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Tracewell Systems

Data Sheets

567 Enterprise Drive Westerville, OH 43081 1.800.848.4525 phone 614.846.6175 fax 614.846.4450 www.tracewellsystems.com

T-Frame™ for VME

12-Slot VME Test and Development System

Description

Tracewell Systems offers the ideal VME test and development platform. The T-Frame for VME combines unique design and features into a versatile 12-slot bench-top test system perfect for software and board-level development, manufacturing and test.

T-Frame's patented open-frame design provides unrestricted access to installed boards, eliminating the need for performance robbing extender cards. Removable translucent side covers protect installed modules, yet easily removes for full access to both sides of installed VME modules. A protective rear cover is also removable allowing access to the backplane for probes or additional cabling. T-Frame includes comprehensive monitoring of all backplane voltages, current and exhaust air temperature. A front panel interface displays these monitor outputs and includes temperature, voltage and reset control. The 12-slot backplane provides 32 and 64-bit compatibility, auto-configuration and SMD/press-fit assembly for speed and reliability. An embedded power supply delivers 500 watts with up to 80 amps of 5 volts and features universal input and power factor correction. Fans provide distributed pressurized airflow and adjust from full to half speed to reduce noise. Durable aluminum construction makes T-Frame rugged yet easily portable; perfect for use in remote locations. Other conveniences include a tilt base, removable side and backplane access covers and recessed carrying handles.

Tracewell T-Frame for VME combines unmatched utility, performance and innovative design. Versatile enough for any stage from concept through production, the Tracewell T-Frame for VME is the perfect tool for any application.



T-Frame™ US Patent 5,416,427

Features

- Patented, open-frame design eliminates extender boards
- Convenient voltage, current and temperature monitoring
- 500W power supply provides up to 80A of 5V
- Margin control for +5V output optional
- 32 & 64-bit compatible, 12-slot auto-configuring backplane
- Removable side and rear covers provide unrestricted access
- Adjustable fans reduce operating noise

ISO 9001 certified

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Specifications

Physical

Construction:	Sheet aluminum sheet, 5052-H32 alloy; major components: sides (0.250"), top and bottom covers (0.062"), base (0.188") Aluminum Extrusion, 6101-T6 alloy; cardcage front/middle profile
Plastics:	Cardguide and lead-in, snap-in, 0.062" pcb, white, glass reinforced polycarbonate, UL-94V-0, Adjustment knobs, black polycarbonate, UL-94HB flame rated material; Tinted view windows, gray polycarbonate, UL-94HB material
Cardcage:	Front 6U x 160mm, 12 slots, IEEE 1101.1
Dimensions:	14.46" D (367 mm), 15.52"W (394 mm), 16.37"H (416 mm)
Weight:	25 lbs. (55 kg)
Finish:	Textured paint, T-Frame light gray per Sherwin Williams F63TXA0819; all exterior surfaces All other all aluminum is brushed gold chromate per MIL-STD 5541, steel is bright zinc plate
Accessories:	(2) side, (1) rear removable translucent protective covers provided

Backplane

General:	12-slot, VME 32/64 bit, J1-J2 monolithic, 96 pin DIN
Bus structure:	VME 32/64 bit
Assembly:	SMT/press-fit assembly
Layer count:	8 layers
Control:	Active automatic bus-grant and IACK jumpering, active termination
PCB construction:	FR4 epoxy-glass laminate, multilayer, all-stripline, SMOBC, silkscreen on two sides, 1oz. copper signal and power planes minimum, UL94V-0, 0.125" (3.18mm) pcb thickness
Impedance:	50 Ohms nominal on all signal lines, non-loaded pcb
Termination:	Active onboard, electrically inboard; Thevinin equivalent to 194 Ohms at 2.94V
Decoupling:	High frequency decoupling at each slot (0.1F SMD ceramic); Bulk distributed low frequency (100F SMD Tantalum)
Rear shrouds:	J1 first slot, J2 all slots; includes latches
Rear tails:	13mm extended tails on J1 first slot, J2 all slots
DC distribution:	Power bridges for +5VDC and return (140A rating), power bolts for +/-12VDC (70A rating)
Compliance:	VITA Rev. C.1

Power

Option code PS1:	Provides 5V output margin control; +/- 5% nominal
Total output:	500W, maximum all outputs combined
Input:	90 – 264VAC, universal input
Frequency:	47 – 63Hz
Efficiency:	75% typical
Power factor:	0.99 with PFC
Input current:	8A at 90VAC; 3A at 230VAC
Inrush current:	40A at 120VAC, 80A at 230VAC
Hold-up time:	20 ms minimum after removal of power at full load
ACFAIL:	Logic low signal asserted to backplane after removal of AC
DC outputs:	+5.0V/80A, +12V/20A, -12V/20A
Ripple/Noise:	Less than 1% peak-to-peak or 100mV, whichever is greater
Load requirement:	None
Output adjustment:	+5V margin control (+/-5%; requires PS1)
Remote sense:	All outputs, 250mV maximum compensation
Inhibit:	Global DC inhibit available (not wired)
Temperature:	25^{O}C operating; 70^{O}C non-operating
Cooling:	(1) 20cfm fan

Cooling †

Airflow:	Bottom intake, top exhaust, pressurized; VME cardcage and power supply cooled independently
Fans:	(2) 80cfm, tube-axial, 12VDC
Adjustment:	Cardcage fans are adjustable in 10% increments from half to full speed; rear panel rotary control
Air filter:	Bottom accessible, washable media, 30 PPI

Control and Input

Switches:	*Front panel:* voltage select (rotary); Voltage/ ^{O}C select (pushbutton, latching); reset control (pushbutton, momentary) *Rear panel:* cardcage fan speed (rotary), AC power switch (rocker)
Null offset:	Rear panel switch when active removes backplane terminator current value from displayed current (toggle; up-active, down-inactive)
Power input:	Rear panel AC inlet connector (IEC320), detachable 7' line cord
Circuit protection:	Rear panel single pole fuse drawer, 10A delay 1.25" x .25" fuse, spare fuse provided

Monitoring

Interface:	Two front panel LCD numeric displays and LED indicators
Functions:	Voltage and current monitor of backplane +5, +/-12VDC; front panel voltage selector switch (rotary) Exhaust air temperature over front cardcage slots (^{O}C), user selectable; rear access sliding probe Backplane RESET control and LED status monitor; 200ms reset Control to backplane; asserted by front panel switch/VME module Power-on LED indicator; referenced to power supply +5VDC output SYSFAIL LED indicator, referenced to backplane SYSFAIL line
Outputs:	*Voltage and current monitor* displays readings on two front panel green LCDs; displays two decimal places when +5, +12 or -12V selected for current 0 – 19.99 amps, one decimal place when +5 Hi selected for 5V current above 19.99 amps *Exhaust air temperature* displays on the Voltage/ ^{O}C LCD when TEMP switch is depressed *Power-on LED indicator* illuminates green when power supply +5VDC is present *RESET indicator* illuminates red when backplane RESET is asserted *SYSFAIL indicator* illuminates red whenever backplane SYSFAIL is asserted
Tolerance:	Voltage measurement within 1%; current measurement within 3%; temperature within 3^{O}C (Tolerances assume a 20-minute warm-up period for chassis and installed components)

Environmental

Temperature:	0 – 50^{O}C operating with specified airflow; -20 – 70^{O}C non-operating
Shock/Vibration:	Basic transportation per ASTM 0775
Humidity:	5 – 95% non-condensing at 40^{O}C operating, 0 – 95% non-operating
Acoustic:	<55 dBa maximum, measured 1 meter from all surfaces

Agency Compliance††

Safety/Emissions:	Available for the power supply only. Consult factory for details

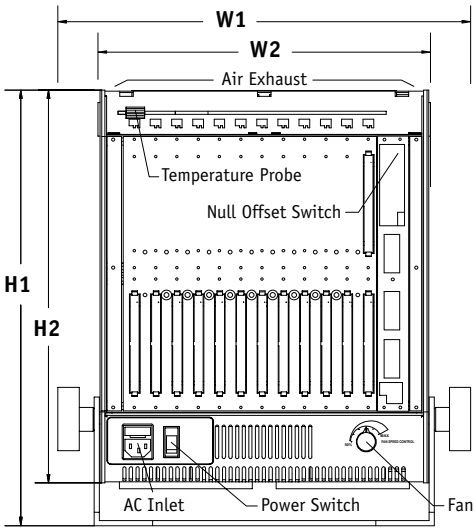
Warranty

1 year limited warranty

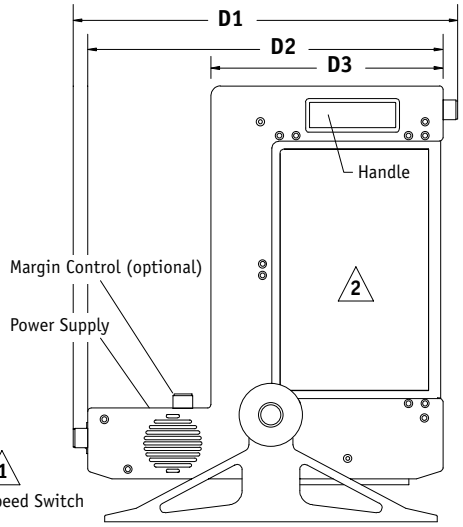
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Drawings

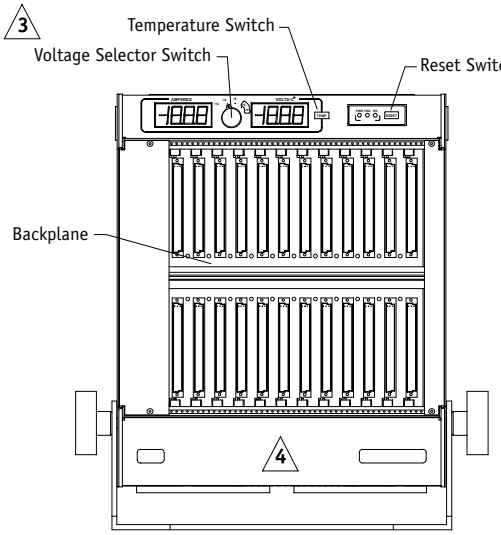
Main Assembly (Type 1 shown)



Rear View

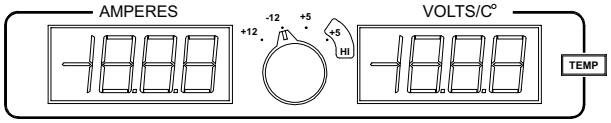


Left-Side View

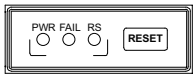


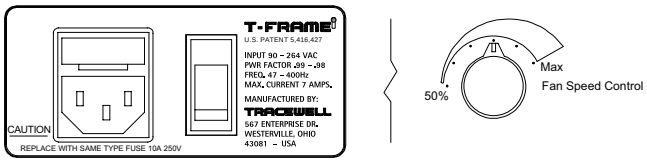
Front View

Sub-Assemblies and Options



Front Panel Detail





Rear Panel Detail

Side View (showing cover installation)

Dimensions:

D1: 14.46" (367 mm)
D2: 13.36" (339 mm)
D3: 8.73" (222 mm)

W1: 15.52" (394 mm)
W2: 12.51" (318mm)

H1: 16.37" (416 mm)
H2: 13.92" (354 mm)

NOTES:

1. Full speed operation required above 75W
2. Shown with removable side covers installed
3. Select "5V HI" setting to display current above 20A
4. Clean air filters regularly to maintain proper cooling

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Call Us!

Ordering Information

T-Frame for VME includes chassis, backplane, power supply, and monitoring, and is available in the following standard configurations:

Part number	Description
580-6100-F00-00	T-Frame for VME with 500 watt power supply
580-6100-F01-00	T-Frame for VME with 500 watt power supply, 5 volt margin control (PS1)

Accessories

106-1001-099-01	Non-shielded single-slot filler panel, 6U X 4T; installs in vacant slots
121-6012-099-01	Subrack air block, single slot, 1101.1; snaps into a vacant slot to block airflow

Notes

† IMPORTANT fan speed switch must be set to maximum setting for output power levels greater than 75 watts

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

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