

## 3U OpenVPX BACKPLANE BKP3-DIS02-15.2.8-4

VITA 46  
VITA 65

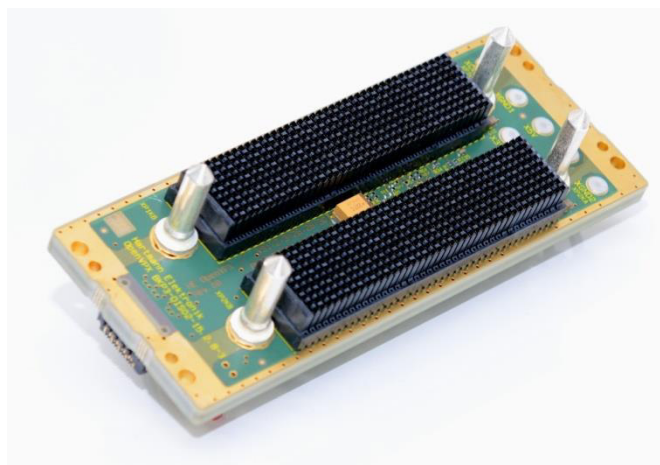


### Key Features:

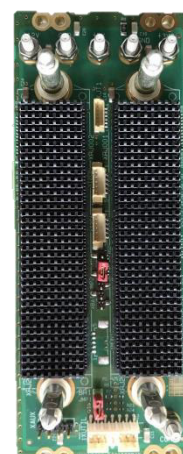
- Compliant to VITA 46.0 baseline specification
- Compliant to VITA 65  , BKP3-DIS02-15.2.8-4
- 2 Slots VPX, 1 Payload Slot , 1 Peripheral Slot
- M3 studs for power entry
- PCB size 128.50mm x 50.36mm x 5.4 mm
- 5 HP from slot to slot (25.40 mm)
- Flexible keying and alignment mechanism
- with geographical address pins
- Reference clock
- Auxiliary clock
- System Reset
- 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 = 28A : 28A : 30A
- Operating temperature: -40° - +85°C
- Storage temperature: -55°C - +85°C
- Flammability rating: UL94-V0
- Custom assembly or modification on request

▪ **Order number: B193201062**

Front side



Front side

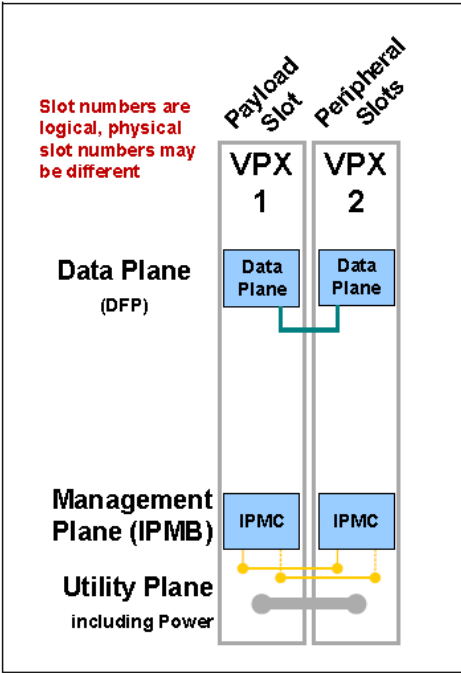


Rear side

|                                             |                    |                                                                                    |
|---------------------------------------------|--------------------|------------------------------------------------------------------------------------|
| 3U OpenVPX BACKPLANE<br>BKP3-DIS02-15.2.8-4 | VITA 46<br>VITA 65 |  |
|---------------------------------------------|--------------------|------------------------------------------------------------------------------------|

1) Topology: 2-Slot — BKP3-DIS02-15.2.8-4 (1 Payload + 1 Peripheral)

- Profile Payload slot:SLT3-PAY-1D-14.2.6 / MOD3-PAY-1D-16.2.6-n
- Profile Peripheral slot:SLT3-PAY-1D-14.2.6 / MOD3-PAY-1D-16.2.6-n  
SLT3-PER-2F-14.3.1 / MOD3-PER-2F-16.3.1-n



2) Pin Assignment

Pin Assignment VPX J0 (Utility Connector)

| PIN NUMBER | ROW I<br>VPX | ROW H<br>VPX | ROW G<br>VPX | ROW F<br>VPX | ROW E<br>VPX | ROW D<br>VPX | ROW C<br>VPX | ROW B<br>VPX | ROW A<br>VPX |
|------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| 1          | VS1          | VS1          | VS1          | VS1          | None         | VS2          | VS2          | VS2          | VS2          |
| 2          | VS1          | VS1          | VS1          | VS1          | None         | VS2          | VS2          | VS2          | VS2          |
| 3          | VS3          | VS3          | VS3          | VS3          | None         | 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

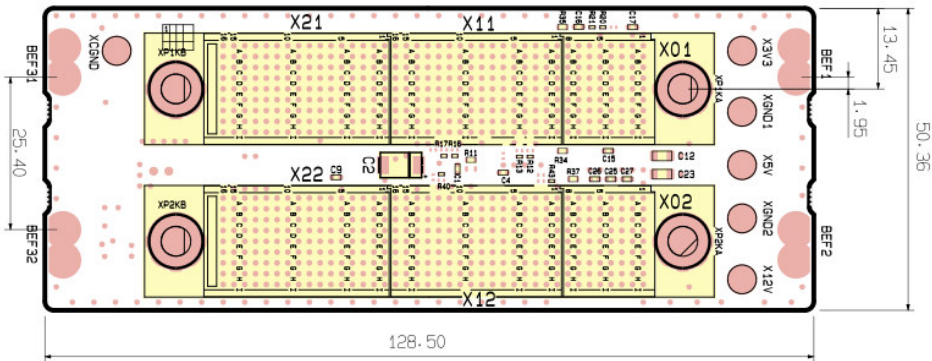
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BKP3-DIS02-15.2.8-4

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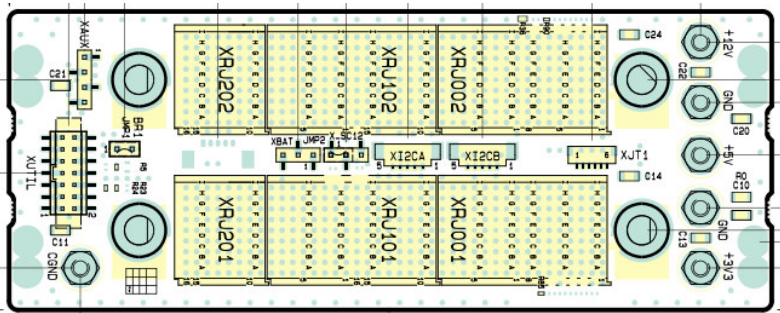


3) Drawings

Front side



Back side



4) Pin Assignment

Payload Slot Profile SLT3-PAY-1D-14.2.6— P1 & J1

| Plug-In   | Row G              | Row F    | Row E    |          | Row D    | Row C    | Row B    |          | Row A    |
|-----------|--------------------|----------|----------|----------|----------|----------|----------|----------|----------|
| Module P1 |                    |          | 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   | 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         | SYS_CON*           | GND      | GND-J1   | DP01-T4- | DP01-T4+ | GND      | GND-J1   | DP01-R4- | DP01-R4+ |
| 6         | GND                | DP01-T5- | DP01-T5+ | GND-J1   | GND      | DP01-R5- | DP01-R5+ | GND-J1   | GND      |
| 7         | Reserved           | GND      | GND-J1   | DP01-T6- | DP01-T6+ | GND      | GND-J1   | DP01-R6- | DP01-R6+ |
| 8         | GND                | DP01-T7- | DP01-T7+ | GND-J1   | GND      | DP01-R7- | DP01-R7+ | 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<br>Reset* | GND      | GND-J1   | UD       | UD       | GND      | GND-J1   | UD       | UD       |
| 16        | GND                | UD       | UD       | GND-J1   | GND      | UD       | UD       | GND-J1   | GND      |

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## Payload Slot Profile SLT3-PAY-1D-14.2.6— 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

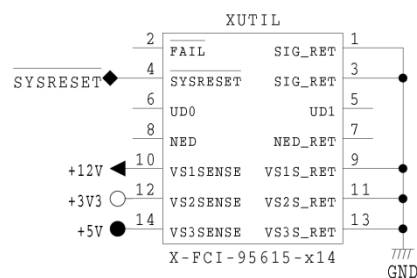
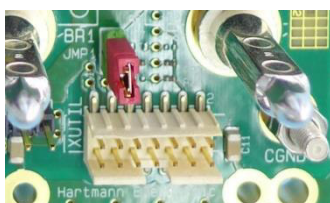
| Plug-in   | Row G     | Row F    | Row E    |          | Row D    | Row C    | Row B    |          | Row A    |
|-----------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|
| module P2 |           |          | Even     | Odd      |          |          | Even     | Odd      |          |
| Bplane J2 | Row i     | Row h    | Row g    | Row f    | Row e    | Row d    | Row c    | Row b    | Row a    |
| 1         | 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      |

## 5) Current Capability:

- +12V 28 A
- +3.3V 28 A
- +5V 30 A
- -12V AUX 2 A
- +12V AUX 2 A
- +3.3V AUX 2 A

Consider: Total power consumption for the main voltages +12V, 5V and 3.3V is max. 36A/ Slot according VITA 46.0

## 6) UTILITY (connector XUTIL)



Connector Amphenol/FCI 95615-014TRLF

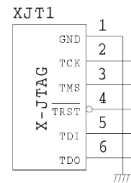
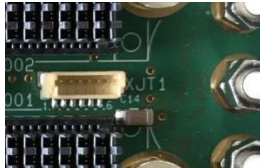


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### 7) JTAG (connector XJT1)



Consider: JTAG only at Slot 1, Payload slot

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

### 8) SYSCON

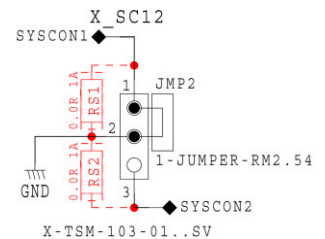
By setting the signal Syscon to GND the system slot is defined. In general the system slot is slot 1.

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

Connector Molex 53398-0571

#### I2CA

|   |          |
|---|----------|
| 1 | I2CA_SCL |
| 2 | GND      |
| 3 | I2CA_SDA |
| 4 | I2CA_PWR |
| 5 | NC       |

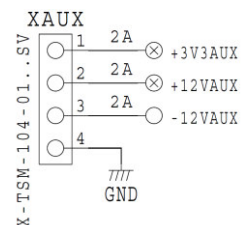
#### I2CB

|   |          |
|---|----------|
| 1 | I2CB_SCL |
| 2 | GND      |
| 3 | I2CB_SDA |
| 4 | I2CB_PWR |
| 5 | NC       |

### 10) Power 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 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 TSM-104-01-L-SV

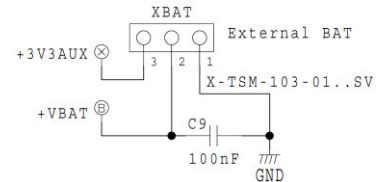
|                                                           |                                  |                                                                                    |
|-----------------------------------------------------------|----------------------------------|------------------------------------------------------------------------------------|
| <b>3U OpenVPX BACKPLANE</b><br><b>BKP3-DIS02-15.2.8-4</b> | <b>VITA 46</b><br><b>VITA 65</b> |  |
|-----------------------------------------------------------|----------------------------------|------------------------------------------------------------------------------------|

## 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 |



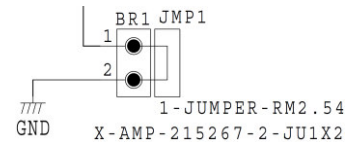
## 12) NVMRO

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

Connector Samtec TSM-103-01-L-SV-P-TR

### BR1

|   |       |
|---|-------|
| 1 | NVMRO |
| 2 | GND   |



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