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V32Z-Series STD Bus Industrial Card Cages



REFERENCE MANUAL

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Note

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The V32Z Series card cages are high quality STD Bus card cages especially suitable for industrial applications. These V32z cages are designed to be drop-in replacements for Ziatech ZT-200 and ZT-210 series card cages. They feature heavy-duty cold-rolled steel construction with an industrial quality black finish, 5/8" card spacing, card restraint bar, and the V32 five layer backplane with high reliability STD 32 bus connectors.

The V32Z Series backplanes are compatible with STD 32 (8, 16, or 32 data bits) and STD 80 (8 data bits) cards. Cards with different data bus sizes can be mixed in a system. The high speed backplane features a .093" multilayer circuit board which provides controlled impedance, reduced capacitance signal lines. STD 32 slot specific functions are provided through slot X (leftmost slot) per the STD 32 specifications. Therefore, slot X is not bused as the other card slots are.

Installation

Card Orientation

STD Bus cards must be oriented correctly when inserted in the card cage. Most board manufacturers provide a card ejector at the top corner of their cards. Be certain to position these card ejectors toward the top of the card cage. For upside down or unusual mounting positions the card ejectors are positioned next to the card retainer bar.

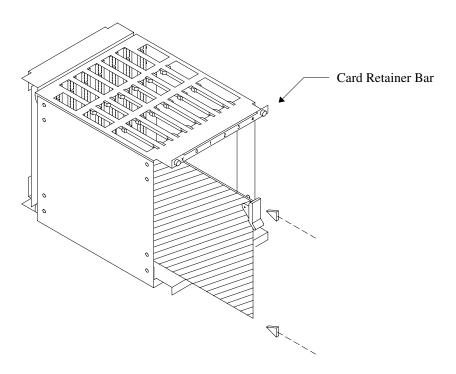
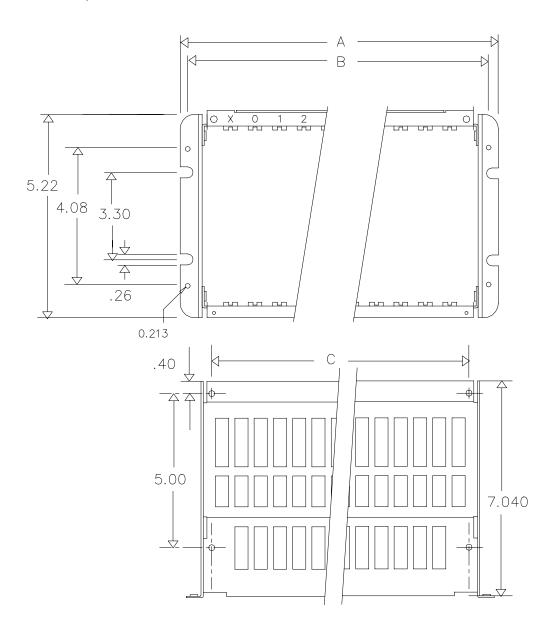


Figure 1. Card Orientation

Caution Cards should be inserted or removed from the STD Bus card cage only when the system power is off.

Dimensions, Wall Mount

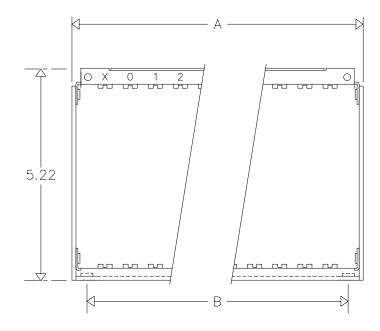


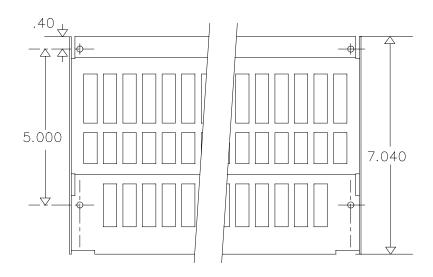
Model	Slots	Α	В	С
V32-12ZW	12	10.30"	9.50"	8.17"
V32-15ZW	15	12.18"	11.38"	10.05"
V32- 21ZW	21	15.91"	15.12"	13.79"

Tolerance = ± 0.02 "

Figure 2. Overall Dimensions (Wall-Mount Configuration)

Dimensions, Table Mount



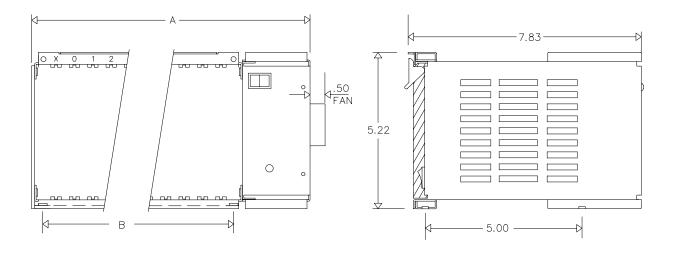


Model	Slots	Α	В
V32-12ZT	12	8.88"	8.17"
V32-15ZT	15	10.76"	10.05"
V32-21ZT	21	14.50"	13.79"

Tolerance = ± 0.02 "

Figure 3. Overall Dimensions (Table-Mount Configuration)

Dimensions with Bolt-On Power Supply



Model	Slots	Α	В
V32-12ZT-x	12	11.13"	8.17"
V32-15ZT	15	13.01"	10.05"
V32-21ZT	21	16.75"	13.79"

Tolerance = ± 0.002 "

Figure 4. Overall Dimensions (Table-Mount Configuration)

Termination

The V32 series backplanes feature a multilayer circuit board with controlled impedance signal lines. Selected signal lines are terminated to provide excellent, high speed performance. The termination is applied on both ends of the circuit board with schottky diode clamps to +5V and GND rails. V32 backplanes are designed to operate at bus speeds to 16 MHz.

Compatibility

Full compatibility with STD 80 cards and STD 32 cards is maintained with the V32 backplanes. A variety of STD 80 (8 data bit) and STD 32 (8, 16, or 32 data bit) cards may be mixed in a card cage. STD 32 dynamic bus sizing signals determine which size of data bus is in use at any given time.

Slot X

The leftmost card slot in all STD 32 (V32-Series) cages is designated as Slot X and is not bussed to the other slots. This slot is available to control slot specific signal lines of the STD 32 bus and usually works in conjunction with the permanent master in Slot 0. Slot specific functions include multimaster control, interrupt control, DMA control, and slot addressing. Slot X can accommodate an in-rack power supply if desired.

Priority Chain Signal

On 12, 15 and 21 slot cages, the PCI and PCO signals are connected together and bussed across all connectors to distribute +3.3V power.

Ground Lines

The two power supply ground lines, GND (+5V ground) and AUX GND (±12V ground), are not tied together on the backplane. Normally these two grounds must be connected together. The ideal location for this connection is at the power supply or at the STD card that requires the common ground. All VersaLogic power supplies connect both grounds together.

Power Supply Options

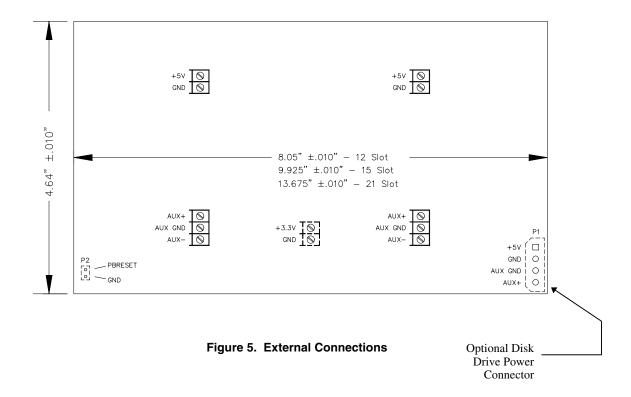
The STD Bus system can be powered with a VL-PS80/100 series bolt on power supply, or an external stand alone power supply. Connection points are supplied on the backplane for power supply and push button reset switch connections.

External Connections

In addition to the STD Bus boards which plug into the bus, a number of external connections may be made to the motherboard. Pads for these connections are provided along the left and right edges of the backplane. The available connection points are:

Signal	Description
+5V	Connection to the +5 volt power supply line.
GND	Ground connection for the +5 volt power supply.
AUX+ (+12V)	Connection to +12 volt power supply line.
AUX GND	Ground connection for the ± 12 volt power supply. AUX GND should be tied to GND at the power supply for systems which need these two grounds to be common.
AUX- (-12V)	Connection to the -12 volt power supply line.
PBRESET	Connection to a system reset push button switch (normally open). Short to GND to initiate a system reset.
+3.3V	Connection to the +3.3 volt power supply line.

External Connections



STD 32 Connector Pinouts

SLOT X

SLOT 0..19

		1	1		
E02 RSVD	0 0	E01 GND	E02 LOCK*	00	E01 GND
E04 RSVD	0 0	E03 RSVD	E04 XA23	0 0	E03 XA19
E06 RSVD	0 0	E05 RSVD	E06 XA22	00	E05 XA18
EOB RSVD	0 0	E07 RSVD	E08 XA21	0 0	E07 XA17
E10 RSVD	00	E09 RSVD	E10 XA20	. 0 0	E09 XA16
E12 RSVD	0 0	E11 RSVD	E12 RSVD	$ \circ \ \ $	E11 NOWS*
	()				
E14 +5 VDC	00	E13 +5 VDC	E14 +5 VDC	00	E13 +5 VDC
P02 +5 VDC	0 0	P01 +5 VDC	P02 +5 VDC	0 0	P01 +5 VDC
E16 DAK0*	0 0	E15 DREQO*	E16 DREQ014*	0 0	E15 DAK014*
PO4 GND	0 0	P03 GND	PO4 GND	0 0	PO3 GND
E18 GND	00	E17 GND	E18 GND	00	E17 GND
P06 DAK1*	0 0	P05 DREQ1*	P06 DCPDN*	ا ہ ن ما	P05 VBAT
E20 DAK2*	00	E19 DREQ2*	E20 D31	00	E19 D27
P08 DAK3*	0 0	P07 DREQ3*	P08 A23/D7	lo * ol	P07 A19/D3
E22 DAK4*	00	E21 DREQ4*	E22 D30	ارمنا	E21 D26
P10 DAK5*	0 0	P09 DREQ5*	P10 A22/D6	ا م آ ما	P09 A18/D2
E24 DAK6*	00	E23 DREQ6*	E24 D29	ا م م ا	E23 D25
P12 DAK7*	0 0	P11 DREQ7*	P12 A21/D5	ا م ن م ا	P11 A17/D1
E26 DAK8*	000	E25 DREQ8*	E26 D28	`	E25 D24
P14 DAK9*		P13 DREQ9*	P14 A20/D4	اهٽها	P13 A16/D0
E28 GND		E27 RSVD	E28 GND	` 。	E27 D23
P16 DAK10*		P15 DREQ10*	P16 A15		P15 A07
E30 DAK11*	00	E29 DREQ11*	E30 D15	00	E29 D22
P18 DAK12*	0 0	P17 DREQ12*	P18 A14	0 0	P17 A06
E32 DAK13*	00	E31 DREQ13*	E32 D14	00	E31 D21 P19 A05
P20 DAK14*	0 0	P19 DREQ14*	P20 A13	0 0	
E34 AEN14*	0 0	E33 IRQ14	E34 D13	00	E33 D20
P22 AEN13*	0 0	P21 IRQ13	P22 A12	0 0	P21 A04
E36 RSVD	0 0	E35 GND	E36 D12	00	E35 GND
P24 AEN12*	0 0	P23 IRQ12	P24 A11	0 0	P23 A03
E38 AEN11*	0 0	E37 IRQ11	E38 D11	0 0	E37 D19
P26 AEN10*	0 0	P25 IRQ10	P26 A10	0 0	P25 A02
E40 AEN9*	0 0	E39 IRQ9	E40 D10	0 0	E39 D18
P28 AEN8*	0 0	P27 IRQ8	P28 A09	0 0	P27 A01
E42 AEN7*	0 0	E41 IRQ7	E42 D09	0 0	E41 D17
P30 AEN6*	0 0	P29 IRQ6	P30 A08	0 0	P29 A00
E44 AEN5*	0 0	E43 IRQ5	E44 D08	0 0	E43 D16
P32 AEN4*	0 0	P31 IRQ4	P32 RD*	0 0	P31 WR*
E46 AEN3*	0 0	E45 GND	E46 MASTER 16*	0 0	E45 GND
P34 AEN2*	0 0	P33 IRQ3	P34 MEMRQ*	0 0	P33 IORQ*
E48 AEN1*	0 0	E47 IRQ2	E48 AEN014*	0 0	E47 IRQ014
P36 AEN0*	0 0	P35 IRQ1	P36 BHE*	0 0	P35 IOEXP
E50 MAK14*	0 0	E49 IRQ0	E50 BE3*	0 0	E49 BE1*
P38 MAK13*	0 0	P37 MREQ14*	P38 ALE*	0 0	P37 INTRQ1*
E52 MAK12*	0 0	E51 MREQ13*	E52 BE2*	0 0	E51 BE0*
P40 MAK11*	0 0	P39 MREQ12*	P40 STATUSO*	0 0	P39 STATUS1*
E54 GND	0 0	E53 MREQ11*	E54 GND	0 0	E53 MEM16*
P42 BUSRQ*	0 0	P41 BUSAK*	P42 BUSRQ*		P41 BUSAK*
E56 MAK10*	0 0	E55 MREQ10*	E56 W-R	00	E55 M-I0
P44 MAK9*	0 0	P43 MREQ9*	P44 INTRQ*		P43 INTAK*
E58 MAK8*	0 0	E57 MREQ8*	E58 DMAIOR*	0 0	E57 DMAIOW*
P46 NMIRQ*	0 0	P45 MREQ7*	P46 NMIRQ*	0 0	P45 WAITRQ*
E60 MAK7*	00	E59 MREQ6*	E60 EX8*	00	E59 I016*
P48 MAK6*	0 0	P47 SYSRESET*	P48 PBRESET*	ا م ن م ا	P47 SYSRESET*
E62 MAK5*	00	E61 MREQ5*	E62 START*	000	E61 CMD*
P50 MAK4*	0 0	P49 CLOCK*	P50 CNTRL*	0 0	P49 CLOCK*
E64 MREQ4*	00	E63 MREQ3*	E64 EX32*	00	E63 EX16*
P52 MAK3*	0 0	P51 MREQ2*	P52 PCI	0 0	P51 PC0
E66 MAK2*	00	E65 MAK1*	E66 T-C	00	E65 EXRDY
P54 AUX GND		P53 AUX GND	P54 AUX GND	ا ، ۲۰۰۰	P53 AUX GND
E68 +5 VDC	000	E67 MREO1*	E68 +5 VDC	`	E67 INTRO3*
P56 AUX -		P55 AUX +	P56 AUX -		P55 AUX +
E70 MAK0*	000	E69 MREQ0*	E70 MREQ014*		E69 MAKO14*
L/O MANO		EGO MINEGO.	L/O MREQU14*		200 MANO14"
				()	
EZO DOVO	1, ~ _	E71 DOVE	F70 MONUNCT:	$\lfloor , $	E74 CLOUDET:
E72 RSVD	0 0	E71 RSVD	E72 MSBURST*	"	E71 SLBURST*
E74 RSVD	000	E73 RSVD	E74 XA31*	000	E73 XA27*
E76 RSVD	0 0	E75 RSVD	E76 XA30*	0 0	E75 XA26*
E78 RSVD	0 0	E77 RSVD	E78 XA29*		E77 XA25*
E80 RSVD	°	E79 RSVD	E80 XA28*	0 0	E79 XA24*
	_				

Figure 6. STD 32 Connector Pinouts

Schematics

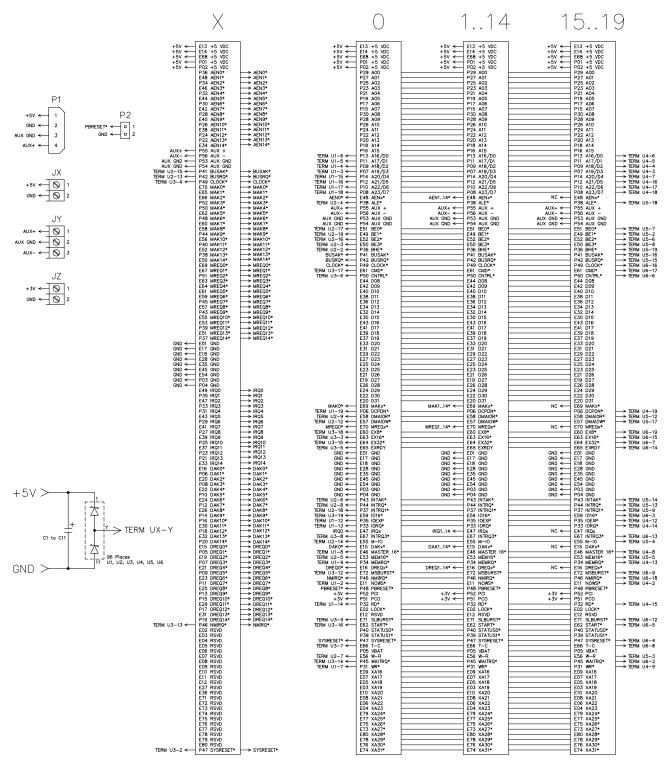


Figure 7. Schematic Diagram

Specifications

MOTHERBOARD CONSTRUCTION:

- Controlled impedance, high speed, low capacitance signal lines
- Multilayer .093" PCB
- Gold-plated, hemispherical knuckle card connector contacts

CARD CAGE CONSTRUCTION:

- Sturdy cold rolled steel with sealed black finish
- Fully ventilated card slots
- Anti-vibration/latch bar with slot numbers

OPERATING TEMPERATURE:

• -40° C to $+85^{\circ}$ C

POWER BUS RATING:

- +5V @ 20 Amps (4 Amps per slot) maximum
- +12V @ 5 Amps (2.5 Amps per slot) maximum
- +3.3 @ 5 Amps (2.5 Amps per slot) maximum