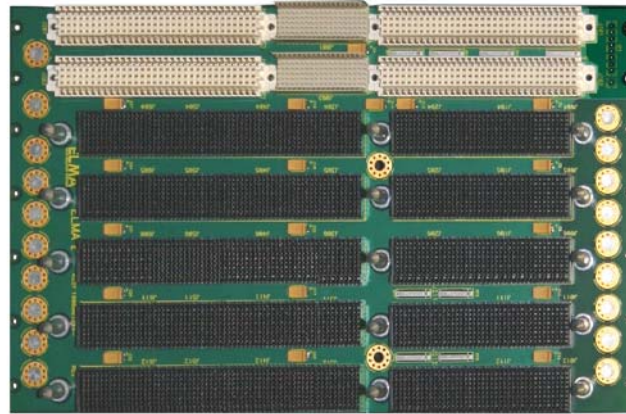


# 6U VPX Hybrid Backplane



## 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 7 slot (5 VPX slots + 2 legacy VME64x slots) has a slot pitch of 0.8” in slots 1 -2 and 1.0” for the 5 VPX slots 3-7. Slots 3-4 have VME bussing on the J2 connector per VITA 46.1 and slots 3-7 have a full mesh implemented on the J1 connector. VPX slots 3-7 conform to IEEE 1101.10 and VITA 46.0, 46.3 and 46.10 as well as 46.1 where specified to be fully meshed with four fabric channels – one channel from each slot to each of the other four slots. 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 the latest VITA 46 Specifications
- Offers a highly flexible interconnect scheme that can support either differential or single ended connection
- 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

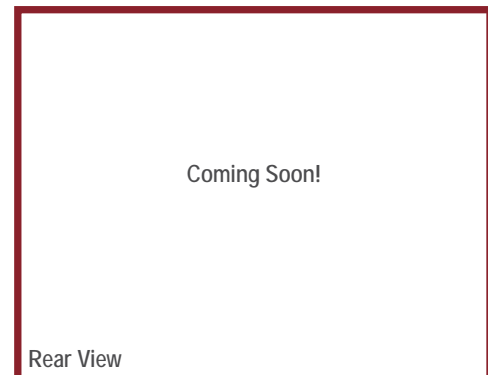
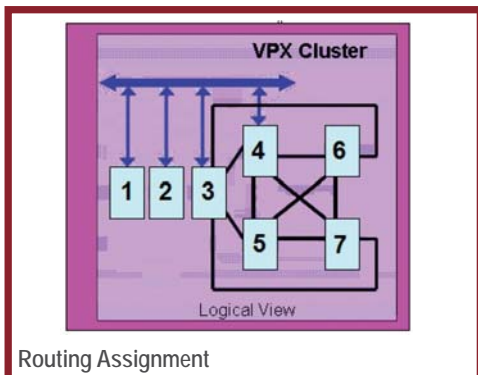
- 16 layer stripline design
- 2 oz. power and ground
- PCB FR-4 or equivalent
- PCB .213” thick

## Mechanical Specifications

- 6U height
- 7 slots (5 VPX, 2 VME64x)
- MultiGig RT-2 connectors

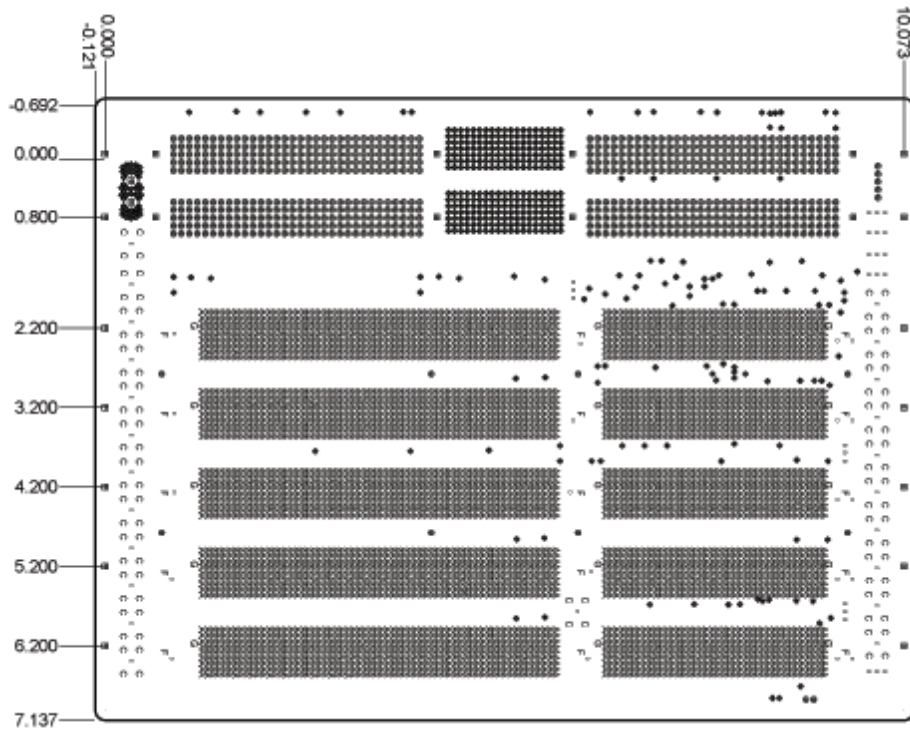
## Signal Assignments

Slots	Description	Slot pitch
1	VME64x system slot per VITA 1 and VITA 1.1	.8"
2	VME64x in accordance with VITA 1 and VITA 1.1.	.8"
3-4	VPX in accordance with VITA 46.0 with parallel VME bussing on J2 per VITA 46.1	1.0"
5-7	VPX slots in accordance with VITA 46.0 with a full mesh implemented on fabric connector J1	1.0"
3-4	VPX slots 3-4 implement VITA 46.1 parallel VME on the J2 connector and single ended signal in row “I” where specified	1.0"
Rear IO	All user defined connector positions in VPX slots 3 – 7 will support differential IO and have RTM connectors installed	n/a
3-7	Per VITA 46.0, supports 4 fully meshed fat pipes in the J1 connector from slots 3-7	n/a



# 6U VPX Hybrid Backplane

## Line Drawing

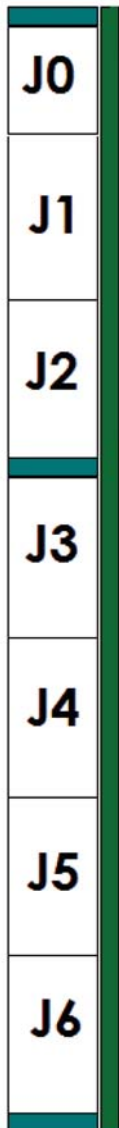


## Order Information

Height	Total Slots	Description	Part Number
6U	7	5 VPX mesh slots with 2 legacy VME64x	101VPX607V-1250R

# 6U VPX Hybrid Backplane

## Connector Positions



## J0 Signal Assignments

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

## J2/P2 - J6/P6 Signal Assignments\*

Plug in Module P2-P6	Row G	Row F	Row E		Row D	Row C	Row B		Row A
			Even	Odd			Even	Odd	
Backplane J2-J6	Row i	Row h	Row g	Row f	Row e	Row d	Row c	Row b	Row a
1	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	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	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	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

\* The J2 signal assignments listed above are for slots 5, 6 and 7 only. Slots 3 and 4 are listed in the table below per VITA 46.1.

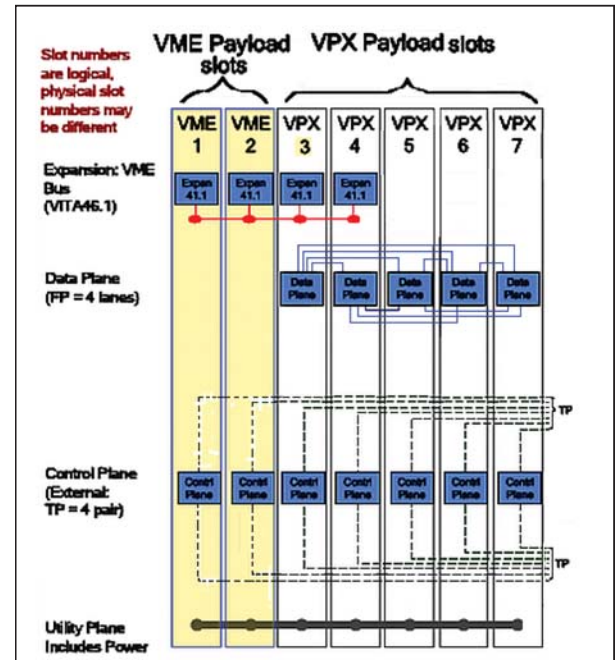
\*\* Although 46.3 is referenced, this configuration of differential signals is common to VITA 46.0, 46.2, 46.3, 46.4, 46.5, 46.6...

# 6U VPX Hybrid Backplane

## J2 Signal Assignments – Slots 3 & 4

	Row I	Row H	Row G	Row F	Row E	Row D	Row C	Row B	Row A
1	GND	D08	ACFAIL*	GND	BBSY*	GND	SYSFAIL*	D00	GND
2	GND	D09	BG2IN*	GND	BCLR*	GND	BR0*	D01	GND
3	GND	D10	BG2OUT*	GND	BG0IN*	GND	BR1*	D02	GND
4	GND	D11	BG3IN*	GND	BG0OUT*	GND	BR2*	D03	GND
5	GND	D12	BG3OUT*	GND	BG1IN*	GND	BR3*	D04	GND
6	GND	D13	BERR*	GND	BG1OUT*	GND	AM0	D05	GND
7	GND	D14	LWORD*	GND	SYSCLK	GND	AM1	D06	GND
8	GND	D15	AM5	GND	DS1*	GND	AM2	D07	GND
9	GND	A22	A23	GND	DS0*	GND	AM3	AM4	GND
10	GND	A20	A21	GND	WRITE*	GND	IRQ7*	A07	GND
11	GND	A18	A19	GND	DTACK*	GND	IRQ6*	A06	GND
12	GND	A16	A17	GND	AS*	GND	IRQ5*	A05	GND
13	GND	A14	A15	GND	IACK*	GND	IRQ4*	A04	GND
14	GND	A12	A13	GND	IACKIN*	GND	IRQ3*	A03	GND
15	GND	A10	A11	GND	IACKOUT*	GND	IRQ2*	A02	GND
16	GND	A08	A09	GND	RETRY*	GND	IRQ1*	A01	GND

## Backplane Topology



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