

# Tracewell S32™ for PXI / CompactPCI™ 18-Slot 3U backplane

## Description

Tracewell S32 for PXI/cPCI is a rugged rack-mount or bench-top system designed for applications requiring a large number of instruments in a single, low-profile chassis. The PXI bus has proven to be a solid alternative to VXI for automated test due to lower cost, ease of configuration, enhanced user features and small size. To support this growing interest, Tracewell created the S32 as a high-density platform for commercial, industrial and telecommunication test providing high slot-count, power and cooling performance.

Tracewell S32 is equipped with an 18-slot 3U backplane which is hot-swap compatible and supports standard 64-bit PXI and cPCI boards. Cross-compatibility of PXI with CompactPCI means that the backplane will also support non-instrumentation devices such as network interface modules. The system slot includes three additional expansion slots allowing it to support up to a 4-slot controller. The backplane also provides user control of system clock source. Two PXI-to-PXI bridges ensure seamless integration between bus segments, allowing configuration of PXI trigger signals by the user. A 600-watt power supply provides ample power for even the most demanding applications, while specially tuned airflow ensures minimal heat rise through the chassis. Standard monitoring is provided for power supply voltages and fans, while multi-point temperature controlled fans ensure proper cooling without excess noise. Other features include removable rack flanges, handles and feet. Lastly, high quality, rugged construction ensures dependable operation both at the lab and in the field. Tracewell S32 for PXI/cPCI is the smart solution for your next PXI application.



## Features

- High-capacity 18-slot PXI/cPCI backplane
- Dual PXI backplane bridges are user configurable
- Voltage and fan monitoring included
- Multi-point temperature controlled fans reduce noise
- Low-profile 4U rugged design
- Easily convertible for rack or bench use
- Hot-Swap compatible per PICMG 2.1
- 600W universal input power with PFC
- Steel subracks eliminate flex
- Safety and EMC certified

**Physical**

**Construction:** Aluminum sheet, 5052-H32 alloy; major components: sides (0.100"), optional rack flanges (0.125"), top and bottom covers 9.62"), rear panel (.80")  
**Plastics:** Aluminum Extrusion, 6101-T6 alloy; cardcage front profile Cardguide, snap-in, 0.062" pcb, white nylon, UL-94V-2 material; Cardguide entry, snap-in, 0.062" pcb, neutral nylon, UL-94V0 material; Front overlays, polycarbonate, UL-94V0 material; feet  
**Cardcage:** Front loading 3U x 160mm, flush, 18 usable slots, IEEE 1101.10  
**Dimensions:** (19.65") D (499 mm) (17.25") W (438 mm) without rack flanges (19.00") W (483 mm) with rack flanges (6.97") H (177 mm) less feet  
**Weight:** 24 lbs. (10.9 kg)  
**Finish:** Textured paint, light gray per Sherwin Williams F63TXA9008; top cover and front flanges; all other aluminum is brushed clear chromate per MIL-STD 5541; steel is bright zinc plate  
**Additional:** 19" rack kit includes (2) rack flanges and handles (installed)  
**Accessories:** Hardware kit provided which includes (18) +5.0 (brilliant blue) and +3.3V (cadmium yellow) backplane I/O keys, (4) removable feet

**Backplane**

**Bus structure:** PXI 64 bit, system slot left  
**Assembly:** SMT/ press-fit assembly  
**Layer count:** 12 layers  
**Control:** PRST#, DEG#, FAL, return and remote sense (+5, +3.3, +/-12VDC)  
**PCB construction:** FR4 epoxy-glass laminate, multilayer, all-stripline, SMOBC, silkscreen on two sides, 1oz. copper signal and power planes minimum, UL 94V-0, 0.150" (3.8 mm) thickness  
**Impedance:** 65 Ohms nominal on all signal lines, non-loaded pcb  
**Decoupling:** SMT decoupling per PXI R2.0  
**DC distribution:** ELCON high current connector for +5, +3.3, return; V I/O terminals  
**Control:** Front accessible switch for selecting remote or on-board clock source  
**Bridges:** Includes two rear mounted PXI 64-bit pallet bridges with user selectable trigger direction; factory setting is right-to-left trigger direction  
**Compliance:** PXI R2.0, PICMG 2.0 R3.0, hot swap compatible per PICMG 2.1

**Cooling**

**Airflow:** Rear intake, side exhaust, pressurized; cardcage and power supply cooled independently  
**Fans:** (3) 130cfm, high pressure tube-axial, 12VDC  
**Air filter:** Rear accessible, washable media, 30 PPI  
**Adjustment †:** All fans are temperature controlled using three temperature sensors positioned above the cardcage. Fan speed range is controlled from 60 – 100% over a 25°C – 50°C range. Front panel override switch provides full speed fan operation regardless of temperature.

**Power**

**General:** 600W, AC input with PFC  
**Total output:** 600W, maximum all output combined  
**Input:** 90 – 264VAC, universal input  
**Frequency:** 47 – 440 Hz  
**Efficiency:** 70 - 80% typical  
**Power factor:** 0.99 with PFC  
**Input current:** 13A at 90VAC; 5A at 230VAC  
**Inrush current:** 40A maximum peak  
**Hold-up time:** 20 ms minimum after removal of power at full load  
**AC-fail:** Logic low signal asserted to backplane after removal of AC power  
**DC outputs:** +5V/ 60A, +3.3V/ 60A, +12V/ 10A, and -12V/ 4A  
**Output adj.:** all output adjustable +/-10%  
**Ripple/Noise:** Less than 1% peak-to-peak or 50mV, whichever is greater; bandwidth limited to 20MHz  
**Remote sense:** All outputs, 500mV maximum compensation  
**Inhibit:** Global DC inhibit available (not wired)  
**Cooling:** Dual internal DC fans

**Control and Input**

**Switches:** Front panel: on/standby switch (rocker); fan control override (pushbutton, latching; depress for full speed)  
**Power input:** Rear panel AC inlet connector (IEC320), detachable 7' line cord provided  
**Circuit protection:** Rear panel single pole magnetic circuit breaker, 10A (pushbutton, latching)

**Monitoring**

**Interface:** Front panel LED indicators  
**Functions:** Power supply DC output voltage verification (90% nominal); fan speed low-tach indicator for <50% rated fan RPM or locked rotor on both fans  
**Outputs:** Green LED indicators for +5, +3.3, +12, -12Vdc, Fan A, B and C; all LEDs on for good, off for fail

**Environmental**

**Temperature:** 0 – 50°C operating with specified airflow; -20 – +70°C non-operating  
**Shock/Vibration:** Basic transportation per ASTM 0775  
**Humidity:** 5 – 95% non-condensing at 40°C operating, 0 – 95% non-operating  
**Acoustic:** 55 dBA maximum, measured 1 meter from all surfaces (fans at full speed)

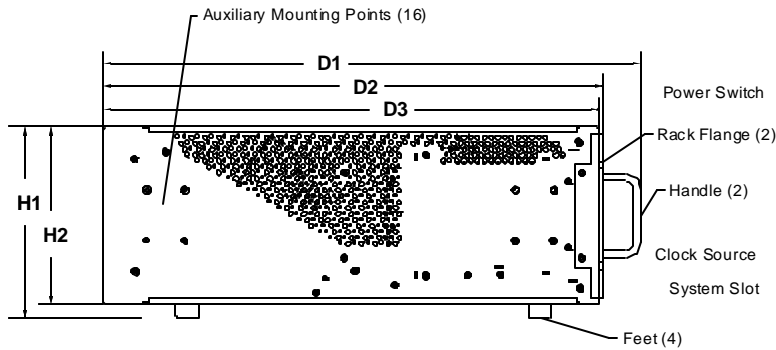
**Agency Compliance †**

**Safety:** Certified to UL 3111- 1, CSA/CAN C22.2 No. 1010.1-92, IEC 61010-1; ET L control #9900924  
**Emissions:** Certified to FCC part 15, Class A, I EC 61326-1, EN61000-3-2, EN61000-3-3  
**Other:** CE declaration

**Warranty**

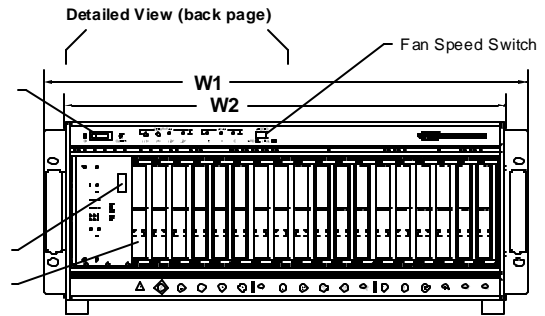
1 year limited warranty

Drawings

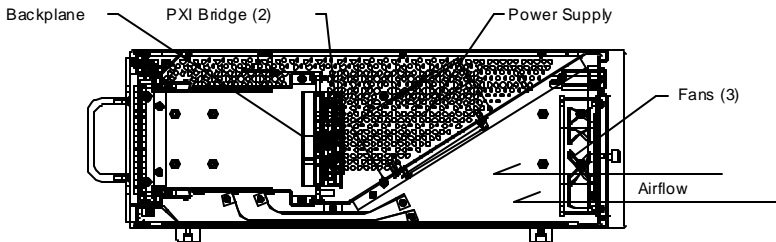


Exhaust Airflow (Sides)

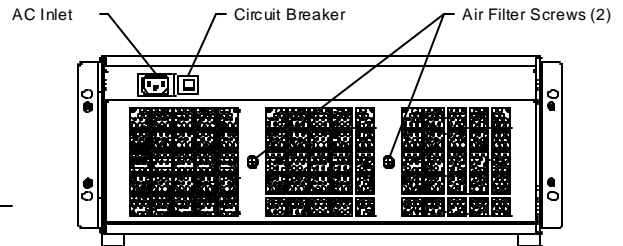
Right-Side View



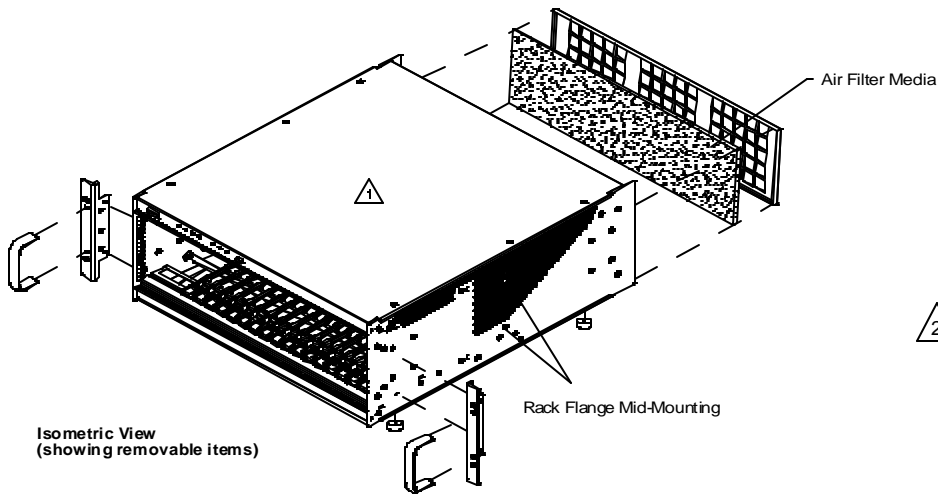
Front View



Left-Side View (Internal)

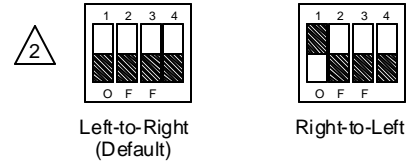


Rear View



Isometric View (showing removable items)

Bridge Trigger Signal Settings (SW1)



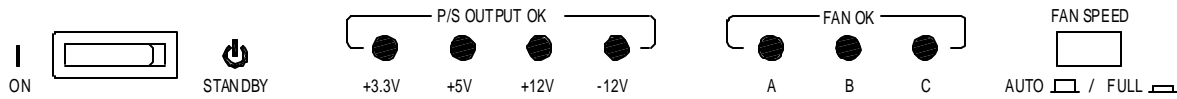
Dimensions:

D1: 21.17" (538 mm)	W1: 19.00" (483 mm)	H1: 6.97" (177 mm)
D2: 19.65" (753 mm)	W2: 17.34" (441 mm)	H2: 7.50" (191 mm)
D3: 19.50" (495 mm)		

Notes:

- 1 D is connector power, remove cover to access PXI bridges
- 2 Both PXI bridges must be configured identically  
SW1 is located at the top/rear of each PXI bridge

**Detailed View of Front Panel:**



## Ordering Information

Tracewell S32 for PXI/cPCI, 18-slot backplane, power supply, storage bay, monitoring and feet are available in the following standard configurations:

<b>Part number</b>	<b>Description</b>
532-6000-F00-00	Tracewell S32 for PXI/cPCI, 18-slot backplane, dual bridges (5V I/O), 600W AC power supply; US version

<b>Accessories</b>	
014-6002-001-0P	Shielded single-slot filler panel, 3U X 4T; installs in vacant slots
106-1009-099-01	Non-shielded single-slot filler panel, 3U x 4T; installs in vacant slots
110-1171-099-01	Subrack air block, single slot; snaps into a vacant slot to block airflow

### Notes

† As an option, Tracewell Systems can evaluate agency compliance for the customer's specific integrated product. Consult factory for more details

*visit our website at:*  
**www.tracewellsystems.com**  
 or call toll free: **1.800.848.4525**