

**3U SOSA™ Aligned
VPX BACKPLANE**
7 Slots with Rear I/O

**VITA 46
VITA 65
SOSA**



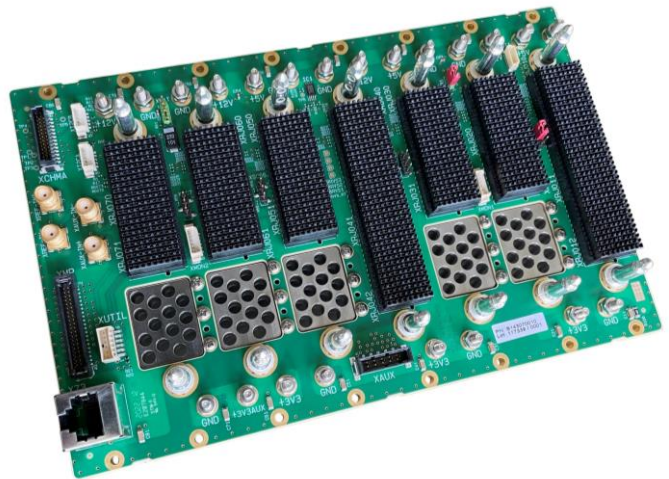
Key Features:

- **High speed design for 100 Gbit/s Ethernet (100GBase-KR4)**
- Featuring TE Connectivity **MULTIGIG RT 3 connectors**
- Compliant to **Sensor Open Systems Architecture**
- 7 Slots VPX, 1 SBC, 1 Switch, 1 Clock, 4 Payload Slots
- Payload and clock slots can optionally be equipped with coaxial backplane modules as per VITA 67.3C
- Configuration Data Plane: Double Star (1x FP, 1x UTP)
- Configuration Control Plane: Single Star (1x UTP)
- Configuration Radial Clock: Single Star
- Slot Profiles Compliant to VITA 65
- Compliant to VITA 46.0 baseline specification
- M3 studs for power entry
- PCB size 128.5mm x 200.0mm x 5.4 mm
- 5 HP from slot to slot (25.40 mm)
- Flexible keying and alignment mechanism
- With geographical address pins
- With JTAG connector on first slot (JT1)
- System Management Interface on the backplane (I2CA, I2C)
- Non-Volatile Memory Read Only signal set by Jumper BR1
- Max. Input current per backplane
VS1:VS2:VS3 = 120A : 90A : 90A
- Operating temperature: -40° - +85°C
- Storage temperature: -55°C - +85°C
- Flammability rating: UL94-V0
- Custom assembly or modification on request

Front side



Standard backplane B143070011 without VITA67.3 connector modules which are shown in the picture.



Order Number: B143070011

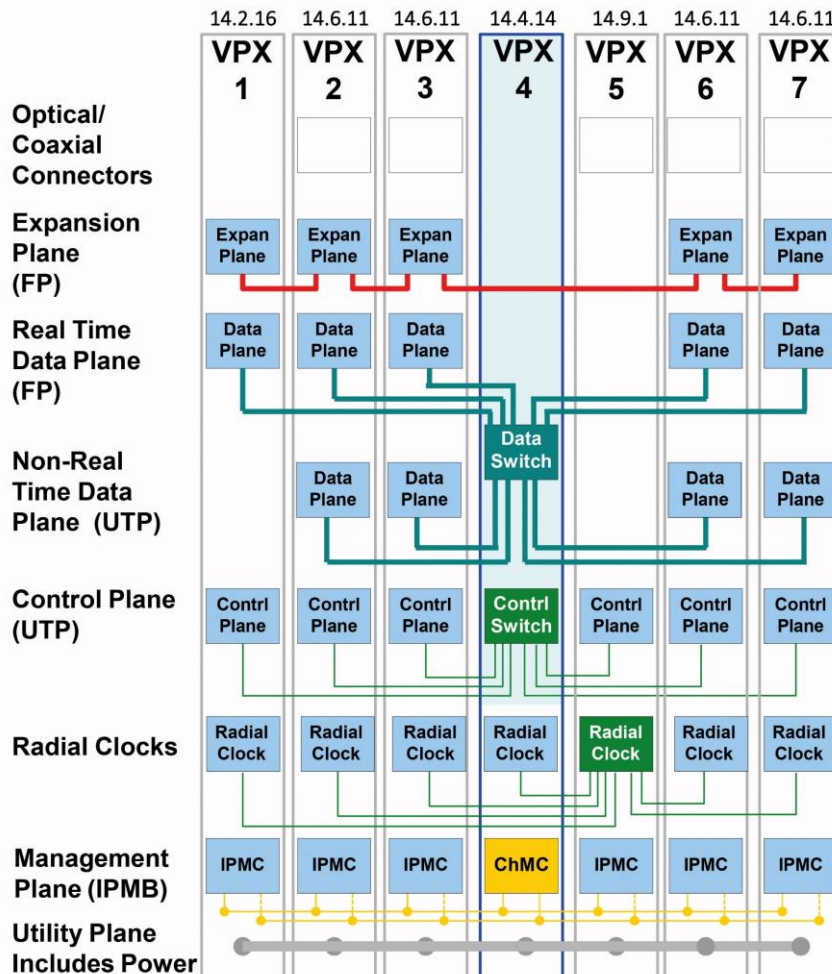
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1) Topology: 7-Slot (1 SBC, 1 Switch, 1 Clock, 4 Payload Slots)

Profile SBC slot: SLT3-PAY-1F1F2U1TU1T1U1T-14.2.16
 Profile Switch slot: SLT3-SWH-6F1U7U-14.4.14
 Profile Radial Clock Slot: SLT3x-TIM-4S16S1U2U1H-14.9.1
 Profile Payload Slots: SLT3-PAY-1F1U1S1S1U1U2F1H-14.6.11



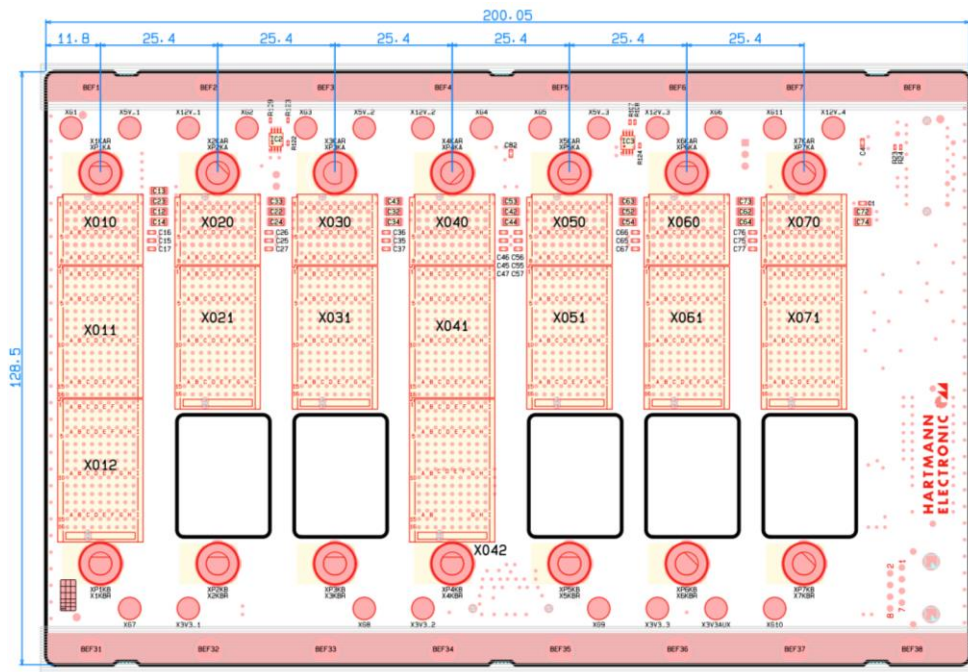
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2) Drawings

Front side



Back side



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3) 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

SBC Slot Profile SLT3-PAY-1F1F2U1TU1T1U1T-14.2.16 — P1 & J1

Plug-in module P1	Row G	Row F	Row E		Row D	Row C	Row B		Row A
Bplane J1	Row i	Row h	Even	Odd	Row e	Row d	Even	Odd	Row a
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	SYS_CON*	GND	GND-J1	EP00-TD-	EP00-TD+	GND	GND-J1	EP00-RD-	EP00-RD+
6	GND	EP01-TD-	EP01-TD+	GND-J1	GND	EP01-RD-	EP01-RD+	GND-J1	GND
7	USB01-VBUS	GND	GND-J1	EP02-TD-	EP02-TD+	GND	GND-J1	EP02-RD-	EP02-RD+
8	GND	EP03-TD-	EP03-TD+	GND-J1	GND	EP03-RD-	EP03-RD+	GND-J1	GND
9	MP01-TD	GND	GND-J1	XMCJ16-A5	XMCJ16-B5	GND	GND-J1	XMCJ16-D5	XMCJ16-E5
10	GND	XMCJ16-A7	XMCJ16-B7	GND-J1	GND	XMCJ16-D7	XMCJ16-E7	GND-J1	GND
11	MP01-RD	GND	GND-J1	XMCJ16-A9	XMCJ16-B9	GND	GND-J1	XMCJ16-D9	XMCJ16-E9
12	GND	XMCJ16-A15	XMCJ16-B15	GND-J1	GND	XMCJ16-D15	XMCJ16-E15	GND-J1	GND
13	GPIO1	GND	GND-J1	XMCJ16-A17	XMCJ16-B17	GND	GND-J1	XMCJ16-D17	XMCJ16-E17
14	GND	XMCJ16-A19	XMCJ16-B19	GND-J1	GND	XMCJ16-D19	XMCJ16-E19	GND-J1	GND
15	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

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SBC Slot Profile SLT3-PAY-1F1F2U1TU1T1U1T-14.2.16 — P2 & J2

Plug-In Mod P2	Row G	Row F	Row E		Row D	Row C	Row B		Row A
			Even	Odd			Even	Odd	
Bplane J2	Row i	Row h	Row g	Row f	Row e	Row d	Row c	Row b	Row a
1	SER01-TX-	GND	GND-J2	VID01-D1-	VID01-D1+	GND	GND-J2	VID01-D0-	VID01-D0+
2	GND	VID01-D3-	VID01-D3+	GND-J2	GND	VID01-D2-	VID01-D2+	GND-J2	GND
3	SER01-TX+	GND	GND-J2	VID01-PWR	VID01-HPD	GND	GND-J2	VID01-AUX-	VID01-AUX+
4	GND	USB02-D-	USB02-D+	GND-J2	GND	USB01-D-	USB01-D+	GND-J2	GND
5	SER01-RX-	GND	GND-J2	USB01-SST-	USB01-SST+	GND	GND-J2	USB01-SSR-	USB01-SSR+
6	GND	STRutp01-TD-	STRutp01-TD+	GND-J2	GND	STRutp01-RD-	STRutp01-RD+	GND-J2	GND
7	SER01-RX+	GND	GND-J2	CPtp01-DB-	CPtp01-DB+	GND	GND-J2	CPtp01-DA-	CPtp01-DA+
8	GND	CPtp01-DD-	CPtp01-DD+	GND-J2	GND	CPtp01-DC-	CPtp01-DC+	GND-J2	GND
9	USB02-VBUS	GND	GND-J2	XMCJ16-C12	XMCJ16-C13	GND	GND-J2	XMCJ16-F12	XMCJ16-F13
10	GND	XMCJ16-C14	XMCJ16-C15	GND-J2	GND	XMCJ16-F14	XMCJ16-F15	GND-J2	GND
11	GPIO2	GND	GND-J2	XMCJ16-C16	XMCJ16-C17	GND	GND-J2	XMCJ16-F16	XMCJ16-F17
12	GND	XMCJ16-C18	XMCJ16-C19	GND-J2	GND	XMCJ16-F18	XMCJ16-F19	GND-J2	GND
13	GPIO3	GND	GND-J2	XMCJ16-A1	XMCJ16-B1	GND	GND-J2	XMCJ16-D1	XMCJ16-E1
14	GND	XMCJ16-A3	XMCJ16-B3	GND-J2	GND	XMCJ16-D3	XMCJ16-E3	GND-J2	GND
15	GPIO4	GND	GND-J2	XMCJ16-A11	XMCJ16-B11	GND	GND-J2	XMCJ16-D11	XMCJ16-E11
16	GND	XMCJ16-A13	XMCJ16-B13	GND-J2	GND	XMCJ16-D13	XMCJ16-E13	GND-J2	GND

Switch Slot Profile SLT3-SWH-6F1U7U-14.4.14 — 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	GDiscrete1	GND	GND-J1	DS01-TD0-	DS01-TD0+	GND	GND-J1	DS01-RD0-	DS01-RD0+
2	GND	DS01-TD1-	DS01-TD1+	GND-J1	GND	DS01-RD1-	DS01-RD1+	GND-J1	GND
3	P1-VBAT	GND	GND-J1	DS01-TD2-	DS01-TD2+	GND	GND-J1	DS01-RD2-	DS01-RD2+
4	GND	DS01-TD3-	DS01-TD3+	GND-J1	GND	DS01-RD3-	DS01-RD3+	GND-J1	GND
5	SYS_CON*	GND	GND-J1	DP01-TD0-	DP01-TD0+	GND	GND-J1	DP01-RD0-	DP01-RD0+
6	GND	DP01-TD1-	DP01-TD1+	GND-J1	GND	DP01-RD1-	DP01-RD1+	GND-J1	GND
7	Reserved	GND	GND-J1	DP01-TD2-	DP01-TD2+	GND	GND-J1	DP01-RD2-	DP01-RD2+
8	GND	DP01-TD3-	DP01-TD3+	GND-J1	GND	DP01-RD3-	DP01-RD3+	GND-J1	GND
9	MP01-TD	GND	GND-J1	DP02-TD0-	DP02-TD0+	GND	GND-J1	DP02-RD0-	DP02-RD0+
10	GND	DP02-TD1-	DP02-TD1+	GND-J1	GND	DP02-RD1-	DP02-RD1+	GND-J1	GND
11	MP01-RD	GND	GND-J1	DP02-TD2-	DP02-TD2+	GND	GND-J1	DP02-RD2-	DP02-RD2+
12	GND	DP02-TD3-	DP02-TD3+	GND-J1	GND	DP02-RD3-	DP02-RD3+	GND-J1	GND
13	Reserved	GND	GND-J1	DP03-TD0-	DP03-TD0+	GND	GND-J1	DP03-RD0-	DP03-RD0+
14	GND	DP03-TD1-	DP03-TD1+	GND-J1	GND	DP03-RD1-	DP03-RD1+	GND-J1	GND
15	Maskable Reset*	GND	GND-J1	DP03-TD2-	DP03-TD2+	GND	GND-J1	DP03-RD2-	DP03-RD2+
16	GND	DP03-TD3-	DP03-TD3+	GND-J1	GND	DP03-RD3-	DP03-RD3+	GND-J1	GND

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Switch Slot Profile SLT3-SWH-6F1U7U-14.4.14 — P2 & J2

Plug-In Module P2		Row G	Row F	Row E		Row D	Row C	Row B		Row A
Bplane J2		Row i	Row h	Even	Odd	Row e	Row d	Even	Odd	Row a
1	Data Plane Port 4	Reserved	GND	GND-J2	DP04-TD0-	DP04-TD0+	GND	GND-J2	DP04-RD0-	DP04-RD0+
2		GND	DP04-TD1-	DP04-TD1+	GND-J2	GND	DP04-RD1-	DP04-RD1+	GND-J2	GND
3		Reserved	GND	GND-J2	DP04-TD2-	DP04-TD2+	GND	GND-J2	DP04-RD2-	DP04-RD2+
4		GND	DP04-TD3-	DP04-TD3+	GND-J2	GND	DP04-RD3-	DP04-RD3+	GND-J2	GND
5	Data Plane Port 5	Reserved	GND	GND-J2	DP05-TD0-	DP05-TD0+	GND	GND-J2	DP05-RD0-	DP05-RD0+
6		GND	DP05-TD1-	DP05-TD1+	GND-J2	GND	DP05-RD1-	DP05-RD1+	GND-J2	GND
7		Reserved	GND	GND-J2	DP05-TD2-	DP05-TD2+	GND	GND-J2	DP05-RD2-	DP05-RD2+
8		GND	DP05-TD3-	DP05-TD3+	GND-J2	GND	DP05-RD3-	DP05-RD3+	GND-J2	GND
9	GN D	GND	GND	GND-J2	GND	GND	GND	GND-J2	GND	GND
10	7 Control Plane one of which is stacking	GND	CSutp01-TD-	CSutp01-TD+	GND-J2	GND	CSutp01-RD-	CSutp01-RD+	GND-J2	GND
11		MP02-TD	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		MP02-RD	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		Reserved	GND	GND-J2	CPutp06-TD-	CPutp06-TD+	GND	GND-J2	CPutp06-RD-	CPutp06-RD+
16		GND	CPutp05-TD-	CPutp05-TD+	GND-J2	GND	CPutp05-RD-	CPutp05-RD+	GND-J2	GND

Clock Slot Profile SLT3x-TIM-4S16S1U2U1H-14.9.1 — P1 & J1

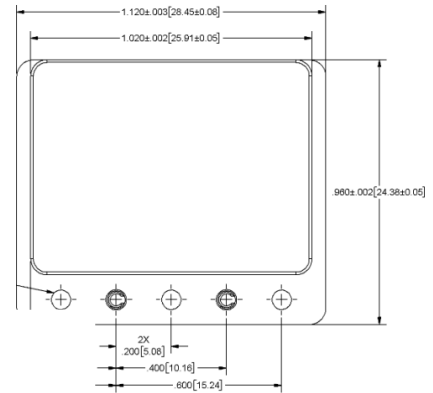
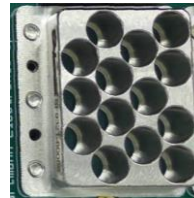
Plug-In Module P1		Row G	Row F	Row E		Row D	Row C	Row B		Row A
Bplane J1		Row i	Row h	Even	Odd			Even	Odd	
		Row i	Row h	Row g	Row f	Row e	Row d	Row c	Row b	Row a
1	Ext clk/time inputs	GDiscrete1	GND	GND-J1	REF_RCLK-IN-	REF_RCLK-IN+	GND	GND-J1	AUX_RCLK-IN-	AUX_RCLK-IN+
2		GND	UD_timing-IN1-	UD_timing-IN1+	GND-J1	GND	UD_timing-IN2-	UD_timing-IN2+	GND-J1	GND
3	AUX_RCLK & REF_RCLK outputs 01 - 08	P1-VBAT	GND	GND-J1	AUX_RCLK01-	AUX_RCLK01+	GND	GND-J1	REF_RCLK01-	REF_RCLK01+
4		GND	AUX_RCLK02-	AUX_RCLK02+	GND-J1	GND	REF_RCLK02-	REF_RCLK02+	GND-J1	GND
5		SYS_CON+	GND	GND-J1	AUX_RCLK03-	AUX_RCLK03+	GND	GND-J1	REF_RCLK03-	REF_RCLK03+
6		GND	AUX_RCLK04-	AUX_RCLK04+	GND-J1	GND	REF_RCLK04-	REF_RCLK04+	GND-J1	GND
7		RSVD	GND	GND-J1	AUX_RCLK05-	AUX_RCLK05+	GND	GND-J1	REF_RCLK05-	REF_RCLK05+
8		GND	AUX_RCLK06-	AUX_RCLK06+	GND-J1	GND	REF_RCLK06-	REF_RCLK06+	GND-J1	GND
9		MP01-TD	GND	GND-J1	AUX_RCLK07-	AUX_RCLK07+	GND	GND-J1	REF_RCLK07-	REF_RCLK07+
10		GND	AUX_RCLK08-	AUX_RCLK08+	GND-J1	GND	REF_RCLK08-	REF_RCLK08+	GND-J1	GND
11	User Defined	MP01-RD	GND	GND-J1	UD	UD	GND	GND-J1	UD	UD
12		GND	UD	UD	GND-J1	GND	UD	UD	GND-J1	GND
13		RSVD	GND	GND-J1	UD	UD	GND	GND-J1	UD	UD
14	GND	GND	GND	GND	GND-J1	GND	GND	GND	GND-J1	GND
15	Control Plane	MaskableReset*	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

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Clock Slot Profile SLT3x-TIM-4S16S1U2U1H-14.9.1 — P2 & J2

The P2/J2 location can be equipped with a VITA 67.3 type C Connector Module, any other Connector Module which fits in an Aperture Pattern H location or left empty.

Coaxial Backplane Module e.g. part number SF9321-60086 by Amphenol.



Payload Slot Profile SLT3-PAY-1F1U1S1S1U1U2F1H-14.6.11 — P1 & J1

Plug-in module P1		Row G	Row F	Row E		Row D	Row C	Row B		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 FP	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	SYS_CON*	GND	GND-J1	DPutp01-TD-	DPutp01-TD+	GND	GND-J1	DPutp01-RD-	DPutp01-RD+
6	GP, MP	GND	CLK1orGP-	CLK1orGP+	GND-J1	GND	MP01-TD	MP01-RD	GND-J1	GND
7	Ground	GND	GND	GND-J1	GND	GND	GND	GND-J1	GND	GND
8	Control Plane	GND	CPutp01-TD-	CPutp01-TD+	GND-J1	GND	CPutp01-RD-	CPutp01-RD+	GND-J1	GND
9	Expansion Plane	MP02-TD	GND	GND-J1	EP00-TD-	EP00-TD+	GND	GND-J1	EP00-RD-	EP00-RD+
10		GND	EP01-TD-	EP01-TD+	GND-J1	GND	EP01-RD-	EP01-RD+	GND-J1	GND
11		MP02-RD	GND	GND-J1	EP02-TD-	EP02-TD+	GND	GND-J1	EP02-RD-	EP02-RD+
12		GND	EP03-TD-	EP03-TD+	GND-J1	GND	EP03-RD-	EP03-RD+	GND-J1	GND
13		GPIO1	GND	GND-J1	EP04-TD-	EP04-TD+	GND	GND-J1	EP04-RD-	EP04-RD+
14		GND	EP05-TD-	EP05-TD+	GND-J1	GND	EP05-RD-	EP05-RD+	GND-J1	GND
15		Maskable Reset*	GND	GND-J1	EP06-TD-	EP06-TD+	GND	GND-J1	EP06-RD-	EP06-RD+
16		GND	EP07-TD-	EP07-TD+	GND-J1	GND	EP07-RD-	EP07-RD+	GND-J1	GND

Payload Slot Profile SLT3-PAY-1F1U1S1S1U1U2F1H-14.6.11 — P2 & J2

The P2/J2 location can be equipped with a VITA67.3 type C Connector Module, any other Connector Module which fits in an Aperture Pattern H location or left empty.

Coaxial Backplane Module e.g. part number SF9321-60086 by Amphenol.

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7 Slots with Rear I/O

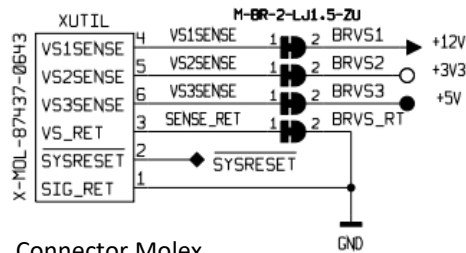
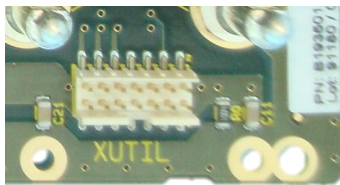
**VITA 46
VITA 65
SOSA**



4) Current Capability:

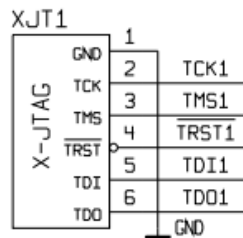
■ +12V	120 A
■ +3.3V	90 A
■ +5V	90 A
■ -12V AUX	7 A
■ +12V AUX	7 A
■ +3.3V AUX	7 A

5) UTILITY (Connector XUTIL)



Connector Molex
87437-0643

6) JTAG (Connector XJT1)

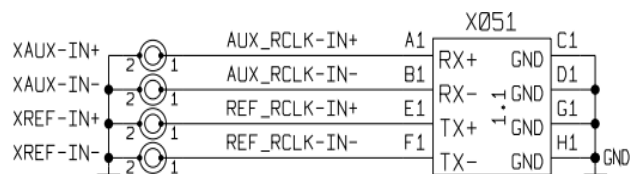


Connector JST
BM06B-SRSS-TB

Consider: JTAG only at Slot 1

7) Clock signals (Connectors XREF-in, XAUX-in)

As an external timing input, the two differential reference clock signals REF_CLK and AUX_CLK can be supplied via four SMA connectors on the backplane.



**3U SOSA™ Aligned
VPX BACKPLANE**
7 Slots with Rear I/O

**VITA 46
VITA 65
SOSA**



8) SYSCON

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

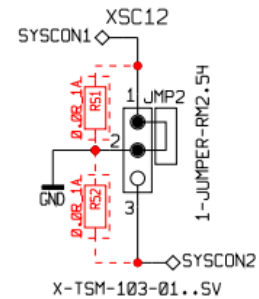
There are additional connectors X_SC34, X_SC56, X_SC7 so you can select any slot as system slot

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

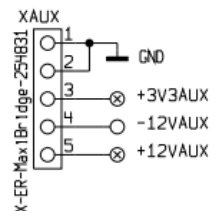
1	I2CB_SCL
2	GND
3	I2CB_SDA
4	I2CB_PWR
5	NC

Connector Molex 53398-0510

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 and via single row vertical terminals. Optimal daughter board supply and trouble-free operation are ensured by the arrangement of the feed modules on the backplane.



Connector Erni 254831

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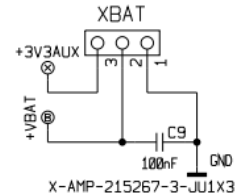


11) XBAT

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.

VBAT X5

1	GND
2	+VBAT
3	+3.3V_AUX



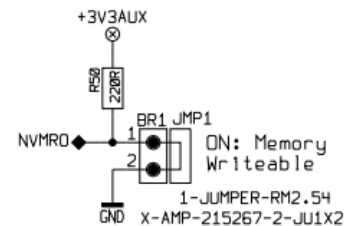
Connector AMP 215267-3

12) NVMRO

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

BR1

1	NVMRO
2	GND



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