3U OpenVPX BACKPLANE with Coaxial Extension

BKP3-CEN03-15.2.9 (modified)

VITA 46
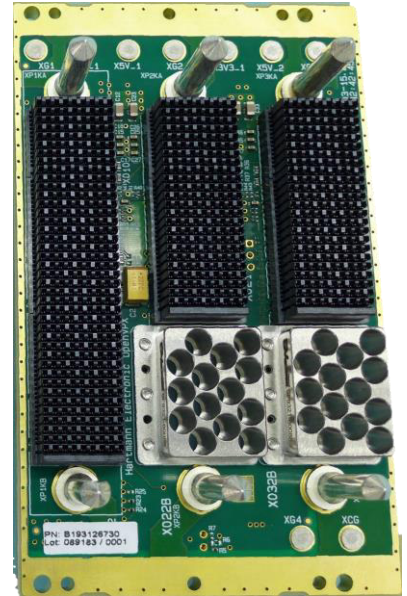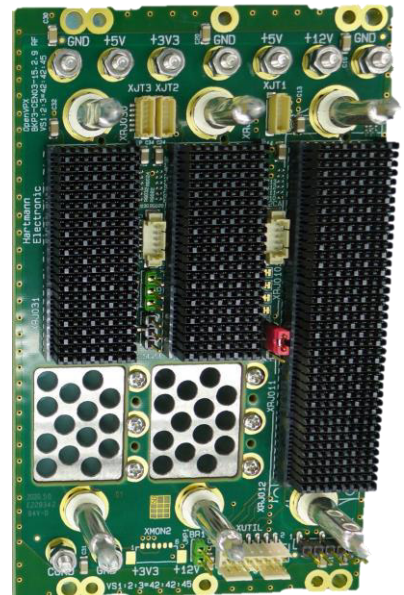**VITA 67.3 (C)**

Key Features:

- Compliant to VITA 46.0 baseline specification

- Based on VITA 65 BKP3-CEN03-15.2.9-n, but modified

- Compliant to VITA 67.3 Coaxial Interconnect On VPX, Spring-Loaded Contact on Backplane

- 1+2 Slots VPX, 1 Payload Slot, 2 Peripheral Slots with coax

- Single Star X4 (2 FPs) configuration for Data Plane

- M3 studs for power entry

- PCB size 128.50 mm x 73.13 mm 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 VAUX.

- Max. Input current per backplane
  VS1:VS2:VS3 = 42A : 42A : 45A

- Operating temperature: -40°C - +85°C

- Storage temperature: -55°C - +85°C

- Flammability rating: UL94-V0

- Custom assembly or modification on request

Front side

Back side

- **Order number: B193126730**

**3U OpenVPX BACKPLANE
with Coaxial Extension**

BKP3-CEN03-15.2.9 (modified)
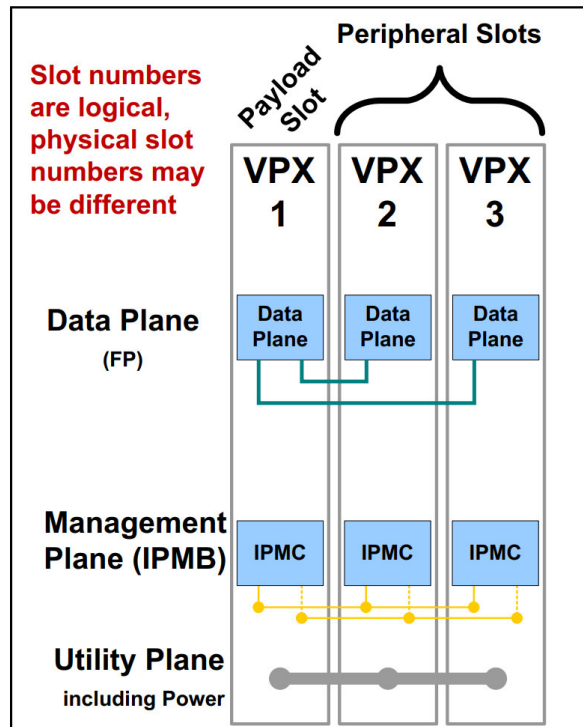
**VITA 46
VITA 67.3 (C)**

1) Topology: 3-Slot — BKP3-CEN03-15.3.5-3 (1 Payload + 2 Peripheral with coax)

Profile Payload slot without coax: SLT3-PAY-2F-14.2.7 / MOD3-PAY-2F-16.2.7-n
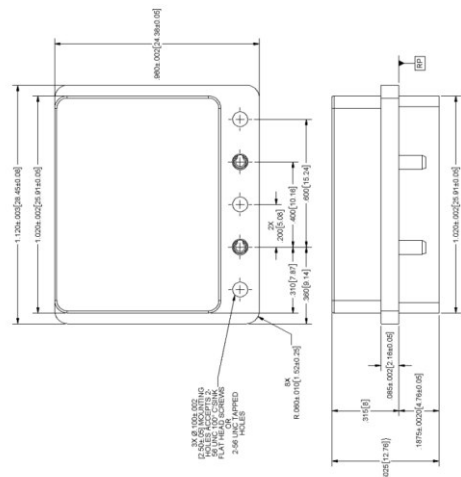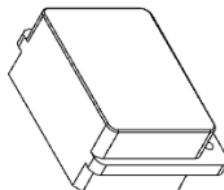
Profile Peripheral slot with coax: SLT3-PER-1F-14.3.2 / MOD3-PER-1F-16.3.2-n modified

2) Coaxial/RF Extension

This Backplane features VITA 67.3 RF Connector Modules in two of the slots.

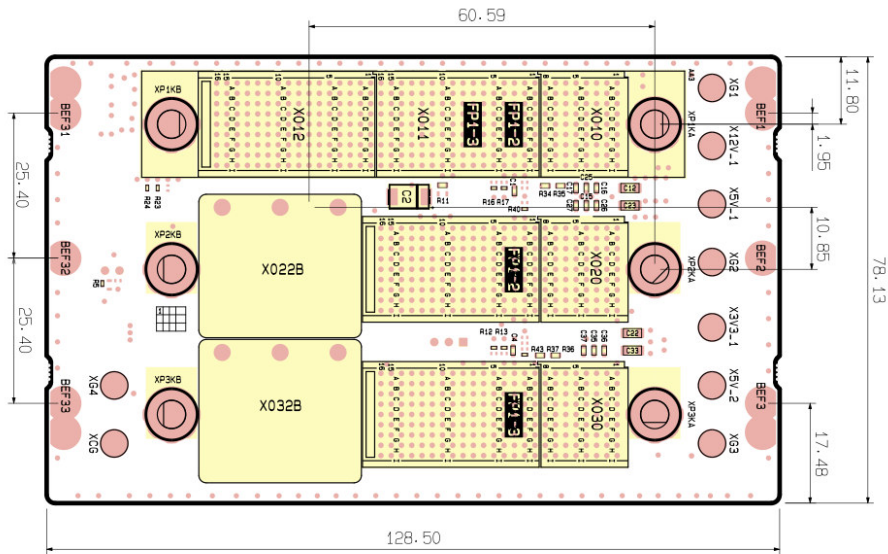Coaxial Backplane Module by Amphenol (part number SF9321-60086)

3) Drawings

Front side

Back side
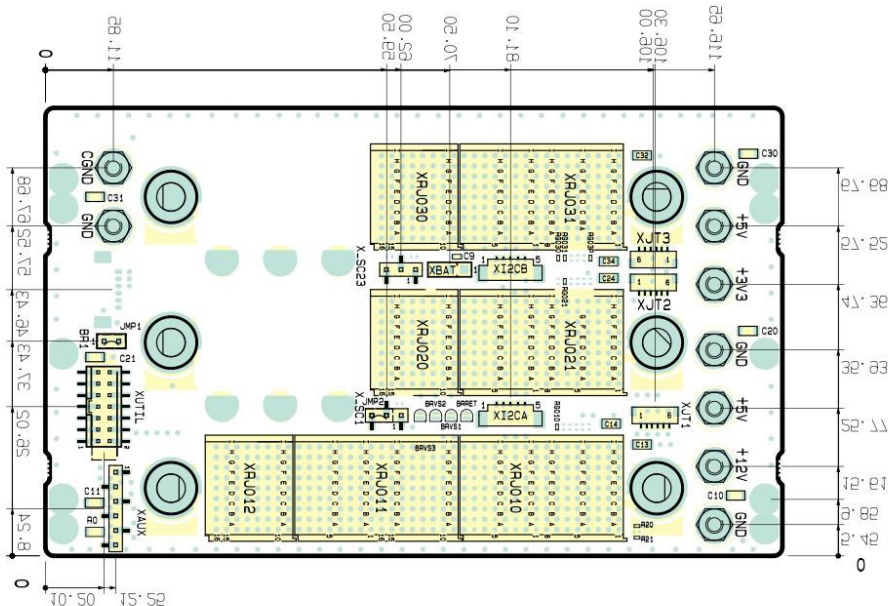
4) Pin Assignment

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 without coax SLT3-PAY-2F-14.2.7— P1 & J1

Plug-In Module **P1**		Row G	Row F	Row E		Row D	Row C	Row B		Row A
				Even	Odd			Even	Odd	
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-T0-	DP01-T0+	GND	GND-J1	DP01-R0-	DP01-R0+
2		GND	DP01-T1-	DP01-T1+	GND-J1	GND	DP01-R1-	DP01-R1+	GND-J1	GND
3		P1-VBAT	GND	GND-J1	DP01-T2-	DP01-T2+	GND	GND-J1	DP01-R2-	DP01-R2+
4		GND	DP01-T3-	DP01-T3+	GND-J1	GND	DP01-R3-	DP01-R3+	GND-J1	GND
5	Data Plane Port 2	SYS_CON*	GND	GND-J1	DP02-T0-	DP02-T0+	GND	GND-J1	DP02-R0-	DP02-R0+
6		GND	DP02-T1-	DP02-T1+	GND-J1	GND	DP02-R1-	DP02-R1+	GND-J1	GND
7		Reserved	GND	GND-J1	DP02-T2-	DP02-T2+	GND	GND-J1	DP02-R2-	DP02-R2+
8		GND	DP02-T3-	DP02-T3+	GND-J1	GND	DP02-R3-	DP02-R3+	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		Maskable Reset*	GND	GND-J1	UD	UD	GND	GND-J1	UD	UD
16		GND	UD	UD	GND-J1	GND	UD	UD	GND-J1	GND

Payload Slot Profile without coax SLT3-PAY-1D-14.2.7— 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

Peripheral Slot Profile with coax SLT3-PER-1F-14.3.2— 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-T0-	DP01-T0+	GND	GND-J1	DP01-R0-	DP01-R0+
2		GND	DP01-T1-	DP01-T1+	GND-J1	GND	DP01-R1-	DP01-R1+	GND-J1	GND
3		P1-VBAT	GND	GND-J1	DP01-T2-	DP01-T2+	GND	GND-J1	DP01-R2-	DP01-R2+
4		GND	DP01-T3-	DP01-T3+	GND-J1	GND	DP01-R3-	DP01-R3+	GND-J1	GND
5	User Defined	SYS_CON*	GND	GND-J1	UD	UD	GND	GND-J1	UD	UD
6		GND	UD	UD	GND-J1	GND	UD	UD	GND-J1	GND
7		Reserved	GND	GND-J1	UD	UD	GND	GND-J1	UD	UD
8		GND	UD	UD	GND-J1	GND	UD	UD	GND-J1	GND
9		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		Maskable Reset*	GND	GND-J1	UD	UD	GND	GND-J1	UD	UD
16		GND	UD	UD	GND-J1	GND	UD	UD	GND-J1	GND

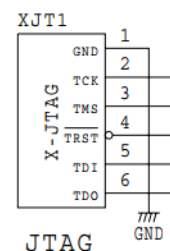## 5) Current Capability:

- +12V   42 A
- +3.3V   42 A
- +5V   45 A
- -12V AUX   3 A
- +12V AUX   3 A
- +3.3V AUX   3 A

6) UTILITY (Connector XUTIL)
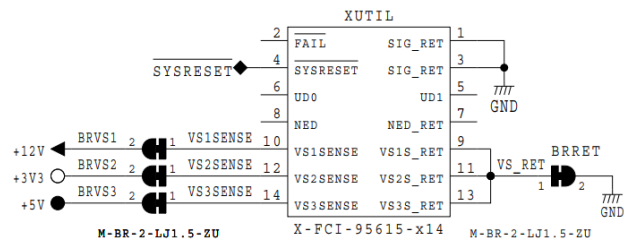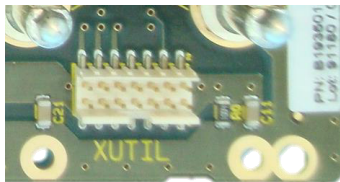
7) JTAG (Connector XJT1)

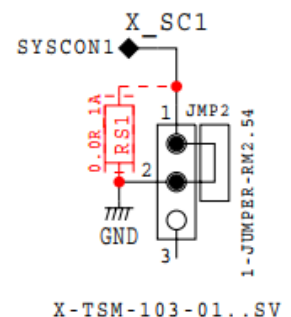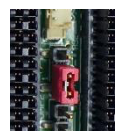Consider: JTAG only at Slot 1, Payload slot

8) SYSCON

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

There is an additional connector X_SC23, 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

10) Power Connections via M3 studs

The main operating voltages and GND are supplied with M3 studs.

The auxiliary operating voltages are supplied via 6 pole plug connector. Optimal daughter board supply and trouble-free operation are ensured by the arrangement of the feed modules on the backplane.
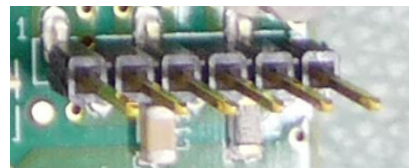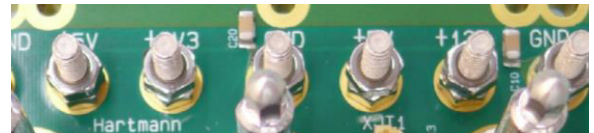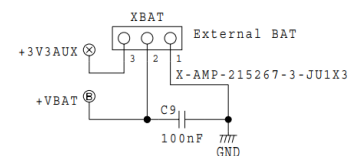
11) XBAT

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.
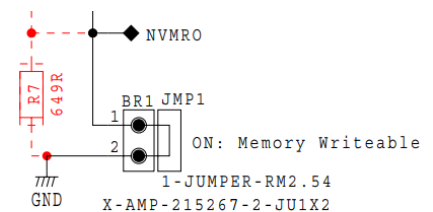
XBAT

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