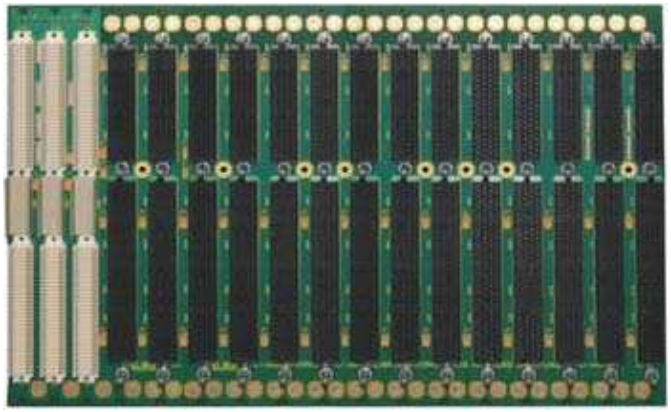
6U OpenVPX 17-slot BKP6-HYB17-11.2.11-n Backplane



Description

VPX is a high-performance architecture using switched serial fabrics, typically in a mesh topology that offers tremendous bandwidth potential. While different from the traditional VME64 P0/P1/P2 backplane architecture, VPX can be compatible with legacy systems in “hybrid” backplanes. The VMEbus signals can go across the MultiGig high-speed connectors to the legacy VME/64x slots.

The 17-slot (14 VPX slots + 3 legacy VME64x slots) has a slot pitch of 0.8” in slots 1 -3 and 1.0” for the 14 VPX slots 4-17. Used commonly as a development backplane, the 17-slot VPX Hybrid has 3 mesh clusters of 4 slots and 2 other VPX slots. As shown in the diagram, cluster A also employs the VME bussing on the J2 connector per VITA 46.1.

The flexible design offers a combination of VME/64x only, VPX w/VME bussed slots, meshed VPX slots, and VPX-only slots.

Features

- Compliant to ANSI/VITA VITA 65 Rev 1.0
- Compliant to the latest VITA 46 Specifications
- Flexible configurations provide ideal use as development backplane
- Hybrid VPX backplane with legacy VME64x slots
- Rugged Eurocard form factor in 6U height
- Provides built in ESD ground protection in every slot
- Signal Integrity studies available upon request

Board Specifications

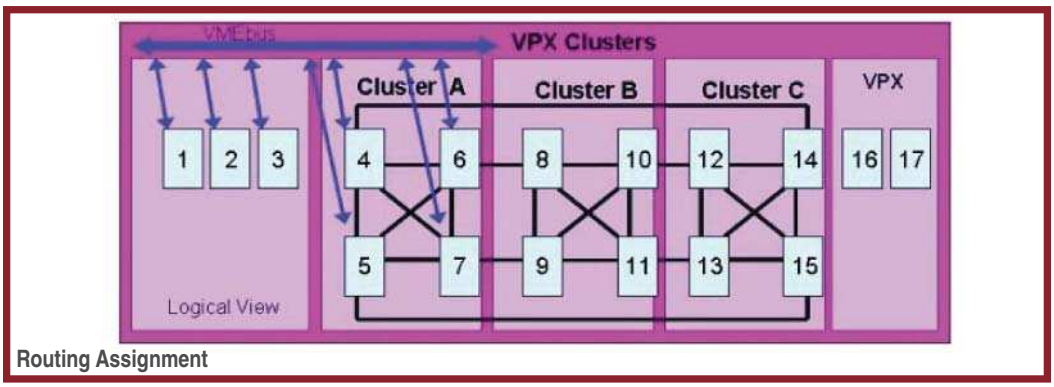
- 18 layer
- 2 oz. power and ground
- PCB FR-4 or equivalent
- PCB .220”

Mechanical Specifications

- 6U height
- 17 slots (14 VPX, 3 VME64x)
- MultiGig RT-2 connectors

Signal Assignments

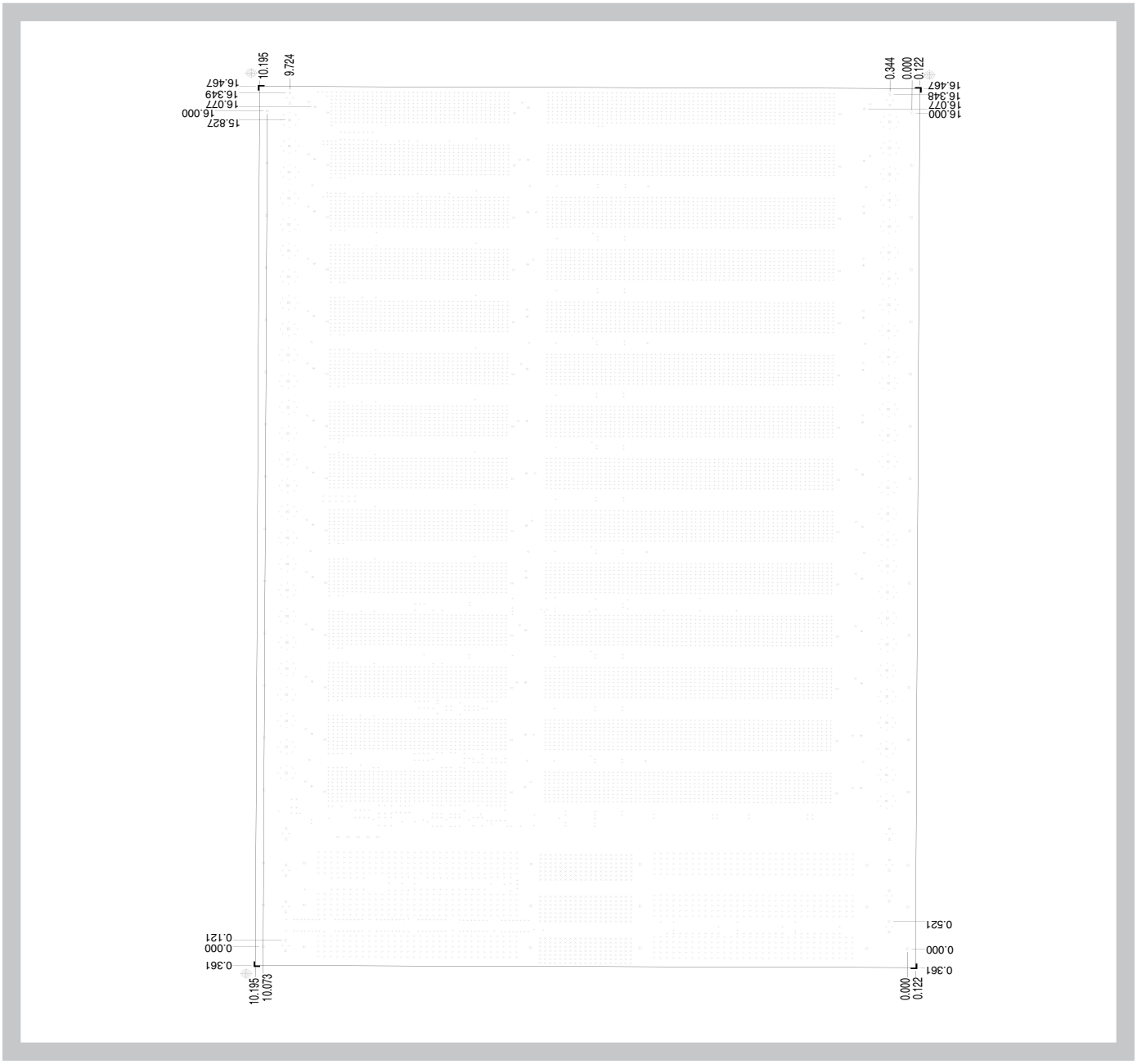
Slots	Description	Slot pitch
1	VME64x system slot per VITA 1 and VITA 1.1	.8"
2-3	VME64x in accordance with VITA 1 and VITA 1.1.	.8"
4-15	VPX in accordance with VITA 46.0 in 3 clusters of 4 meshed and as noted below	1.0"
16-17	VPX in accordance with VITA 46.0 without fabric bussing	1.0"
Rear IO	Slots 4-7 have RTM connectors per VITA 46.10 behind positions J3, J4, J5 and J7	n/a
	Slots 8-15 have RTM connectors per VITA 46.10 behind positions for J2, J3, J4, J5 and J7	n/a
	Slots 16-17 have full RTM I/O connectors per VITA 46.10 behind positions J1, J2, J3, J4, J5 and J6	n/a
4-7	Per VITA 46.1 parallel VME and continue the VME64x bus from slots 1 thru 3.	n/a
4-17	Per VITA 46.0, 46.3 and 46.10 as well as 46.1 where specified.	n/a



Routing Assignment

6U OpenVPX 17-slot BKP6-HYB17-11.2.11-n Backplane

Line Drawing

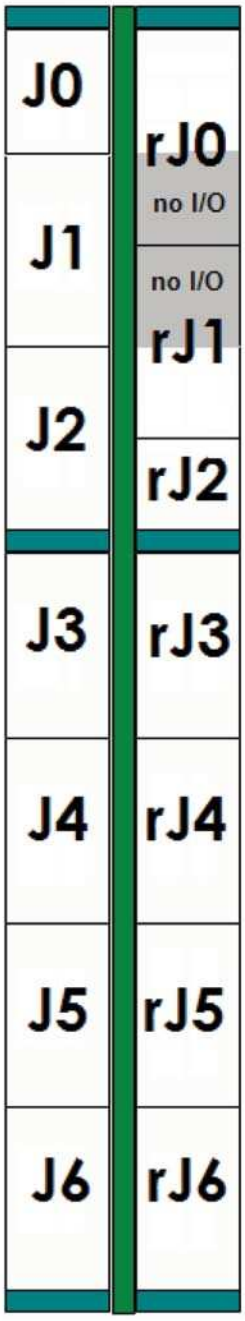


Order Information

Height	Total Slots	Description	Profile Number	Part Number
6U	17	17 slots (14 VPX + 3 legacy VME64x) of 4 slots and 2 end VPX slots are configurable 3 VPX mesh clusters	BKP6-HYB17-11.2.11-1	1OVX617NX1-1301R
6U	17	17 slots (14 VPX + 3 legacy VME64x) of 4 slots and 2 end VPX slots are configurable 3 VPX mesh clusters, no RTM connectors	BKP6-HYB17-11.2.11-1	1OVX617NX1-1300R

6U OpenVPX 17-slot BKP6-HYB17-11.2.11-n Backplane

Connector Positions



J0 Signal Assignments

	Row I	Row H	Row G	Row F	Row E	Row D	Row C	Row B	Row A
1	Vs1	Vs1	Vs1	Vs1	No Pad	Vs2	Vs2	Vs2	Vs2
2	Vs1	Vs1	Vs1	Vs1	No Pad	Vs2	Vs2	Vs2	Vs2
3	Vs3	Vs3	Vs3	Vs3	No Pad	Vs3	Vs3	Vs3	Vs3
4	GND	SM2	SM3	GND	-12V_Aux	GND	SYSRESET*	NVMRO	GND
5	GND	GAP*	GA4*	GND	3.3V_Aux	GND	SM0	SM1	GND
6	GND	GA3*	GA2*	GND	+12V_Aux	GND	GA1*	GA0*	GND
7	TCK	GND	GND	TDO	TDI	GND	GND	TMS	TRST*
8	GND	REF_CLK-	REF_CLK+	GND	GND	AUX_CLK-	AUX_CLK+	GND	GND

J1/P1 Signal Assignments Slots 4-15

Plug-In Module P1		Row G	Row F	Row E Even	Row E Odd	Row D	Row C	Row B Even	Row B Odd	Row A
Bplane J1		Row i	Row h	Row g	Row f	Row e	Row d	Row c	Row b	Row a
1	Data Plane Port 1	GDiscrete1	GND	GND-J2	DP01-TD-	DP01-TD+	GND	GND-J2	DP01-RD-	DP01-RD+
2		GND	DP01-T1-	DP01-T1+	GND-J2	GND	DP01-R1-	DP01-R1+	GND-J2	GND
3		P1-VBAT	GND	GND-J2	DP01-T2-	DP01-T2+	GND	GND-J2	DP01-R2-	DP01-R2+
4		GND	DP01-T3-	DP01-T3+	GND-J2	GND	DP01-R3-	DP01-R3+	GND-J2	GND
5	Data Plane Port 2	SYS_CON*	GND	GND-J2	DP02-TD-	DP02-TD+	GND	GND-J2	DP02-RD-	DP02-RD+
6		GND	DP02-T1-	DP02-T1+	GND-J2	GND	DP02-R1-	DP02-R1+	GND-J2	GND
7		Reserved	GND	GND-J2	DP02-T2-	DP02-T2+	GND	GND-J2	DP02-R2-	DP02-R2+
8		GND	DP02-T3-	DP02-T3+	GND-J2	GND	DP02-R3-	DP02-R3+	GND-J2	GND
9	Data Plane Port 3	UID	GND	GND-J2	DP03-TD-	DP03-TD+	GND	GND-J2	DP03-RD-	DP03-RD+
10		GND	DP03-T1-	DP03-T1+	GND-J2	GND	DP03-R1-	DP03-R1+	GND-J2	GND
11		UID	GND	GND-J2	DP03-T2-	DP03-T2+	GND	GND-J2	DP03-R2-	DP03-R2+
12		GND	DP03-T3-	DP03-T3+	GND-J2	GND	DP03-R3-	DP03-R3+	GND-J2	GND
13	Data Plane Port 4	UID	GND	GND-J2	DP04-TD-	DP04-TD+	GND	GND-J2	DP04-RD-	DP04-RD+
14		GND	DP04-T1-	DP04-T1+	GND-J2	GND	DP04-R1-	DP04-R1+	GND-J2	GND
15		Maskable Reset*	GND	GND-J2	DP04-T2-	DP04-T2+	GND	GND-J2	DP04-R2-	DP04-R2+
16		GND	DP04-T3-	DP04-T3+	GND-J2	GND	DP04-R3-	DP04-R3+	GND-J2	GND

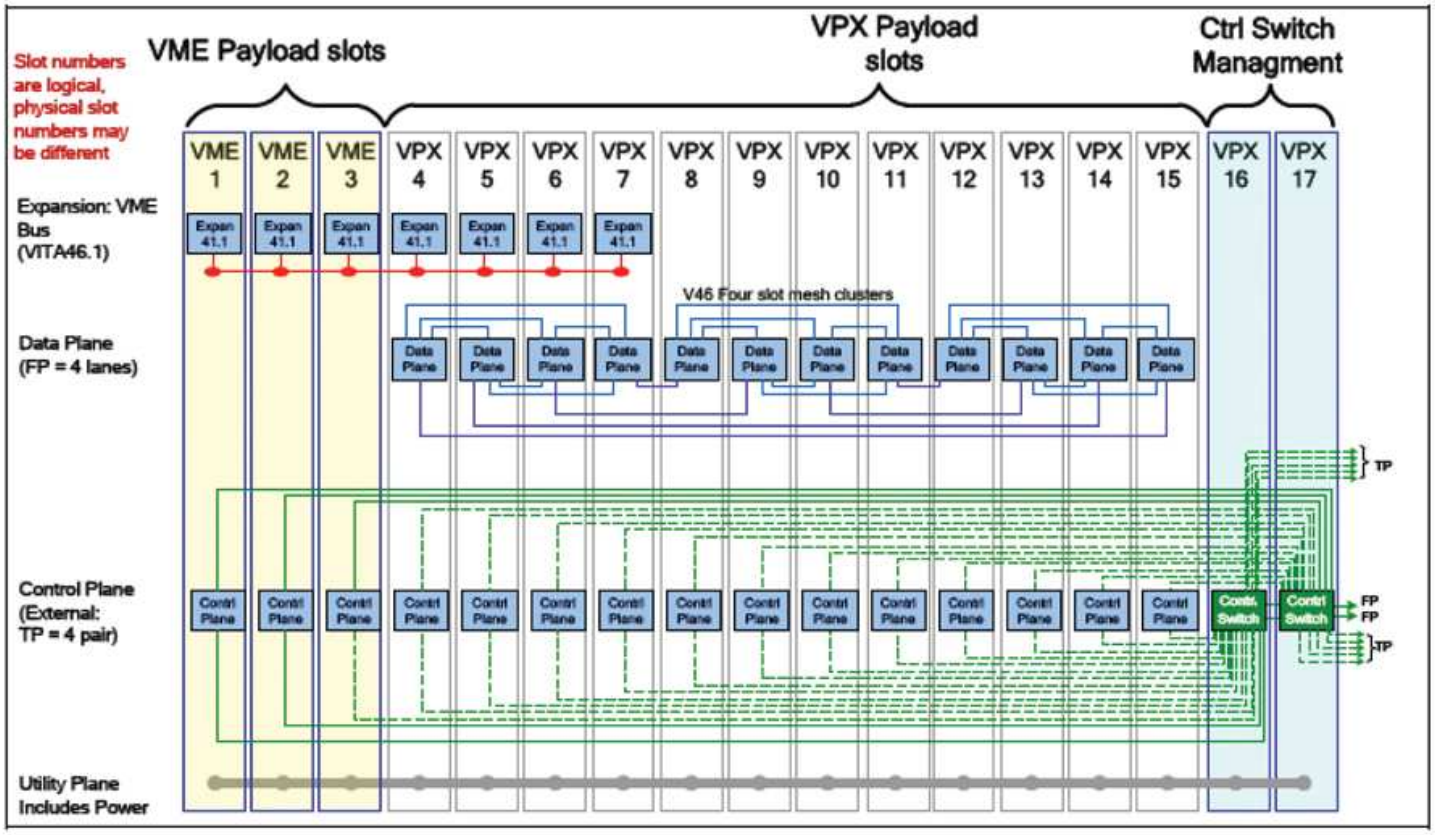
*Slots 16 and 17 are user defined

J2/P2 - J6/P6 Signal Assignments

Plug in Module P2-P6				Row G	Row F	Row E Even	Row E Odd	Row D	Row C	Row B Even	Row B Odd	Row A
Backplane J2-J6				Row i	Row h	Row g	Row f	Row e	Row d	Row c	Row b	Row a
1	X16 using [15:0]	x8 using [7:0]	x4 using [3:0]	SEwafer1	GND	GND-J2	LN0-TD-	LN0-TD+	GND	GND-J2	LN0-RD-	LN0-RD+
2				GND	LN1-TD-	LN1-TD+	GND-J2	GND	LN1-RD-	LN1-RD+	GND-J2	GND
3				SEwafer3	GND	GND-J2	LN2-TD-	LN2-TD+	GND	GND-J2	LN2-RD-	LN2-RD+
4				GND	LN3-TD-	LN3-TD+	GND-J2	GND	LN3-RD-	LN3-RD+	GND-J2	GND
5			x4 using [7:4]	SEwafer5	GND	GND-J2	LN4-TD-	LN4-TD+	GND	GND-J2	LN4-RD-	LN4-RD+
6				GND	LN5-TD-	LN5-TD+	GND-J2	GND	LN5-RD-	LN5-RD+	GND-J2	GND
7				SEwafer7	GND	GND-J2	LN6-TD-	LN6-TD+	GND	GND-J2	LN6-RD-	LN6-RD+
8				GND	LN7-TD-	LN7-TD+	GND-J2	GND	LN7-RD-	LN7-RD+	GND-J2	GND
9		x8 using[15:8]	x4 using [11:8]	SEwafer9	GND	GND-J2	LN8-TD-	LN8-TD+	GND	GND-J2	LN8-RD-	LN8-RD+
10				GND	LN9-TD-	LN9-TD+	GND-J2	GND	LN9-RD-	LN9-RD+	GND-J2	GND
11				SEwafer11	GND	GND-J2	LN10-TD-	LN10-TD+	GND	GND-J2	LN10-RD-	LN10-RD+
12				GND	LN11-TD-	LN11-TD+	GND-J2	GND	LN11-RD-	LN11-RD+	GND-J2	GND
13			x4 using[15:12]	SEwafer13	GND	GND-J2	LN12-TD-	LN12-TD+	GND	GND-J2	LN12-RD-	LN12-RD+
14				GND	LN13-TD-	LN13-TD+	GND-J2	GND	LN13-RD-	LN13-RD+	GND-J2	GND
15				SEwafer15	GND	GND-J2	LN14-TD-	LN14-TD+	GND	GND-J2	LN14-RD-	LN14-RD+
16				GND	LN15-TD-	LN15-TD+	GND-J2	GND	LN15-RD-	LN15-RD+	GND-J2	GND

6U OpenVPX 17-slot BKP6-HYB17-11.2.11-n Backplane

Backplane Topology

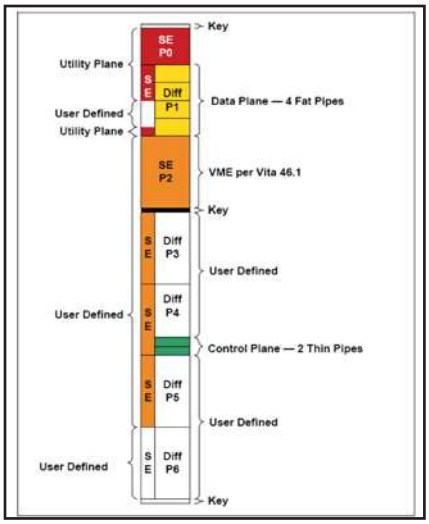


Backplane Profile

Profile name	Mechanical		VPX Slot Profiles and Section			Channel Gbaud Rate	
	Pitch (in)	RTM Conn	Payload Slot 4 - 7	Payload Slot 8 - 15	Switch	Control Plane	Data Plane
BKP6-HYB17-11.2.11-1	1.0	VITA 46.10	SLT6-BRG-4F1V2T-10.5.1	SLT6-PAY-4F2T-10.2.2	SLT6-SWH-4F24T-10.4.4	1.25	3.125
BKP6-HYB17-11.2.11-2	1.0	VITA 46.10	SLT6-BRG-4F1V2T-10.5.1	SLT6-PAY-4F2T-10.2.2	SLT6-SWH-4F24T-10.4.4	1.25	5.0
BKP6-HYB17-11.2.11-3	1.0	VITA 46.10	SLT6-BRG-4F1V2T-10.5.1	SLT6-PAY-4F2T-10.2.2	SLT6-SWH-4F24T-10.4.4	1.25	6.25

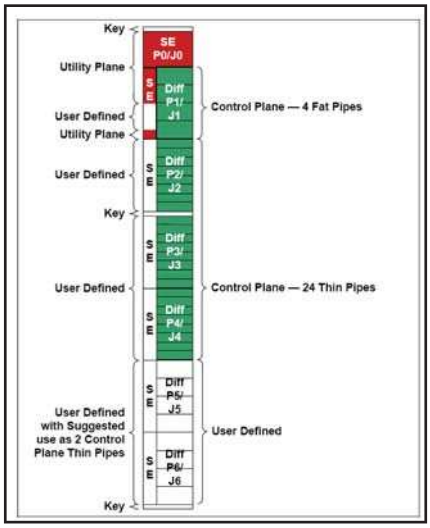
6U OpenVPX 17-slot BKP6-HYB17-11.2.11-n Backplane

VME Slot Profile



SLT6-BRG-4F1V2T-10.5.1

Switch Slot Profile



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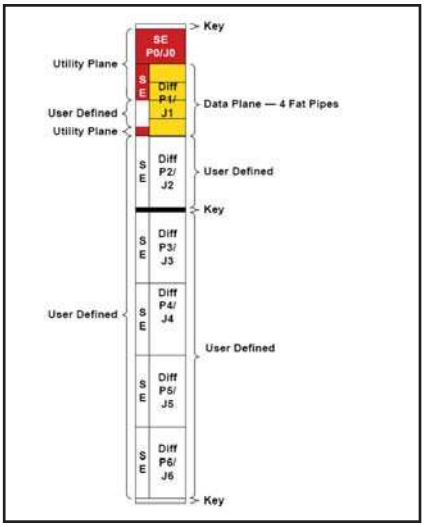
Payload Slot Profile



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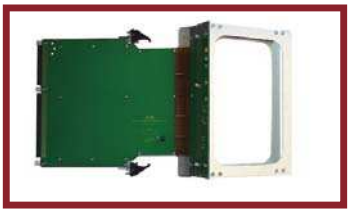

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