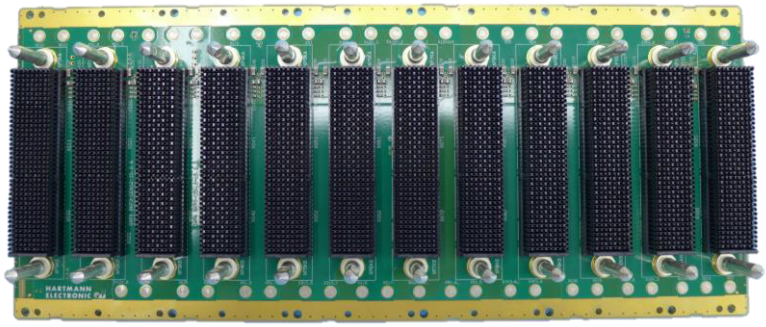
3U OpenVPX BACKPLANE **BKP3-CEN12-15.2.6-3**	**VITA 46** **VITA 65**	

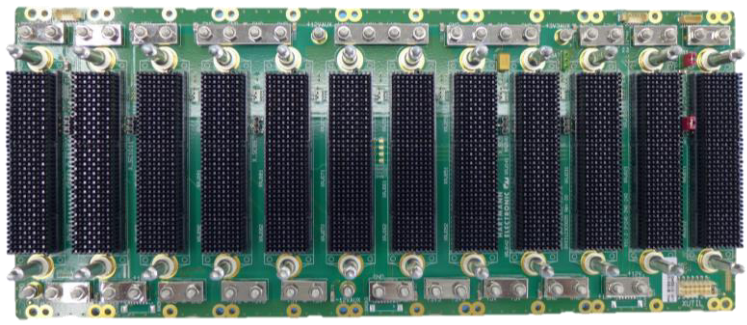
Key Features:

- Compliant to VITA 46.0 baseline specification
- Compliant to VITA 65 OpenVPX, BKP3-CEN12-15.2.6-3
- 12 Slots VPX, 10 Payload Slots, 2 Switch Slots
- Configuration Data Plane: Double Star (2x FPs)
- Configuration Control Plane: Double Star (2x UTPs)
- M3 studs for power entry
- PCB size 128.50mm x 301.65mm x 5.4 mm
- 5 HP from slot to slot (25.40 mm)
- Flexible keying and alignment mechanism
- with geographical address pins
- Reference clock
- Auxilary clock
- System Reset
- With JTAG connector on first slot (JT1)
- System Management Interface on the backplane (I2CA, I2CB)
- Non-Volatile Memory Read Only signal set by Jumper BR1
- Battery backup option setting by Jumper XBAT. Vbat external or connected to 3.3 AUX.
- Max. Input current per backplane VS1:VS2:VS3 = 240A : 240A : 240A
- Operating temperature: -40° - +85°C
- Storage temperature: -55°C - +85°C
- Flammability rating: UL94-V0
- Custom assembly or modification on request

Front side



Back side



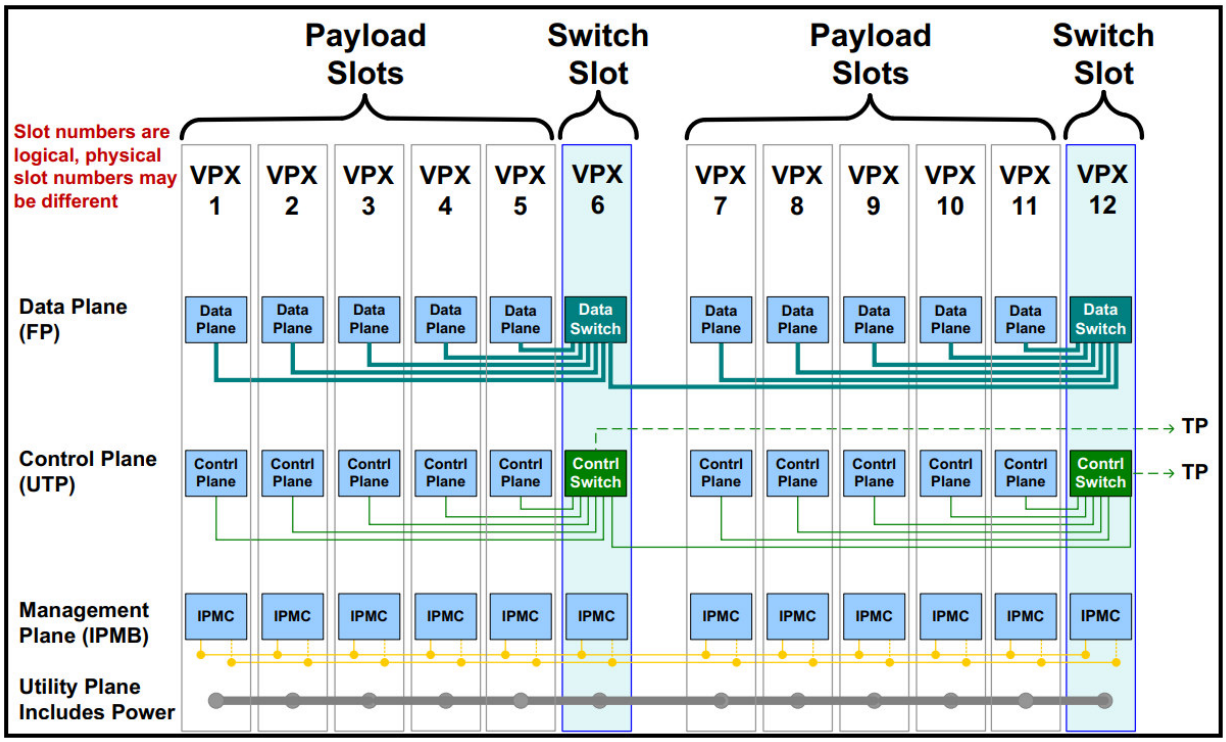
- **Order number: B193102670**

3U OpenVPX BACKPLANE **BKP3-CEN12-15.2.6-3**	**VITA 46** **VITA 65**	

1) Topology: 12-Slot — BKP3-CEN12-15.2.6-3 (10 Payload + 2 Switch)

Profile Payload slot: SLT3-PAY-2F2U-14.2.3 / MOD3-PAY-2F2U-16.2.3

Profile Switch slots: SLT3-SWH-6F6U-14.4.1 / MOD3-SWH-6F6U-16.4.1



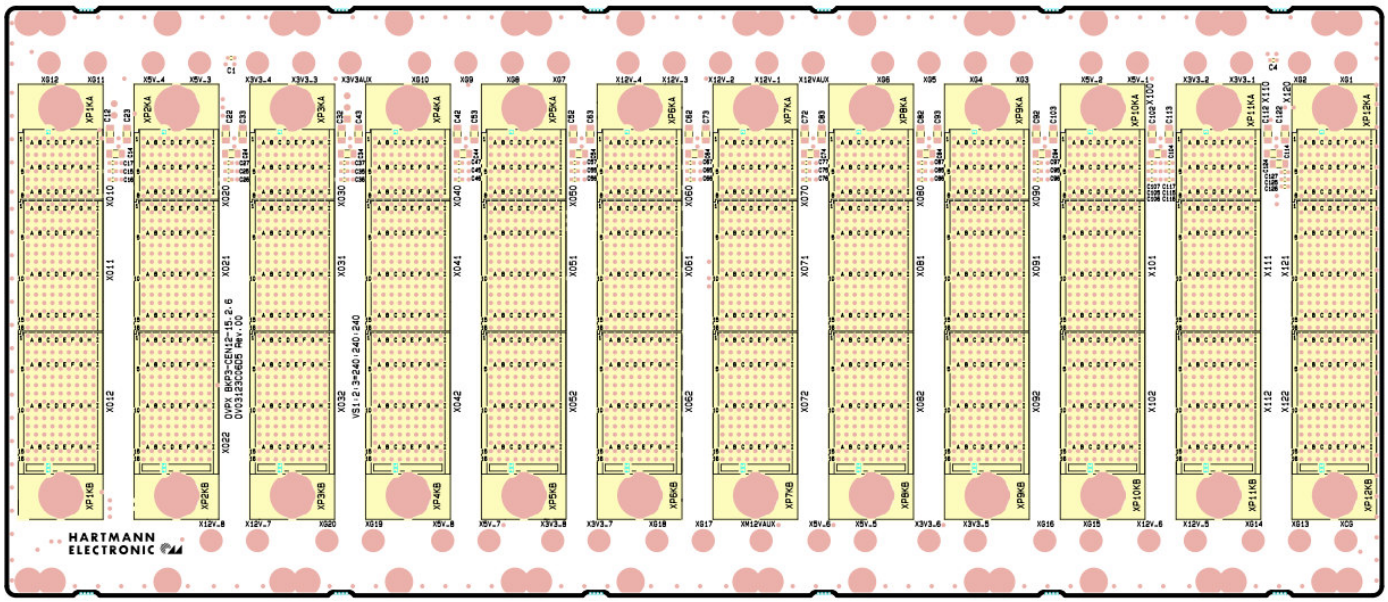
2) Data Plane Port connections

Logical Payload Slot	Payload Data Plane Port	Switch Data Plane Port
1	DP01	Switch Slot 6 - DP01
2	DP01	Switch Slot 6 - DP02
3	DP01	Switch Slot 6 - DP03
4	DP01	Switch Slot 6 - DP04
5	DP01	Switch Slot 6 - DP05
7	DP01	Switch Slot 12 - DP01
8	DP01	Switch Slot 12 - DP02
9	DP01	Switch Slot 12 - DP03
10	DP01	Switch Slot 12 - DP04
11	DP01	Switch Slot 12 - DP05

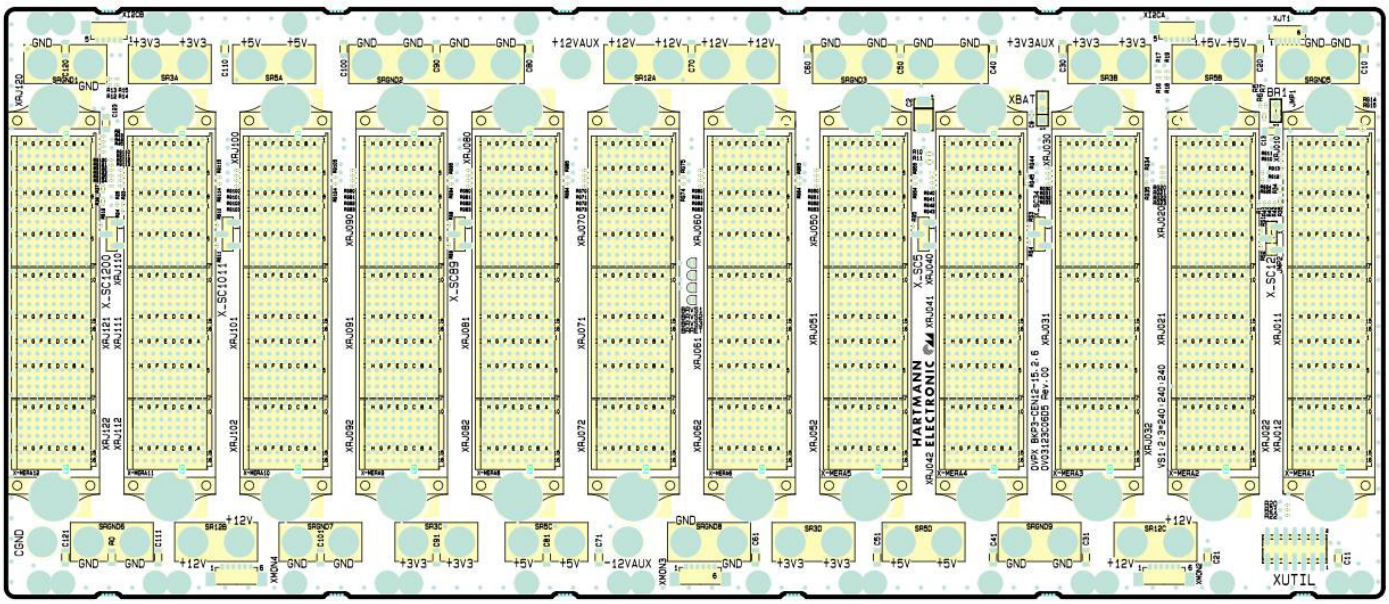
3U OpenVPX BACKPLANE	**VITA 46**	
BKP3-CEN12-15.2.6-3	**VITA 65**	

3) Drawings

Front side



Back side



4) Pin Assignment

Pin Assignment VPX J0 (Utility Connector)

	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

VS1=12V , VS2=3.3V , VS3=5V

Payload Slot Profile SLT3-PAY-2F2U-14.2.3— P1 & J1

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	X8 x4 / 2x2 / 4x1	GDiscrete1	GND	GND-J1	DP01-TD0-	DP01-TD0+	GND	GND-J1	DP01-RD0-	DP01-RD0+
2			GND	DP01-TD1-	DP01-TD1+	GND-J1	GND	DP01-RD1-	DP01-RD1+	GND-J1	GND
3			P1-VBAT	GND	GND-J1	DP01-TD2-	DP01-TD2+	GND	GND-J1	DP01-RD2-	DP01-RD2+
4			GND	DP01-TD3-	DP01-TD3+	GND-J1	GND	DP01-RD3-	DP01-RD3+	GND-J1	GND
5	Data Plane Port 2		SYS_CON*	GND	GND-J1	DP02-TD0-	DP02-TD0+	GND	GND-J1	DP02-RD0-	DP02-RD0+
6			GND	DP02-TD1-	DP02-TD1+	GND-J1	GND	DP02-RD1-	DP02-RD1+	GND-J1	GND
7			Reserved	GND	GND-J1	DP02-TD2-	DP02-TD2+	GND	GND-J1	DP02-RD2-	DP02-RD2+
8		x4 / 2x2 / 4x1	GND	DP02-TD3-	DP02-TD3+	GND-J1	GND	DP02-RD3-	DP02-RD3+	GND-J1	GND
9	User Defined		UD	GND	GND-J1	UD	UD	GND	GND-J1	UD	UD
10			GND	UD	UD	GND-J1	GND	UD	UD	GND-J1	GND
11			UD	GND	GND-J1	UD	UD	GND	GND-J1	UD	UD
12			GND	UD	UD	GND-J1	GND	UD	UD	GND-J1	GND
13			UD	GND	GND-J1	UD	UD	GND	GND-J1	UD	UD
14			GND	UD	UD	GND-J1	GND	UD	UD	GND-J1	GND
15	Control Plane		Maskable Reset*	GND	GND-J1	CPutp02-TD-	CPutp02-TD+	GND	GND-J1	CPutp02-RD-	CPutp02-RD+
16			GND	CPutp01-TD-	CPutp01-TD+	GND-J1	GND	CPutp01-RD-	CPutp01-RD+	GND-J1	GND

Payload Slot Profile SLT3-PAY-2F2U-14.2.3— P2 & J2

This connector is all User Defined pins. See Section 6.3.3 for requirements and pin assignments Concerning connectors that are all User Defined.
Connector Example Combined Plug-In Module & Backplane - Differential

Backplane Jn	Row i	Row h	Row g	Row f	Row e	Row d	Row c	Row b	Row a
1	UD	UD	UD	UD	UD	GND	UD	UD	UD
2	GND	UD	UD	GND	UD	UD	UD	UD	GND
3	UD	UD	UD	UD	UD	GND	UD	UD	UD
4	GND	UD	UD	GND	UD	UD	UD	UD	GND
5	UD	UD	UD	UD	UD	GND	UD	UD	UD
6	GND	UD	UD	GND	UD	UD	UD	UD	GND
7	UD	UD	UD	UD	UD	GND	UD	UD	UD
8	GND	UD	UD	GND	UD	UD	UD	UD	GND
9	UD	UD	UD	UD	UD	GND	UD	UD	UD
10	GND	UD	UD	GND	UD	UD	UD	UD	GND
11	UD	UD	UD	UD	UD	GND	UD	UD	UD
12	GND	UD	UD	GND	UD	UD	UD	UD	GND
13	UD	UD	UD	UD	UD	GND	UD	UD	UD
14	GND	UD	UD	GND	UD	UD	UD	UD	GND
15	UD	UD	UD	UD	UD	GND	UD	UD	UD
16	GND	UD	UD	GND	UD	UD	UD	UD	GND

Switch Slot Profile SLT3-SWH-6F6U-14.4.1— P1 & J1

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-J1	DP01-TD0-	DP01-TD0+	GND	GND-J1	DP01-RD0-	DP01-RD0+
2		GND	DP01-TD1-	DP01-TD1+	GND-J1	GND	DP01-RD1-	DP01-RD1+	GND-J1	GND
3		P1-VBAT	GND	GND-J1	DP01-TD2-	DP01-TD2+	GND	GND-J1	DP01-RD2-	DP01-RD2+
4		GND	DP01-TD3-	DP01-TD3+	GND-J1	GND	DP01-RD3-	DP01-RD3+	GND-J1	GND
5	Data Plane Port 2	SYS_CON*	GND	GND-J1	DP02-TD0-	DP02-TD0+	GND	GND-J1	DP02-RD0-	DP02-RD0+
6		GND	DP02-TD1-	DP02-TD1+	GND-J1	GND	DP02-RD1-	DP02-RD1+	GND-J1	GND
7		Reserved	GND	GND-J1	DP02-TD2-	DP02-TD2+	GND	GND-J1	DP02-RD2-	DP02-RD2+
8		GND	DP02-TD3-	DP02-TD3+	GND-J1	GND	DP02-RD3-	DP02-RD3+	GND-J1	GND
9	Data Plane Port 3	UD	GND	GND-J1	DP03-TD0-	DP03-TD0+	GND	GND-J1	DP03-RD0-	DP03-RD0+
10		GND	DP03-TD1-	DP03-TD1+	GND-J1	GND	DP03-RD1-	DP03-RD1+	GND-J1	GND
11		UD	GND	GND-J1	DP03-TD2-	DP03-TD2+	GND	GND-J1	DP03-RD2-	DP03-RD2+
12		GND	DP03-TD3-	DP03-TD3+	GND-J1	GND	DP03-RD3-	DP03-RD3+	GND-J1	GND
13	Data Plane Port 4	UD	GND	GND-J1	DP04-TD0-	DP04-TD0+	GND	GND-J1	DP04-RD0-	DP04-RD0+
14		GND	DP04-TD1-	DP04-TD1+	GND-J1	GND	DP04-RD1-	DP04-RD1+	GND-J1	GND
15		Maskable Reset*	GND	GND-J1	DP04-TD2-	DP04-TD2+	GND	GND-J1	DP04-RD2-	DP04-RD2+
16		GND	DP04-TD3-	DP04-TD3+	GND-J1	GND	DP04-RD3-	DP04-RD3+	GND-J1	GND

3U OpenVPX BACKPLANE	**VITA 46**	
BKP3-CEN12-15.2.6-3	**VITA 65**	

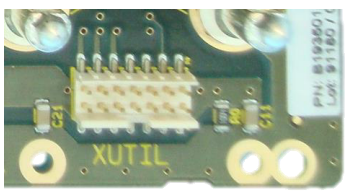
Switch Slot Profile SLT3-SWH-6F6U-14.4.1— P2 & J2

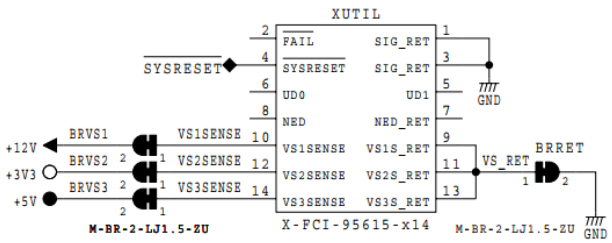
Plug-In Module P2		Row G	Row F	Row E Even	Row E Odd	Row D	Row C	Row B Even	Row B Odd	Row A
Bplane J2		Row i	Row h	Row g	Row f	Row e	Row d	Row c	Row b	Row a
1	Data Plane Port 5	UD	GND	GND-J2	DP05-TD0-	DP05-TD0+	GND	GND-J2	DP05-RD0-	DP05-RD0+
2		GND	DP05-TD1-	DP05-TD1+	GND-J2	GND	DP05-RD1-	DP05-RD1+	GND-J2	GND
3		UD	GND	GND-J2	DP05-TD2-	DP05-TD2+	GND	GND-J2	DP05-RD2-	DP05-RD2+
4		GND	DP05-TD3-	DP05-TD3+	GND-J2	GND	DP05-RD3-	DP05-RD3+	GND-J2	GND
5	Data Plane Port 6	UD	GND	GND-J2	DS01-TD0-	DS01-TD0+	GND	GND-J2	DS01-RD0-	DS01-RD0+
6		GND	DS01-TD1-	DS01-TD1+	GND-J2	GND	DS01-RD1-	DS01-RD1+	GND-J2	GND
7		UD	GND	GND-J2	DS01-TD2-	DS01-TD2+	GND	GND-J2	DS01-RD2-	DS01-RD2+
8		GND	DS01-TD3-	DS01-TD3+	GND-J2	GND	DS01-RD3-	DS01-RD3+	GND-J2	GND
9	Control Plane Ports 1 - 6	UD	GND	GND-J2	CSutp01-TD-	CSutp01-TD+	GND	GND-J2	CSutp01-RD-	CSutp01-RD+
10		GND	CPutp05-TD-	CPutp05-TD+	GND-J2	GND	CPutp05-RD-	CPutp05-RD+	GND-J2	GND
11		UD	GND	GND-J2	CPutp04-TD-	CPutp04-TD+	GND	GND-J2	CPutp04-RD-	CPutp04-RD+
12		GND	CPutp03-TD-	CPutp03-TD+	GND-J2	GND	CPutp03-RD-	CPutp03-RD+	GND-J2	GND
13		UD	GND	GND-J2	CPutp02-TD-	CPutp02-TD+	GND	GND-J2	CPutp02-RD-	CPutp02-RD+
14		GND	CPutp01-TD-	CPutp01-TD+	GND-J2	GND	CPutp01-RD-	CPutp01-RD+	GND-J2	GND
15	UD	UD	GND	GND-J2	UD	UD	GND	GND-J2	UD	UD
16		GND	UD	UD	GND-J2	GND	UD	UD	GND-J2	GND

5) Current Capability:

- +12V 240 A
- +3.3V 240 A
- +5V 240 A
- -12V AUX 12 A
- +12V AUX 12 A
- +3.3V AUX 12 A

6) UTILITY (Connector XUTIL)

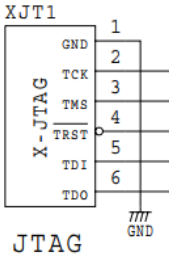




Connector FCI 95615-014TRLF

7) JTAG (Connector XJT1)

Consider: JTAG only at Slot 1



Connector JST BM06B-SRSS-TB(LF)(SN)

8) SYSCON

By setting the signal Syscon to GND the system slot is defined. In general the system slot is slot 1.

There are additional connectors X_SC34, X_SC5 X_SC89, X_SC1011 and X_SC1200 so as you can select any slot as system slot.

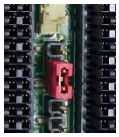
We offer 2 options for setting:

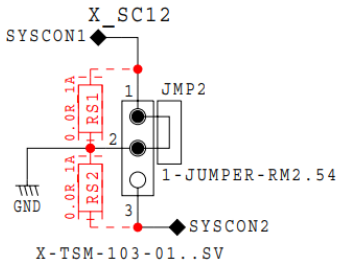
- Jumper (standard)

- 0 Ohm Resistor for rugged applications

X_SC12

1	SYSCON1
2	GND
3	SYSCON2





9) I2C Connector

There are 2 connectors for system-management I2CA and I2CB.

For customer specific board assembly Zero-Ohm resistors available.

Usable voltages for I2C are 3.3V-AUX

I2CA

1	I2CA_SCL
2	GND
3	I2CA_SDA
4	I2CA_PWR
5	NC

I2CB

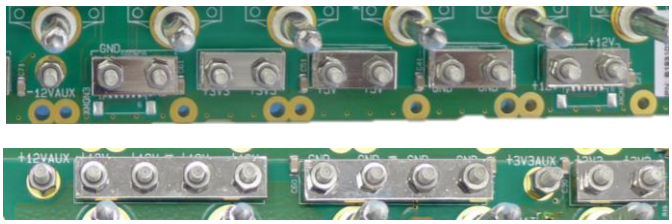
1	I2CB_SCL
2	GND
3	I2CB_SDA
4	I2CB_PWR
5	NC

3U OpenVPX BACKPLANE	**VITA 46**	
BKP3-CEN12-15.2.6-3	**VITA 65**	

10) Power Studs M3 / AUX

The main operating voltages (+12V, 3.3V,+5V) and GND are supplied with M3 screw terminals.

The auxiliary operating voltages are supplied via M3 Screw terminal. Optimal daughter board supply and trouble-free operation are ensured by the arrangement of the feed modules on the backplane.

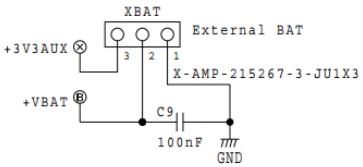


11) XBAT

Normally a battery voltage with approximately 3V is available at Pin VBAT of connector VPX-J1. The voltage is externally accessible with connector XBAT, Pin2 **or** internally using 3.3V_AUX by setting a Jumper between Pin2 and Pin3.

XBAT

1	GND
2	+VBAT
3	+3.3V_AUX

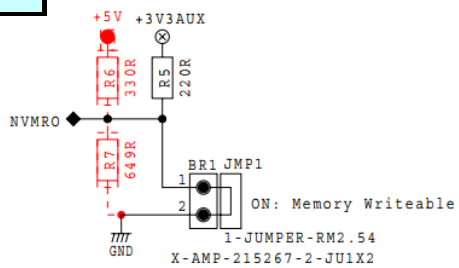


12) NVMRO

If Jumper BR1 is closed NVRMO is set to memory writeable.

BR1

1	NVMRO
2	GND



Germany
Hartmann Electronic GmbH
Phone: +49 711 13 98 90
Fax: +49 711 8 66 11 91
vertrieb.he@kontron.com
www.hartmann-electronic.com

USA
Kontron
Fabian Hemmann
Phone: +1 937-324-2420
Mobile: +1 937 346 7878
fabian.hemmann@us.kontron.com
www.hartmann-electronic.com

France
Kontron Modular Computers S.A.S.
Serge Pichat
Phone: +33 (0)9 66 44 03 15
Mobile: +33 (0)6 82 62 16 00
Serge.pichat@kontron.com
www.hartmann-electronic.com

India
Hartmann Electronic GmbH
Vivek Deshpande
Phone: +1 91 20 66 74 51 23
Vivek.Deshpande@kontron.com
www.hartmann-electronic.com