = Not applicable
5 = J2, first and last slots

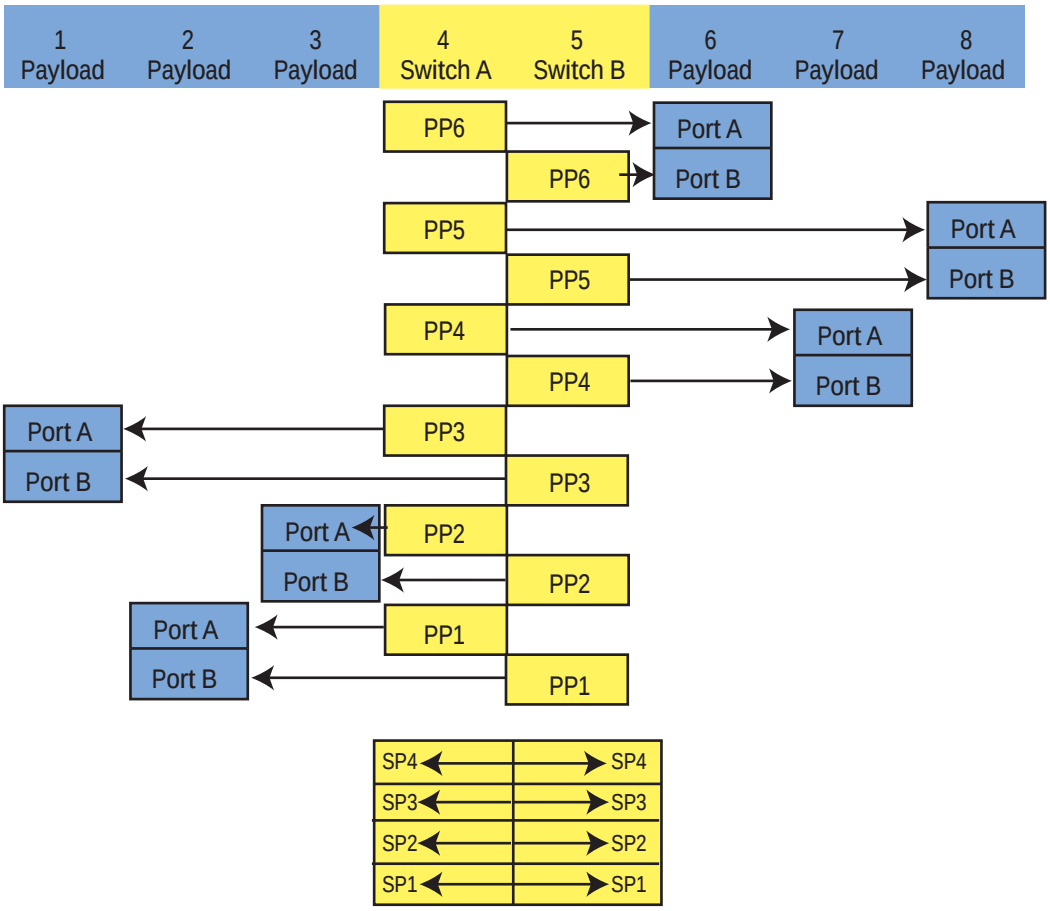
RoHS Compliance
R = RoHS compliant

Common Configuration Examples

-0621 -0621R

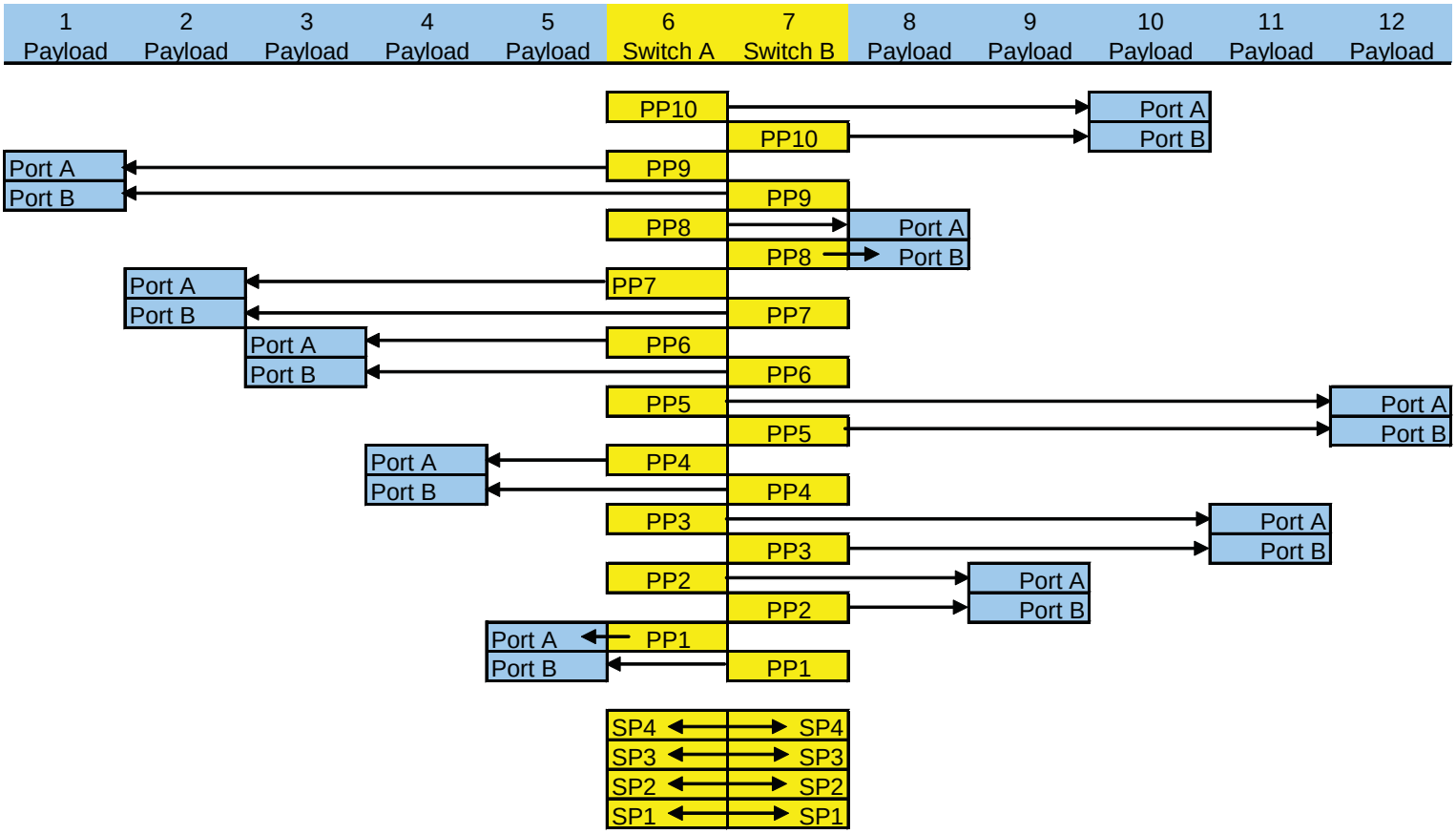
8-Slot Port Mapping

Physical Slot



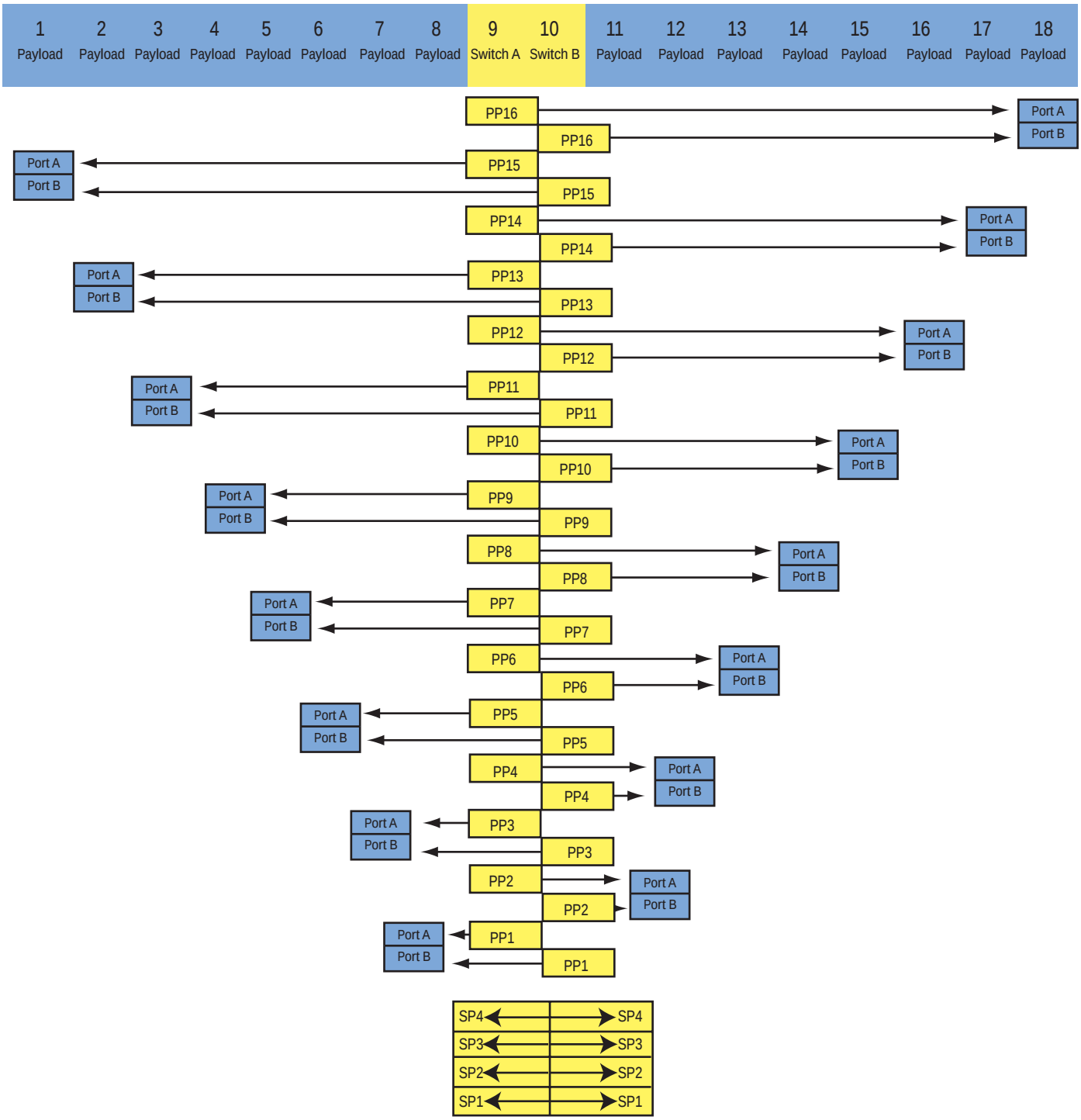
12-Slot Port Mapping

Physical Slot



18-Slot Port Mapping

Physical Slot



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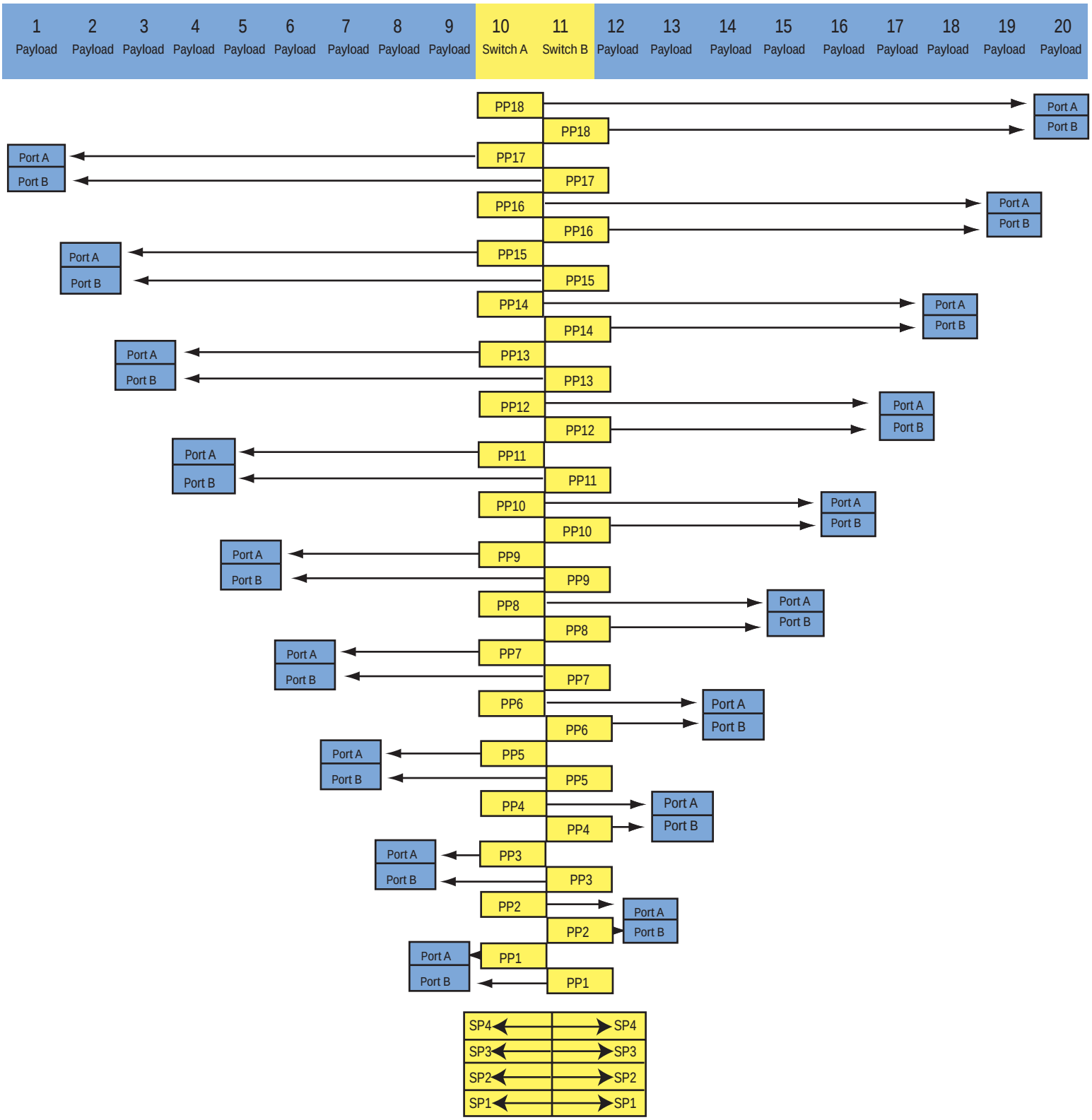
20-Slot Port Mapping

Physical Slot



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System Monitoring Header

System Monitoring : P1 (8-way Header) having the pin assignment according to the figure below.

P1	
1	GND
2	+5V
3	ACFAIL
4	SYSFAIL
5	SYSRESET
6	+3.3V
7	+12V
8	-12V

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