

# Tracewell S32-RH for PXI

## 14-slot Rugged 3U/6U Dual Stack PXI System

### Description

The S32-RH is the latest in high power, rugged PXI chassis from Tracewell Systems. The S32-RH features rugged construction, plugging power and cooling, and RS485 monitoring making it ideal for the latest generation of high performance PXI instrumentation. Building on a long history of PXI systems, the Tracewell S32-RH was designed for test systems requiring low weight, high strength, and high power.

The S32-RH was designed for industrial and portable ATE environments requiring very durable construction, but also minimal weight. Advanced laminate welded construction combines lightweight materials to provide an extremely rigid structure. As well as adding strength and reducing weight, these methods also provide improved shock resilience. The low profile 4U system includes removable rack flanges and integral rear shock pin receivers to provide secure mounting within a transit case or 19" rack.

The dual stack 14-slot PXI backplane, along with its controller and star-trigger slots, supports both 3U and 6U modules. The hard-mounted rear bridge provides seamless integration between PXI segments and includes configurable trigger buffers and automatic V I/O detection. A front accessible switch allows the use to select between backplane or system clock source. Careful attention has been given to clock and star-trigger routing between all 14 slots to ensure the highest possible performance.

Powering the S32-RH is a rear plugging 800W power module that supports wide range AC input. The power supply provides very high current capacity and includes an isolated fan output to further reduce electrical noise at the backplane. A 600W version is also available. An integral power and cooling monitor with RS-485 interface monitors all PXI output voltages, inlet and exhaust air temperature and fan speed. The fully plugging module provides MTTR of <1 minute.

The ducted cooling system provides high volume and pressure performance. This makes S32-RH well suited for use with high wattage and/or highly restrictive modules where airflow often becomes a critical challenge. Rear intake and left side exhaust minimize the number of airflow turns for greater flow efficiency. The rear plugging fan panel also allows easy access for service or maintenance.

The Tracewell S32-RH is the ideal choice for the PXI users requiring both high performance and durability.



### Features

- Welded laminate construction - high strength, low flex
- 800W or 600W plugging power - 60A on 5V & 3.3V
- 14-slot 3U/6U dual stack PXI backplane
- High-pressure 220CFM plugging fan module
- Voltage, temperature, fan speed monitoring
- RS485 monitor interface
- Low-profile 4U design
- Ultra low weight <25 lbs.

## Physical

<b>Construction:</b>	Aluminum sheet, 5052-H32 alloy; major components: main outer and inner chassis (.062), rack flanges (.125"), top cover (.062"), rear panel (.080"); Aluminum Extrusion, 6101-T6 alloy; cardcage front profile
<b>Plastics:</b>	Cardguide, snap-in, .062" pcb, white nylon, UL 94V-2 material; Cardguide entry, snap-in, .062" pcb, neutral nylon, UL 94V-0 material; Front overlays, polycarbonate, UL 94V-0 material; feet
<b>Cardcage:</b>	Front loading sub-divided 3U/6U x 160mm, flush, 14-slots (7/3U 7/6U), IEEE 1101.10
<b>Dimensions:</b>	19.95" D (507 mm), 17.10"W (435 mm) without rack flanges, 19.00"W (483 mm) with rack flange 6.97"H (177 mm, 4U)
<b>Weight:</b>	25 lbs. (11.37 kg)
<b>Finish:</b>	Textured paint, carbide black; rack flanges and right front panel; all other aluminum is brushed clear chromate per MIL-STD 5541; right front panel includes slot numbering nomenclature
<b>Other:</b>	19" rack kit includes (2) rack flanges and handles; Hardware kit provided which includes (14) +5.0 (brilliant blue) and +3.3V (cadmium yellow) backplane I/O keys and (1) V I/O configuration bus-bar (uninstalled)

## Backplane

<b>Bus Structure:</b>	PXI 64 bit dual stack, system slot left
<b>Assembly:</b>	SMT/ press-fit assembly
<b>Layer count:</b>	14 layers
<b>Control:</b>	PRST#, DEG#, FAL#, return and remote sense (+5, +3.3, +/-12VDC)
<b>PCB:</b>	FR4 epoxy-glass laminate, multilayer, all-stripline, SMOBC, silkscreen on two sides, 1oz. copper signal and power planes minimum, UL 94V-0, .150" (3.8 mm) thickness
<b>Impedance:</b>	65 Ohms nominal on all signal lines, bare pcb
<b>Decoupling:</b>	SMT decoupling per PXI R2.0
<b>Control:</b>	Front accessible switch for selecting remote or on-board clock source
<b>Bridge:</b>	Includes one rear mounted PXI 64-bit pallet bridges with user configurable trigger buffer; factory setting is right-to-left trigger direction; Intel® 21154 bridge chip
<b>Compliance:</b>	PXI R2.1, PICMG 2.0 R3.0, hot swap compatible per PICMG 2.1

## Power

<b>General:</b>	AC input with PFC
<b>Total output:</b>	600W or 800W, maximum all output combined
<b>Input:</b>	90 – 264VAC, universal input
<b>Frequency:</b>	47 – 63 Hz
<b>Efficiency:</b>	70 - 80% typical
<b>Power factor:</b>	0.99 with PFC
<b>Input current:</b>	13A at 90VAC; 5A at 230VAC (600W) 10A at 90VAC; 4A at 230VAC (600W)
<b>Inrush current:</b>	40A maximum peak
<b>Hold-up time:</b>	20 ms minimum after removal of power at full load

## Power (cont.)

<b>DC outputs:</b>	<b>800W</b> +5V/ 60A, +3.3V/ 60A, +12V/17A (PXI bp), +12V/4A (fan power) and -12V/ 10A <b>600W</b> +5V/ 60A, +3.3V/ 60A, +12V/10A (PXI bp and fan power), -12V/ 4A
<b>Ripple/ noise:</b>	Less than 1% peak-to-peak or 50mV, whichever is greater; bandwidth limited to 20MHz
<b>Remote sense:</b>	All outputs, 500mV maximum compensation
<b>Cooling:</b>	Power supply includes internal DC fans
<b>Other:</b>	Rear removable power module; MTTR <1 minute

## Cooling

<b>Airflow:</b>	Rear intake, left side exhaust, pressurized; power supply cooled independently, fixed speed
<b>Fans:</b>	<b>800W</b> (1) 220cfm, high pressure tube-axial, 12VDC; rated 150cfm at 0.5" H2O <b>600W</b> (1) 150cfm, high pressure tube-axial, 12VDC
<b>Air filter:</b>	None provided
<b>Other:</b>	Rear removable plugging fan panel; MTTR <1 minute

## Control and Input

<b>Switches:</b>	Rear panel main power on/off switch (rocker)
<b>Power input:</b>	Rear panel AC inlet connector (IEC320), detachable line cord provided
<b>Circuit protection:</b>	Rear panel single pole circuit breaker, 10A (rocker)

## Monitoring

<b>Interface:</b>	Rear panel RS485 (D9 connector, AMP p/n 747321-4 or equiv.; configurable for Full or Half Duplex)
<b>Functions:</b>	PXI voltage (+5, +3.3, +12, -12VDC; at bp), fan voltage (+12VDC), fan speed, intake (1 sensor) and exhaust temperature (2 sensors); measurement accuracy within 1% (typical)

## Environmental

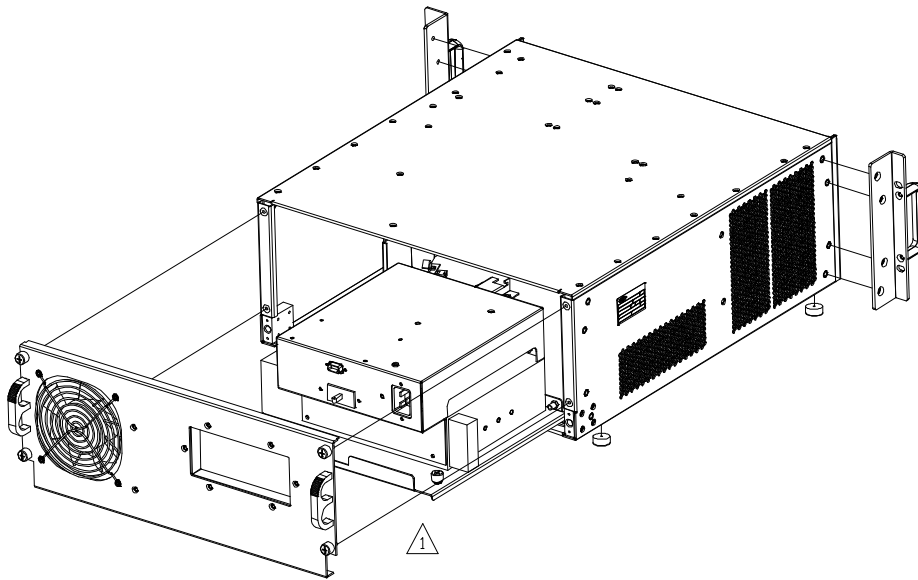
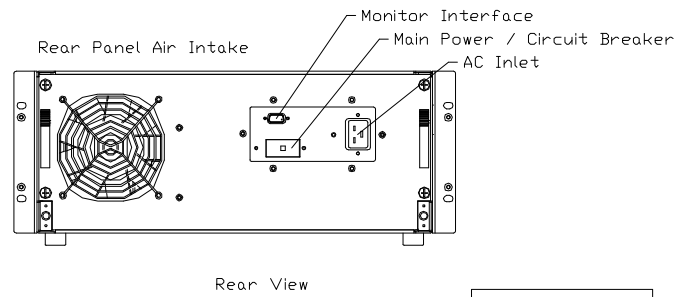
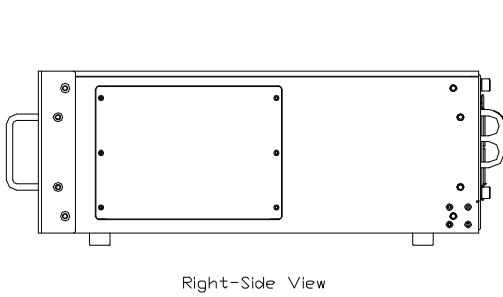
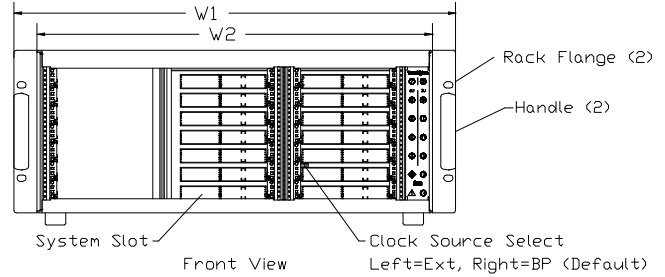
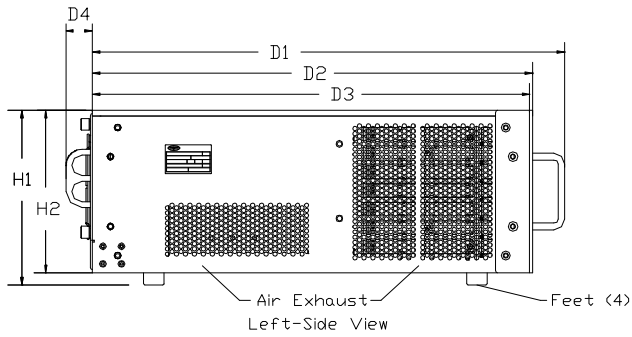
<b>Temperature:</b>	0 – 50oC operating; -40 to +85oC non-operating
<b>Shock/ Vibration:</b>	Basic transportation
<b>Humidity:</b>	5 – 95% non-condensing at 40oC operating, 0 – 95% non-operating
<b>Acoustic:</b>	70 dBA maximum, measured 1 meter from all surfaces

## Warranty

1 year limited warranty

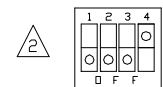
## Agency Compliance\*

**Safety/Emissions:** Data available for power supply only. Consult factory for more details

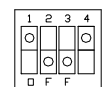


RS-485 PORT PINDOUT		
	PIN	ID
	1	ADD
	2	TXDA
	3	TXDB
	4	GND
ADDRESS		
OPEN = 03	5	ADD
5,9 = 04	6	GND
1,5 = 05	7	RXDB
1,5,9 = 06	8	RXDA
	9	ADD

Bridge Trigger Settings (SW1)



Primary-to-Secondary (Default)



Secondary-to-Primary

Dimensions:		
D1: 20.31" (516 mm)	W1: 19.00" (483 mm)	H1: 6.97" (177 mm, 4U)
D2: 18.94" (481 mm)	W2: 17.00" (432 mm)	H2: 7.50" (191 mm)
D3: 18.81" (478 mm)		
D4: 1.14" (29 mm)		

Notes
⚠ Disconnect power, remove fan panel and power module to access PXI bridge
⚠ Sets buffer direction of 8 bussed PXI triggers

## Ordering Information:

Tracewell S32-RH for PXI is available in the following standard configuration(s):

Part number	Description
532-6050-F00-00	S32-RH PXI, 14-slot, 800W, M485
532-6055-F00-00	S32-RH PXI, 14-slot, 600W, M485

### Accessories

014-6001-000-0P	PANEL,FILLER,6U X 4T,EMC,1101.10; installs in vacant 6U slots
014-6003-000-0P	PANEL,FILLER,3U X 4T,EMC,1101.10; installs in vacant 3U slots
110-2928-099-01	AIR RESTRICTOR,SUBRACK,100%,SNAP-IN; snaps into any vacant slot to block airflow

### Notes:

- \* Agency compliance applies to the power supply only, as shipped from Tracewell Systems. As an option, Tracewell Systems can evaluate agency compliance for the customer's specific integrated product. Consult factory for more details.

  
**request a quote at our web site:**  
**[www.tracewellsystems.com](http://www.tracewellsystems.com)**  
**or call: 1.800.848.4525**

© Copyright Tracewell Systems, Inc. 2004

Tracewell Systems, Inc. reserves the right to make changes without notice.  
All brand or product names may be trademarks or registered trademarks of their respective holders.  
Please consult Tracewell Systems for any special or custom requirements.

P/N 095-6034-000-0P Rev. 0 06/04