



FineTest

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Box Builds and Sub-Assemblies



Functional ATE & Power Supply Testers



Military and Aerospace Test Systems

Functional ATE Systems

Power Supply Test Systems

Hi-Pot Test Systems

ESS / Burn-In / Vibration Monitoring Systems

Manual Test Systems

Test Fixtures and ITAs

Box Builds and Sub-Assemblies

Switching and I/O Cards

Custom Cabinets and Accessories



KEYSIGHT
TECHNOLOGIES

Solutions Partner

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Functional ATE & Power Supply Test Systems



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Box Builds and Sub-Assemblies

Depending on the application, at least one or more semi-custom sub-assemblies will be needed for testing.

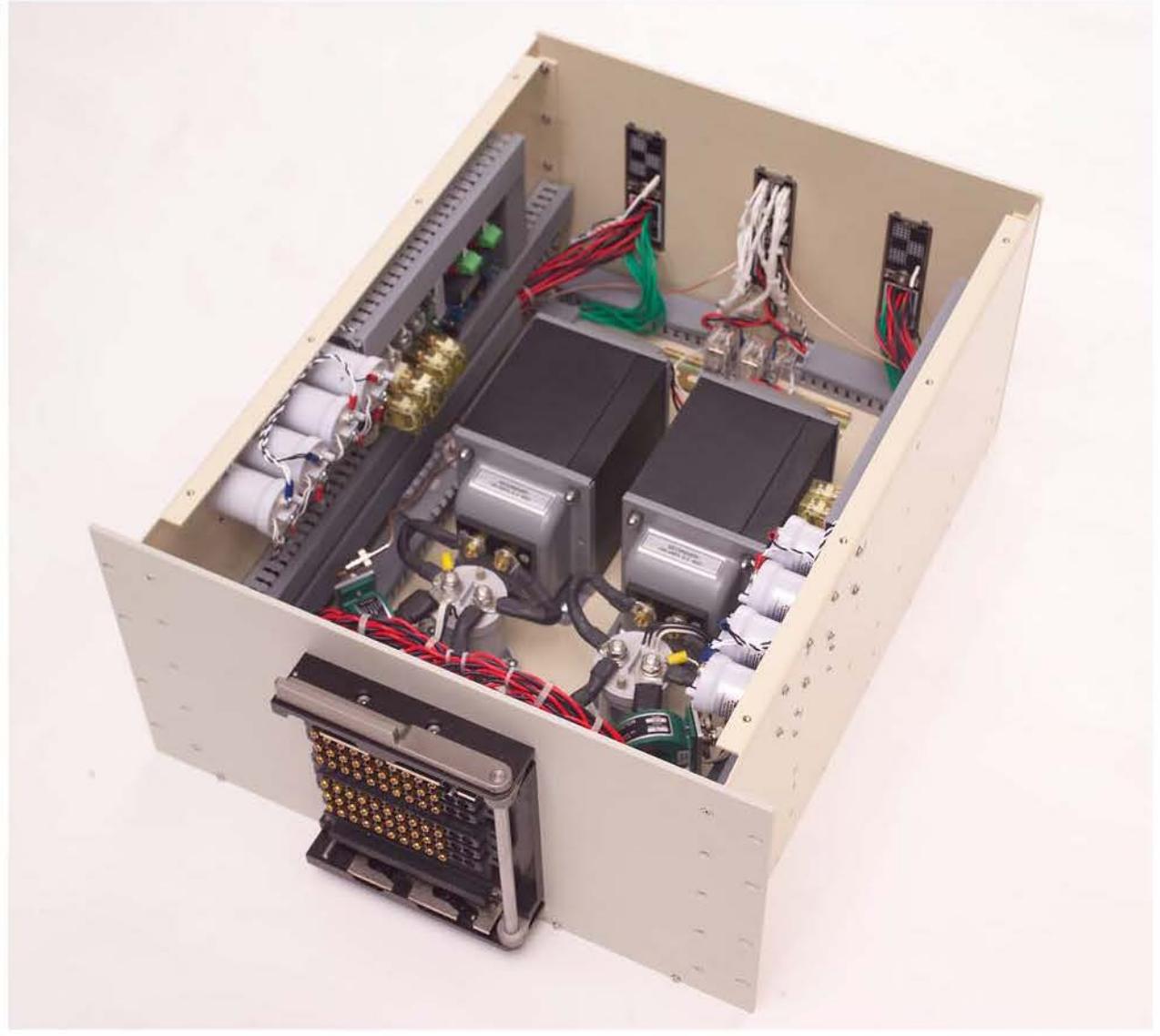
FineTest provides both design and assembly of semi-custom units.

The following pages showcase some examples of the many Box Builds and Sub-Assemblies we have built and used in our Power Supply Testers and Functional ATEs.



Dual DC Interface Unit with High Power AC Injection

Box Builds and Sub-Assemblies

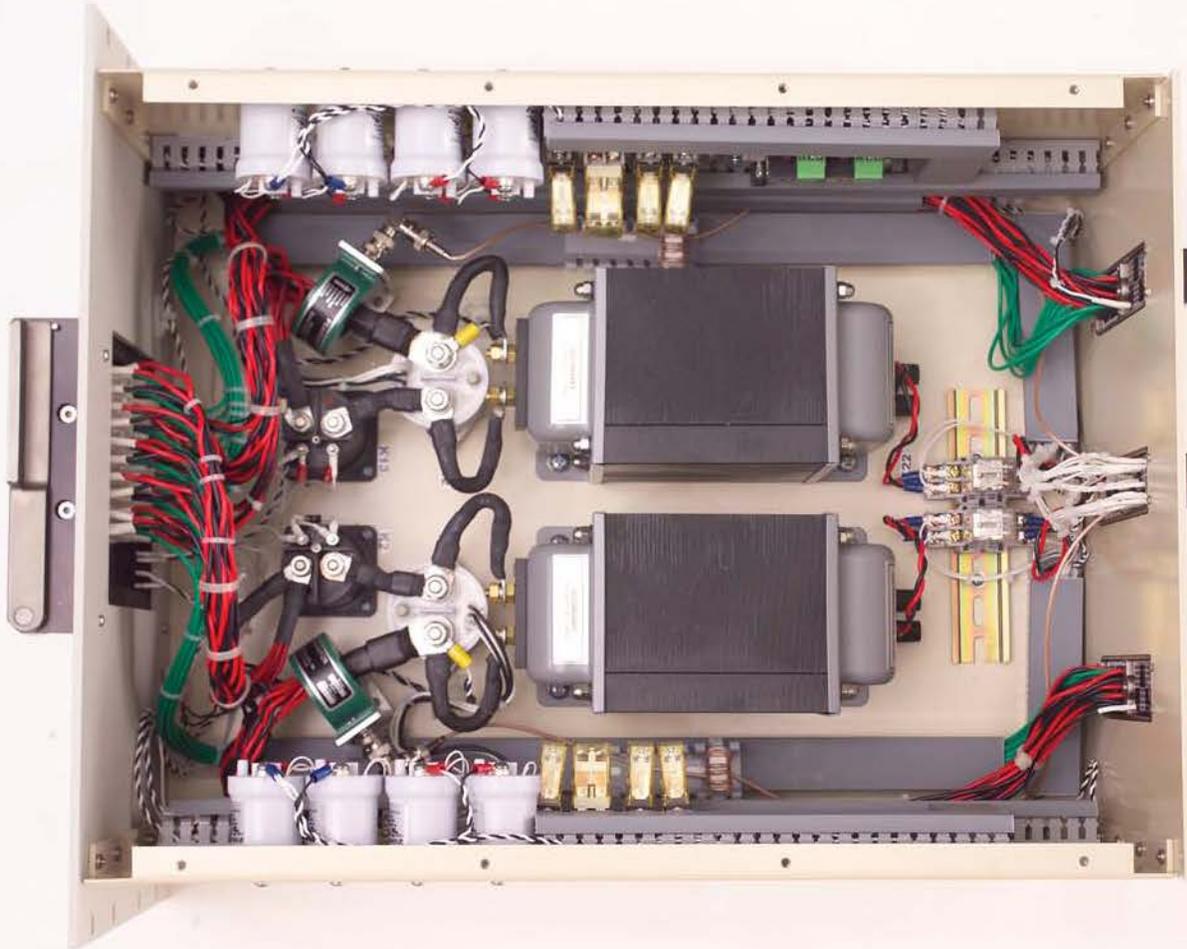


Front View of DC Interface Unit with Cover removed

Application: Military Power Supply Test

Features:

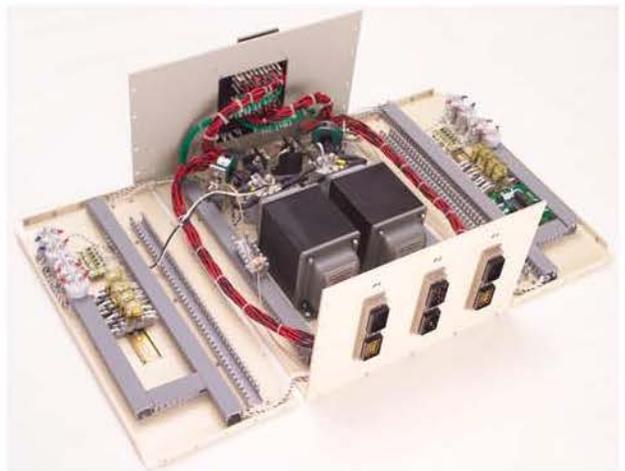
- Dual DC Interface in one Unit
- Dual High Power Programmable Frequency AC Injection to test UUT AC Rejection
- Dedicated Virginia Panel Interface
- High Frequency Current Transformers
- High Current DC On/Off and Safety Interlock



Top View showing High Current Transformers and High Power Relays



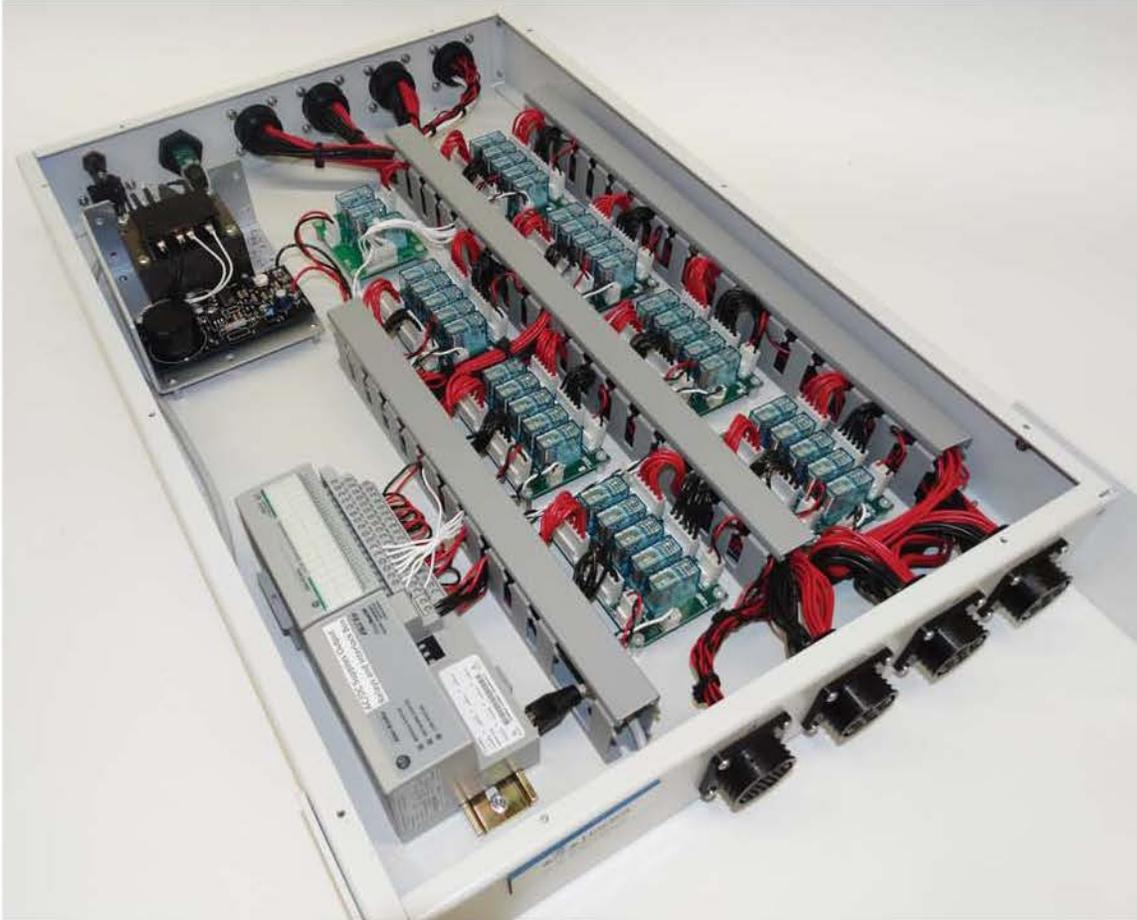
Rear View with Cover installed showing Virginia Panel iCon Connectors



All sides drop down for easy access

AC and DC Interface Unit for Functional ATE

Box Builds and Sub-Assemblies



Top Angle view of DC Interface Unit with Cover Removed

Application: Functional ATE AC and DC Interface Unit
High volume production test

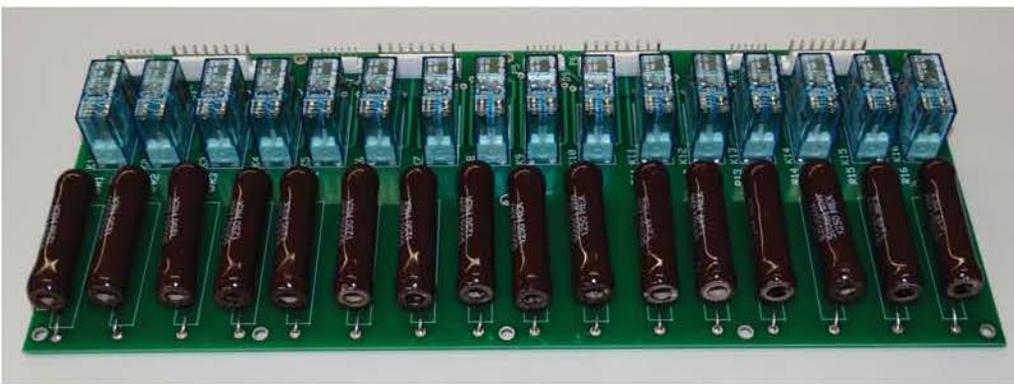
Features: Remote Programmable On/Off for AC and DC Supplies
In series with System Safety Interlock

64 Minimum Resistive Loads for Functional ATE

Box Builds and Sub-Assemblies



*Rear Angle View
with cover removed
showing
4 boards of
16 Loads each*



Close-Up of 1 Board with 16 Loads and the Load On/Off Relays

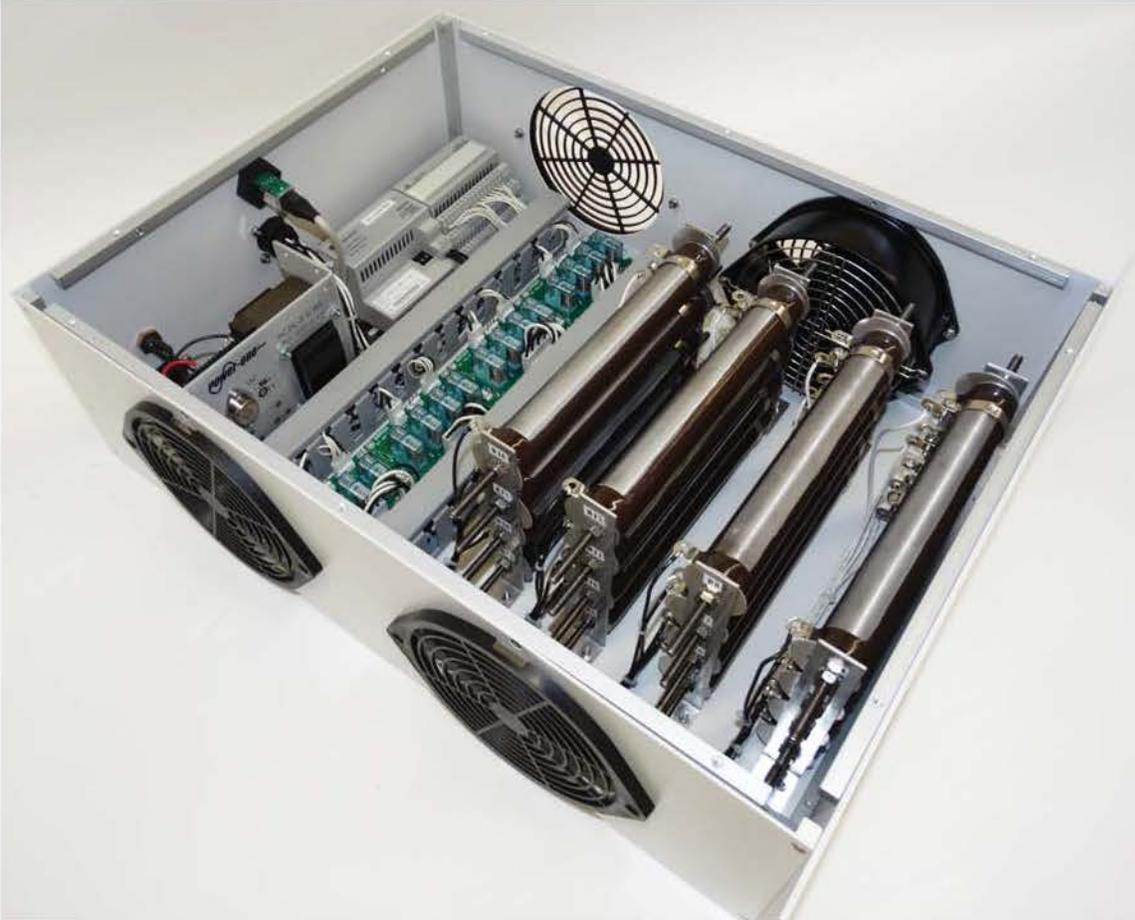
Application: Minimum Resistor Load Unit for Functional ATE

Features: 64 5kOhm Min Loads with Remote On/Off

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AC Resistor Load for Functional ATE

Box Builds and Sub-Assemblies



Top Angle view of AC Resistor Load with Cover Removed

Application: Functional ATE AC Resistive Load
High volume production test

Features: Remote Programmable Load On/Off
Fans only turn on when a Load is On

Power Distribution Unit with Remote Control AC On/Off



Box Builds and Sub-Assemblies



Rear View showing AC Input and Output Connectors

Front Angle View with cover removed showing Circuit Breaker, Contactor, AC On/Off boards and Remote Digital IO Control Units

Application: Power Distribution for Functional ATE

Features: Remote Control On/Off of AC Outputs

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32x4 5A Power Matrix Unit for Functional ATE

Box Builds and Sub-Assemblies



Top Angle view of Power Matrix Unit

Application: Functional ATE
High volume production test

Features: Remote Programmable
32x4 Matrix 5A@30Vdc/240Vac

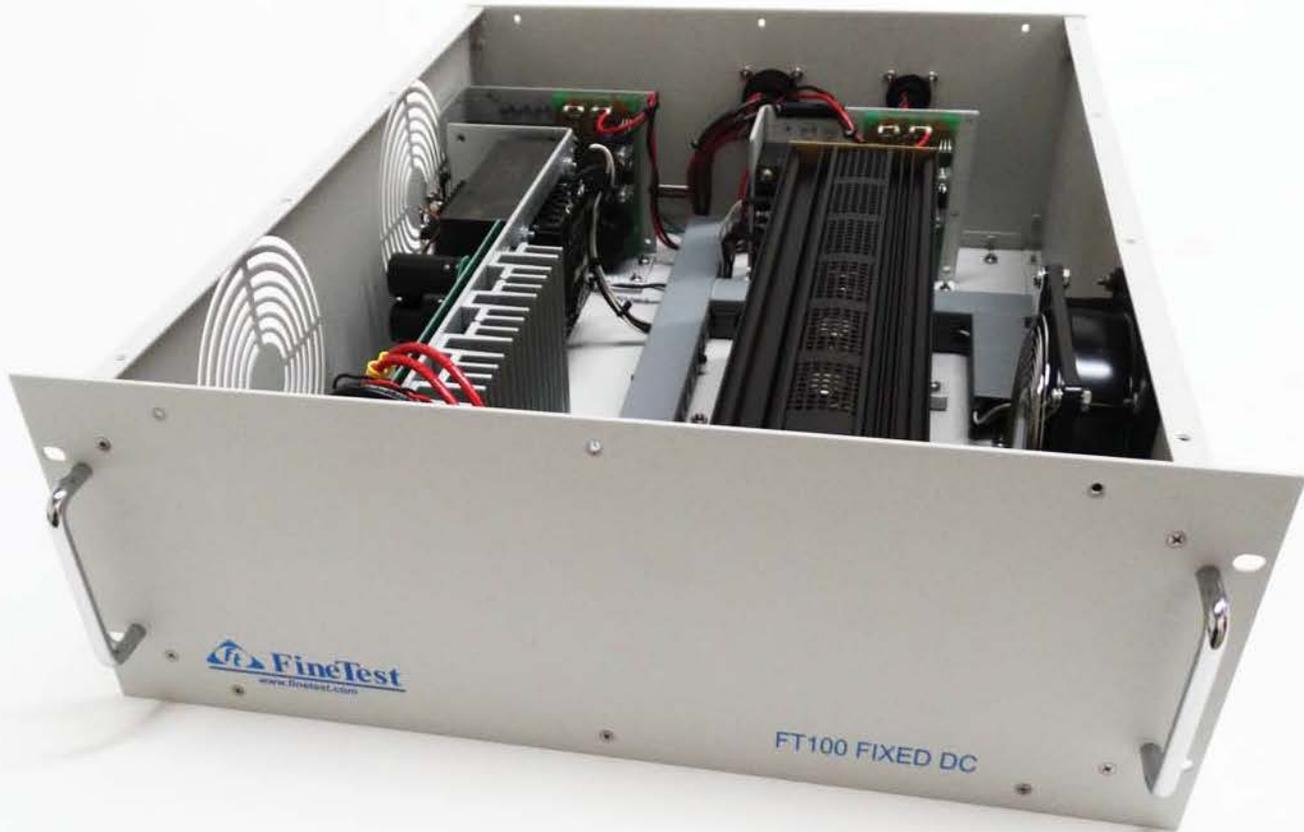


Side view of Power Matrix Unit

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Fixed DC Power Supplies for Functional ATE

Box Builds and Sub-Assemblies



Front View



Top View



Rear View

Application: Fixed DC Power Unit for Functional ATE
Features: Two 5V, Two 24V DC Power Supplies

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48x9 Low EMF Precision Matrix for Functional ATE

Box Builds and Sub-Assemblies



Cover removed showing 3 16x9 Cards

Application: Precision 48X9 low EMF Matrix

Features:

- Less than 1uV emf relays used
- 1U Rack-Mount Height
- USB and Ethernet Interface
- Software Drivers for:
 - NI LabView & LabWindows/CVI,
 - Microsoft C#, Keysight (Agilent) VEE



Front view with cover

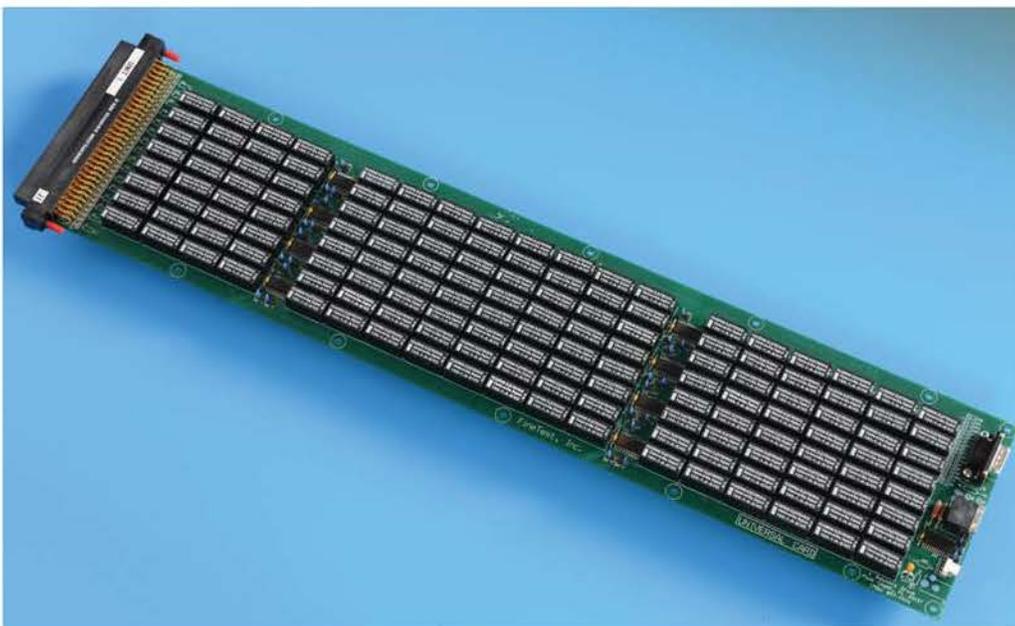
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96x9 Low EMF Precision Matrix (Dual 48x9 in Parallel)



Box Builds and Sub-Assemblies

Front View of two 48x9 configured as a 96x9 Low EMF Precision Matrix



Close-Up of one 16x9 Low EMF Precision Matrix Card

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Load Interface Unit with On/Off and Polarity Reversal

Box Builds and Sub-Assemblies



Top View with Cover Removed showing High Voltage/ High Current Power Relays

Application: PowerSupply Testing

Features: Multiple Electronic Load Interface with:
Load On/Off Control
Load Polarity Reverse Control



Front View Cover Removed



Rear View Cover Removed

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Resistive Load Unit for Power Supply Testing

Box Builds and Sub-Assemblies



*Front Angle View with cover removed
showing Resistors, PCBs, Relays etc.*

Application: Power Supply Test

Features: Resistive Loads On/Off
Resistive Ladder to set
exact value

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Top View showing Resistors and High Power Relays

DC Interface Unit with High Power AC Injection

Box Builds and Sub-Assemblies



Front View of DC Interface Unit with Cover removed

Application: Military Power Supply Test

Features:

- DC Interface on Slide-Out Shelf
- High Power Programmable Frequency AC Injection to test UUT AC Rejection
- Computer Monitor mounted on front
- High Frequency Current Transformers
- High Current DC On/Off and Safety Interlock



Top View with Cover removed

Load Shorting Interface Unit for Power Supply Testing



Box Builds and Sub-Assemblies

Front view inside the Load Shorting Interface Unit

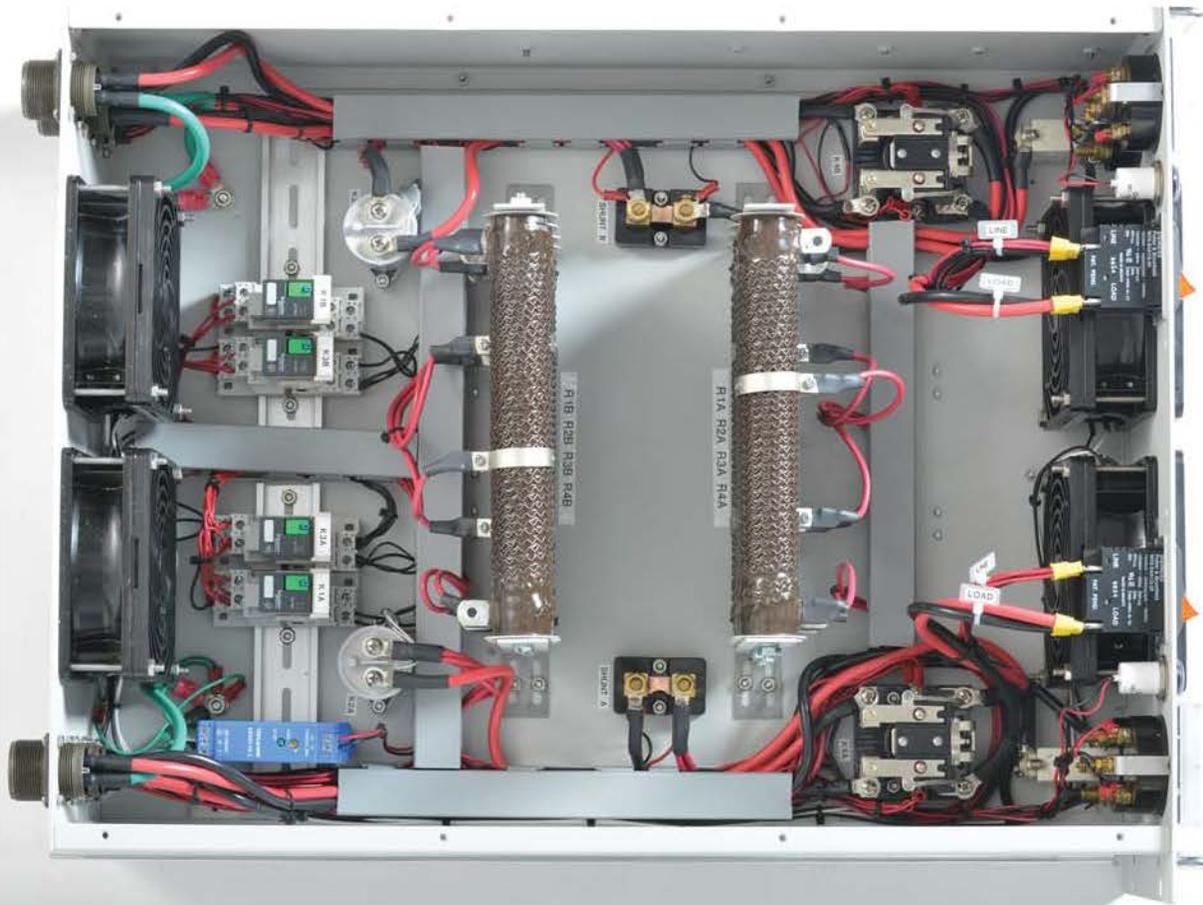
Application: Military AC/DC and DC/DC Power Supplies
High Volume Production Test

Features: Connects 9 Electronic Loads in the Tester to the
Bus Bars with High Current Relays
so the loads can be Shorted individually or in
parallel through the DC current Shunt

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Dual UUT Interface Unit for Power Supply ESS

Box Builds and Sub-Assemblies



Top View with Cover Removed

Application: Power Supply ESS

- Features:
- 2 UUTs per Interface Unit
 - Resistive Loads and Shunts
 - Individual Input On/Off Control
 - Individual Load On/Off Control
 - Light Indicators, Circuit Breakers
 - Pop-Out Fuses, V/I Meters



Front View of Dual UUT Interface Unit



Rear View of Dual UUT Interface Unit

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Dual Output UUT Interface Unit for Power Supply ESS Testing



Box Builds and Sub-Assemblies

Front View with cover removed



Top View with cover removed



Rear View of UUT Interface Unit

Application: Dual Output Power Supply
ESS Testing

Features: Resistive Loads
HV Differential Probe
AC Input On/Off Control
Lamps, Circuit Breaker,
Voltage and Current Meters

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3 Phase AC Interface Unit for Power Supply Testing

Box Builds and Sub-Assemblies



AC Interface Unit with Cover Removed

Application: Power Supply Testing

Features:

- 3 Contactors with On/Off Control for Phase Drop Testing, Inrush, Power On Time, Hold-Up Time etc.
- 3 Current Meters for Inrush Current
- 3 Step Down Transformers for Voltage Monitor Signal to Scope for Timing Tests



Top view with cover removed



Rear view of AC Interface Unit

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Fixed and Auxillary DC Unit for Functional ATE



Box Builds and Sub-Assemblies



Rear View

Front View with cover removed

Application: Functional ATE

Features: Fixed DC Outputs,
Selectable Auxillary DC Input
LED Indicators and Fuses

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Multiple Resistive Load Unit for Power Supply Testing

Box Builds and Sub-Assemblies



Top View with Cover Removed

Application: Power Supply Testing

Features: Multiple Resistive Loads in 1 Unit
Individual Load On/Off Control
Fans turn on only when a Load is on



Front View of Resistor Load



Rear View of Resistor Load



DC Interface Unit for Power Supply Testing



Box Builds and Sub-Assemblies

Front View with Cover Removed



Top View with Cover Removed

Application: Power Supply Testing

Features: Multiple DC Sources Voltage & Sense
On/Off Control and Safety Interlock



Rear View

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Multiple Resistive Load Unit for Power Supply Testing

Box Builds and Sub-Assemblies



Top View with Cover Removed

Application: Power Supply Testing

Features: Multiple Resistive Loads in 1 Unit
Individual Load On/Off Control
Fans turn on only when a Load is on



Front View of Resistor Load



Rear View of Resistor Load



3 Phase Power Distribution Unit for Power Supply Testing



Box Builds and Sub-Assemblies

Rear View with cover removed showing
Input and Output AC Connectors



Top View with Cover Removed

Application: Power Distribution for
Power Supply Tester

Features: 3 Phase, 60A, 208Vac L-L Input
Circuit Breakers, Contactor,
Remote On/Off,
Multiple AC Outputs



Front View showing Circuit Breakers

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Multiple Resistive Load Unit for Power Supply Testing

Box Builds and Sub-Assemblies



Top View with Cover Removed

Application: Power Supply Testing

Features: Multiple Resistive Loads in 1 Unit
Individual Load On/Off Control
Fans turn on only when a Load is on



Front View of Resistor Load

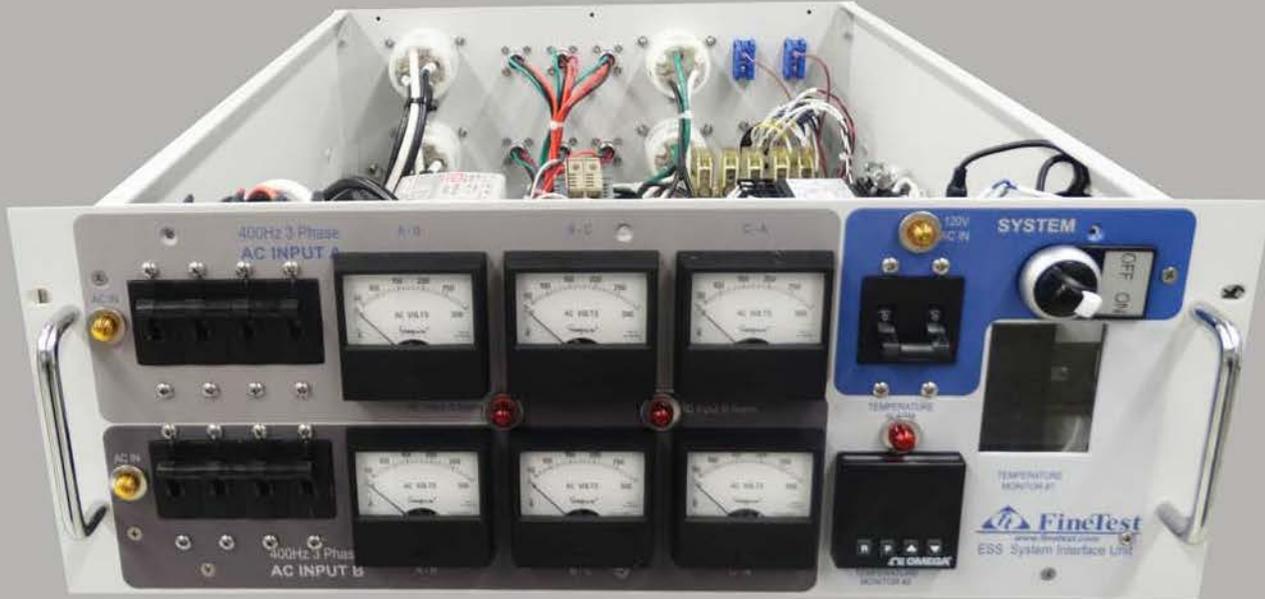


Rear View of Resistor Load



ESS Interface Unit for Power Supply ESS Testing

Box Builds and Sub-Assemblies



Front View with cover removed



Top View with cover removed



Front View of ESS Interface Unit in use

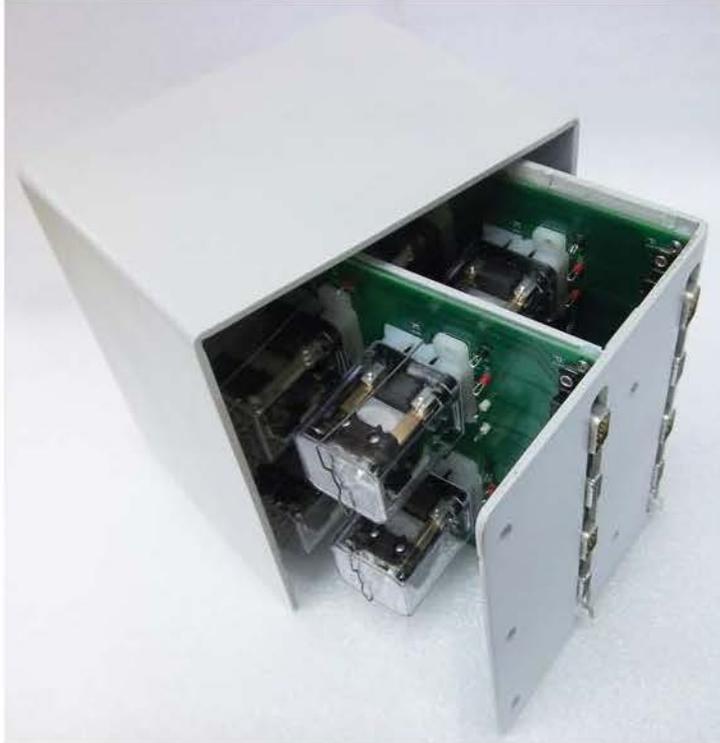
Application: ESS Monitoring System

Features: Dual 3Phase 400Hz AC Inputs, Dual AC Input Monitor Relays, Dual AC Input On/Off Control, Lamps, Circuit Breakers, AC Voltage and Current Meters, System Input On/Off & Interlock, Dual Temperature Sensors

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DC On/Off and Reversing Unit for Functional ATE

Box Builds and Sub-Assemblies



Front with cover opened



Cover Removed showing Relay Boards

Application: Functional ATE

Features: DC On/Off Control
DC Reverse Voltage Control
Safety Interlock



Close-Up of one Relay Board showing DB9 Connectors and Test Points



AC Interface & Blocking Diodes Inverter & Battery Charger Test



Box Builds and Sub-Assemblies



Rear View Showing Diodes on the Heat Sink

Front View with Cover Removed

Application: Inverter Test and
Battery Charger Test

Features: Power Diodes block
DC Output from DC Input
AC On/Off, Interlock,
AC V/I Monitors

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Scope Interface Unit for Functional ATE

Box Builds and Sub-Assemblies



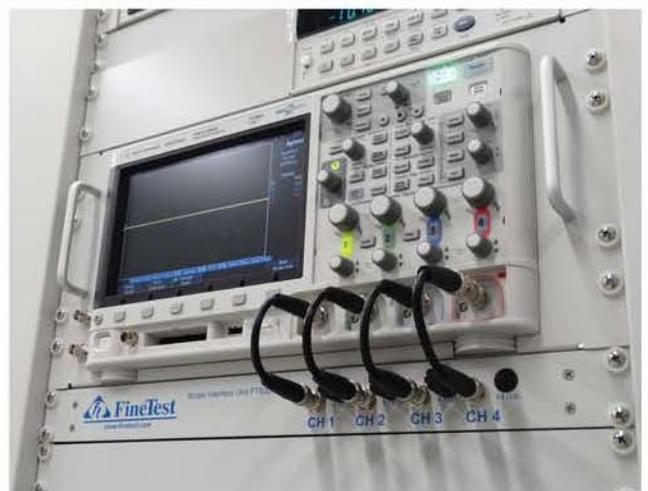
Front View of Scope Interface Unit showing scope connection BNCs and Fuses



Rear View showing Inputs and Control Lines

Application: ATE Scope Measurements
Filters to Clean Signals for
Timing Tests

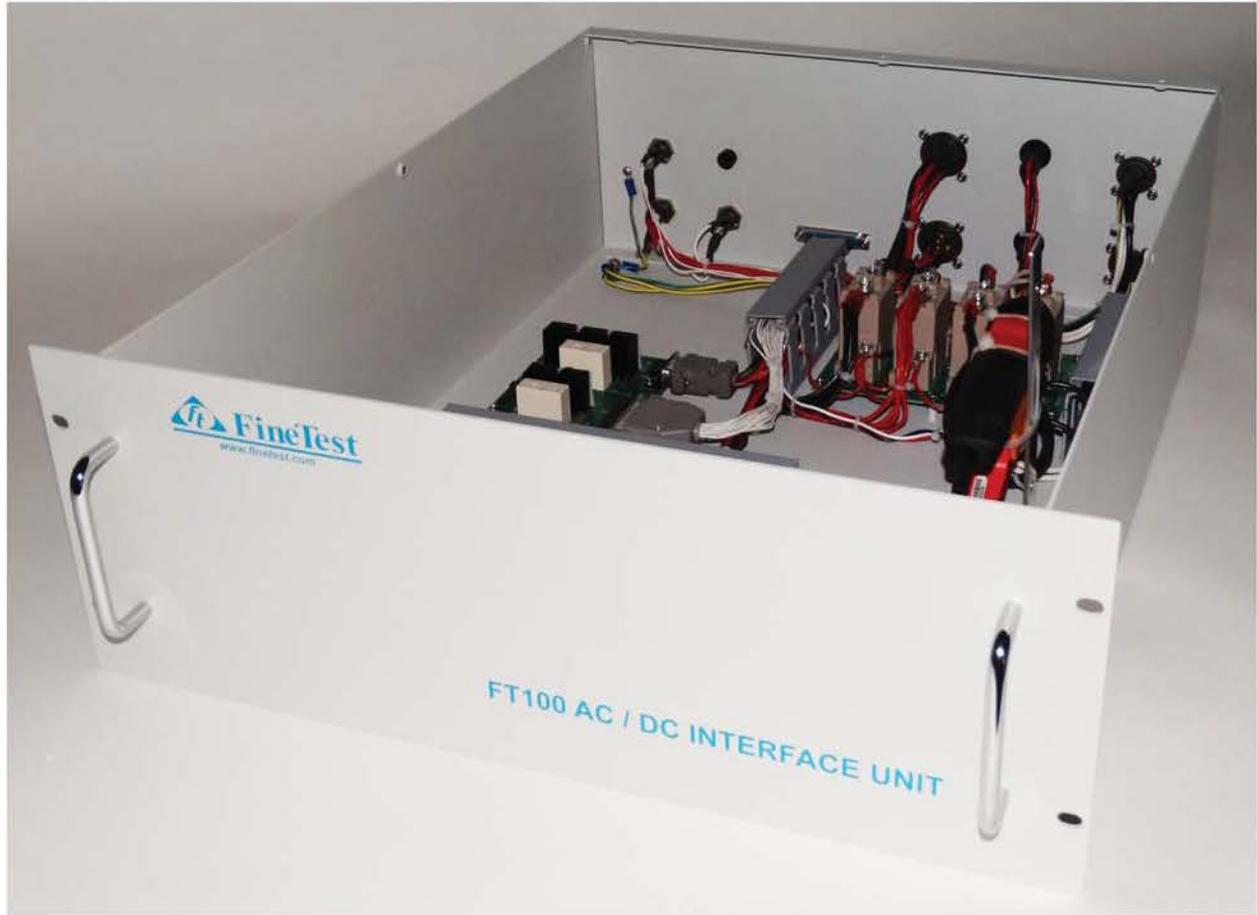
Features: 1U Rack-Mount Height
1 Channel for Differential Probe
3 Channels with Programmable
Low Pass Filters and Fuses



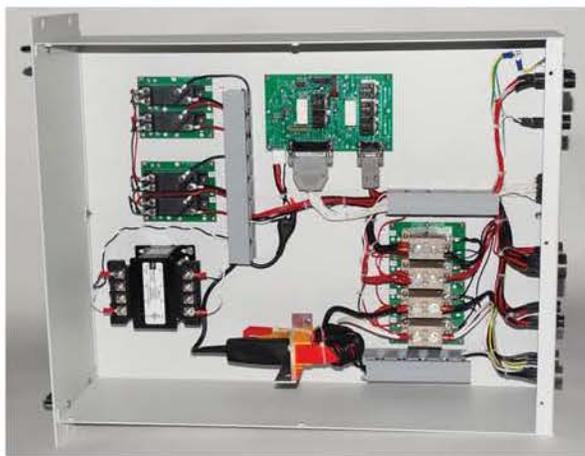
Scope Interface Unit in an ATE



AC / DC Interface Unit for Power Supply Tester



Box Builds and Sub-Assemblies



Top View



Rear View

Front View

Application: AC/DC Interface Unit for Power Supply Tester

Features: Safety Interlock, AC and DC On/Off
AC Current and Voltage Measurements

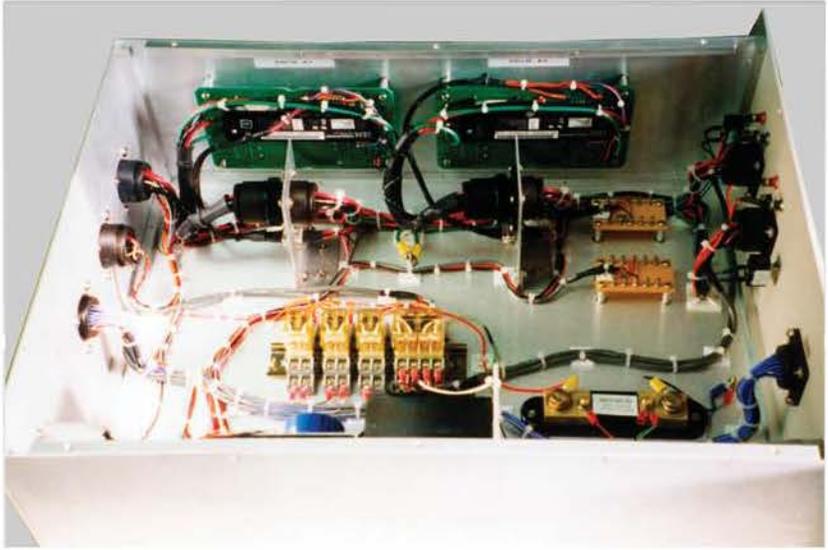
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UUT Control Interface Unit for Power Supply Testing

Box Builds and Sub-Assemblies



*Front view of
Control Interface Unit*



Side view inside Control Interface Unit

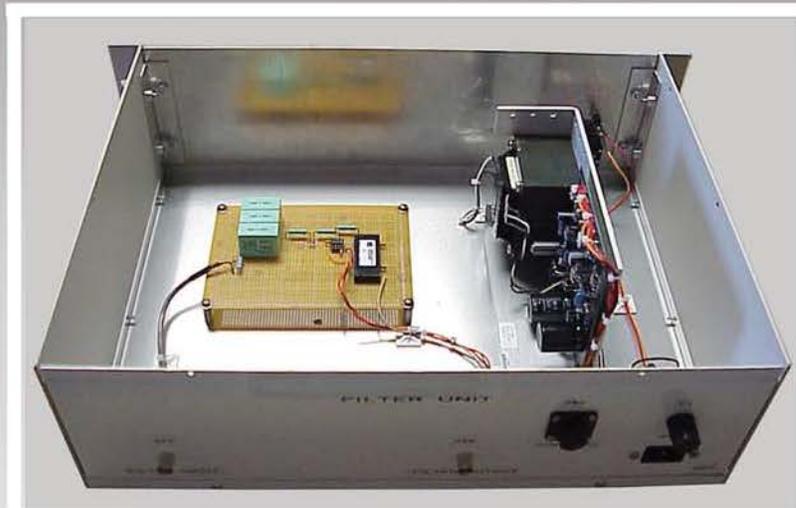
Application: DC-DC Power Supplies
High volume production test

Features: Switches DC Input Power and RS485 Communication Lines
between UUT Input Connector J1 and J2
DC Input Current Shunt for efficiency Testing

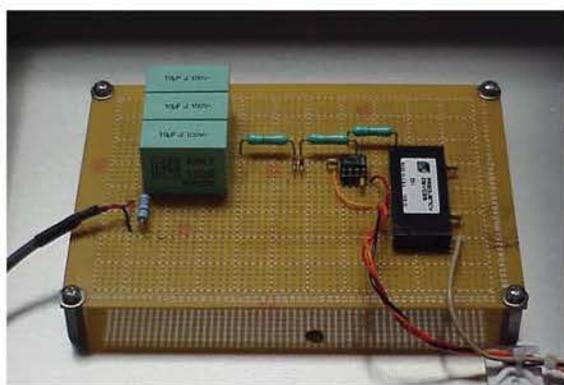
C Message Weighted Filter Unit for Telecom dBRnC Test



Front view of C Message Weighted Filter Unit



Rear view inside C Message Weighted Filter Unit



Close-Up of C Message Filter

Application: Telecom Power Supplies
High Volume Production Test

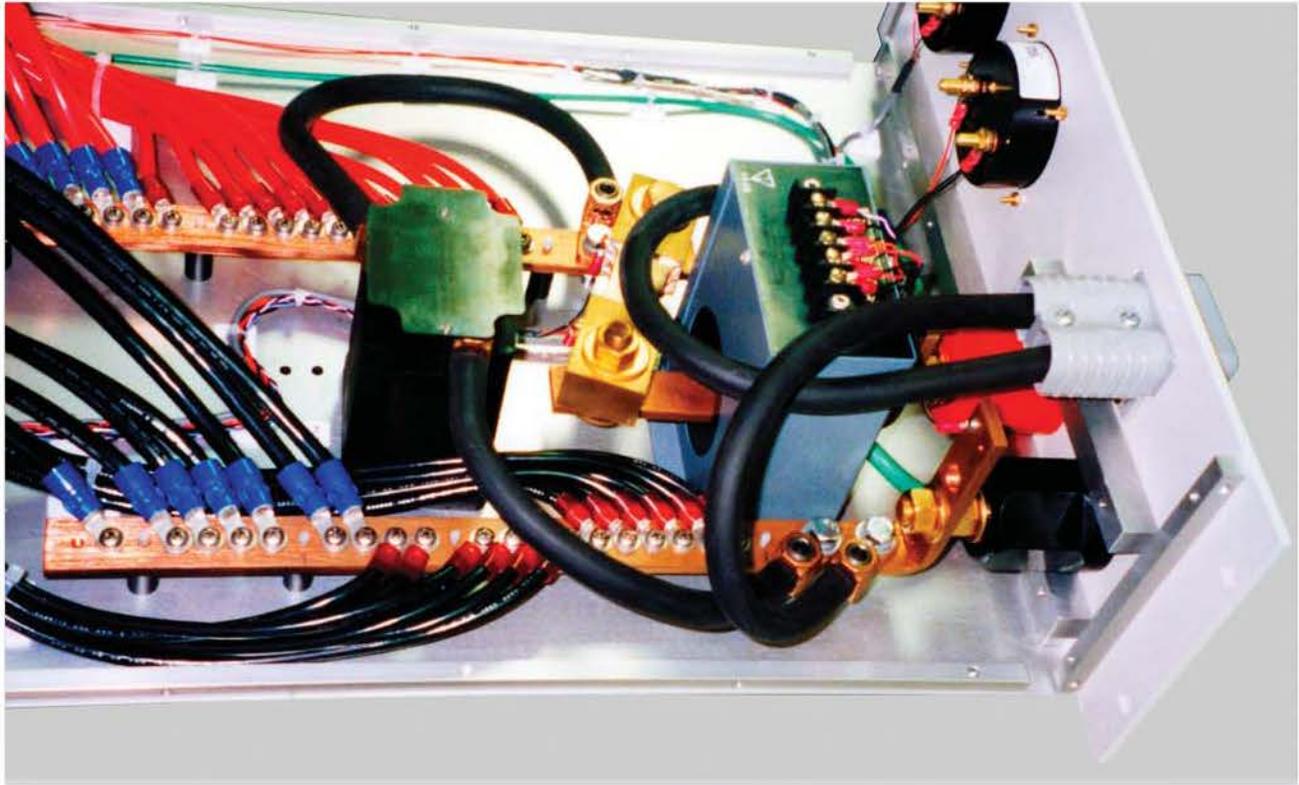
Features: C Message Weighted Filter

Box Builds and Sub-Assemblies

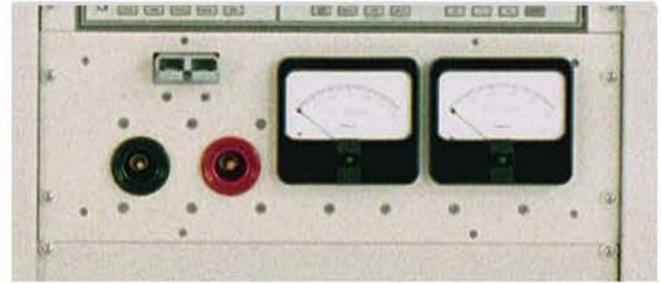
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High Power Load Interface Unit for Power Supply Testing

Box Builds and Sub-Assemblies



Side view inside Load Interface Unit



*Front view of Load Interface Unit
installed in an ATE*

Application: Telecom 50V, 200A, 10kW AC/DC Power Supplies
High Volume Production Test

Features: High Current Bus Bars to parallel all ATE loads together
Bus Bar connected to both Supercon and Anderson connectors
High Current Shorting Relay
DC Current Shunt and Hall Effect Current Transformer
DC Voltage and Current Meters

Manual DC Resistive Load 500V, 20A, 10kW



Front view of Resistive Load in Rack



Angle view of Resistive Load in Rack

Box Builds and Sub-Assemblies



Close-Up of Load Value Switches
DC Voltage and Current meters
and Load Input Connectors

Application: Engineering Test Bench

Features:

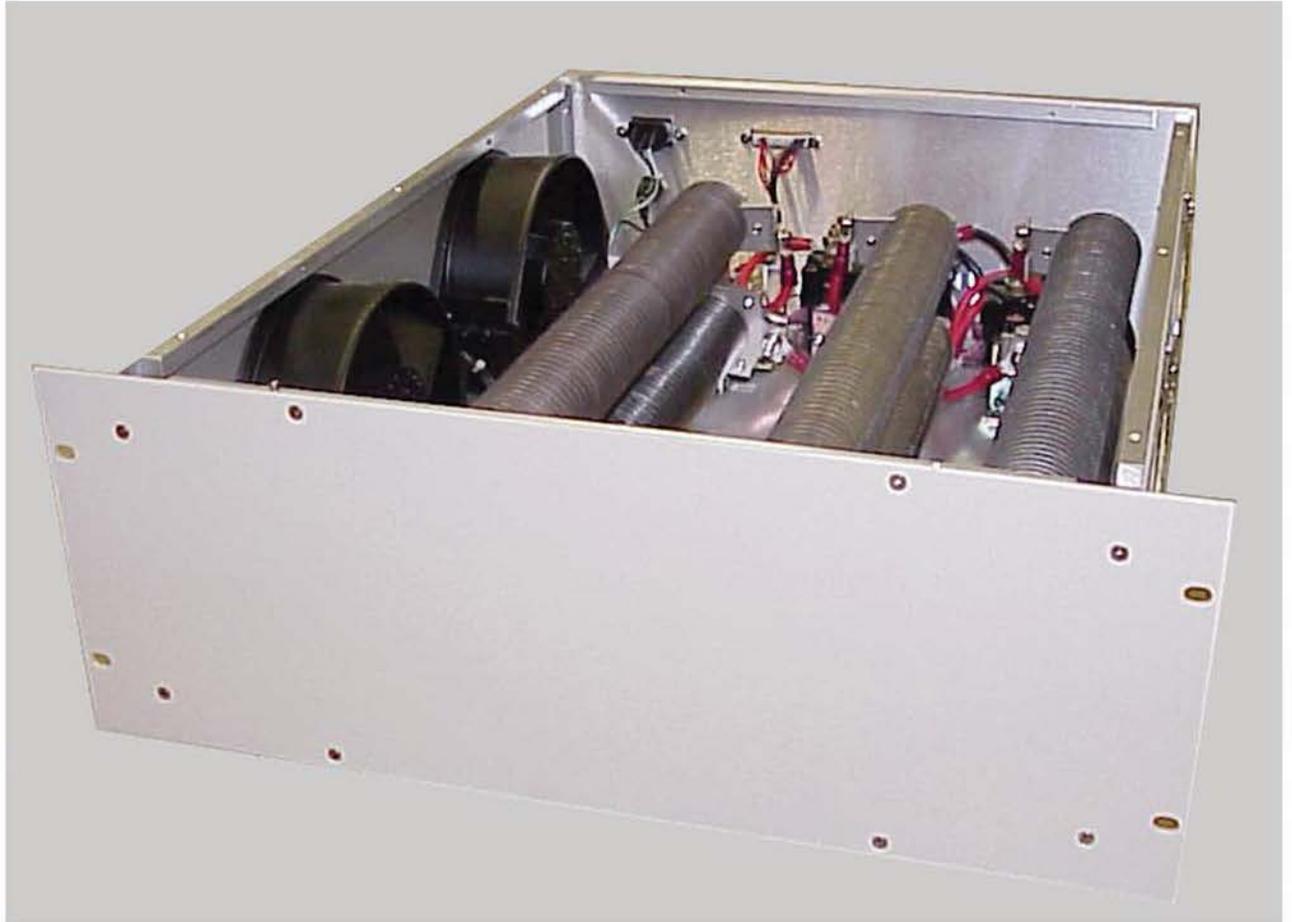
- 500V, 20A 10kW DC Load
- Resistor Ladder 60 to 3k Ohms
- Supercon Input Connectors
- Stand-Alone Cabinet

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ATE DC Resistive Loads

50V, 200A, 10kW

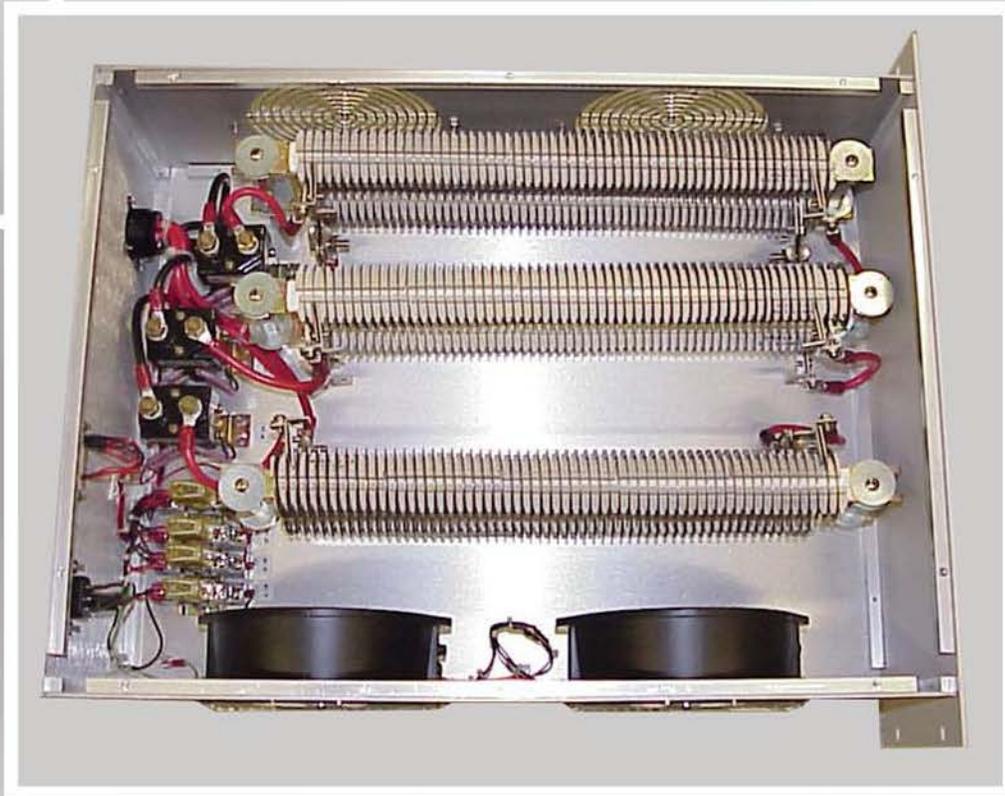
Box Builds and Sub-Assemblies



Front view of ATE Resistive Load Unit #1

Application: Telecom 10kW AC/DC Power Supplies
High volume production test

Features: 50V, 200A, 10kW DC Resistive Load
4 Load Units of 2.5kW each
Uses high power 1000W Coil Resistors
Fans operate only when a load is on to reduce audible noise
Remote control of Load On/Off
Programmable Resistive Ladder



Top view of Resistive Load Unit



Rear view of Resistive Load Unit



Close-Up of Control Relays



Front view of Resistive Load Unit



Side view of Resistive Load Unit

Manual Resistive Loads for Military Capacitor Testing

Box Builds and Sub-Assemblies



Front view of Load Control Unit #1



Front view of Load Unit #2



Front view of Load Unit #3

Application: Capacitor Test Engineering Bench & ATE Resistive Loads

Features:

- 3 Units Total: 1 Control Unit, 2 Additional Parallel Units
- Manual Rhesostat Resistive Knob for Fine tuning
- Switches for manual Resistive Ladder Control
- Pop-Out Fuse for every Load
- Manual control or Remote Controlled Load On/Off for ATE





Unit #2 with top open



Front view Unit #2



Rear view inside Unit #2



Close-Up Unit #2 Fuses



Unit #3 with top open



Front view Unit #3



Rear view inside Unit #3



Close-Up
Unit #3 Fuses



Manual Resistive Loads for Military Capacitor Testing Continued...

Box Builds and Sub-Assemblies



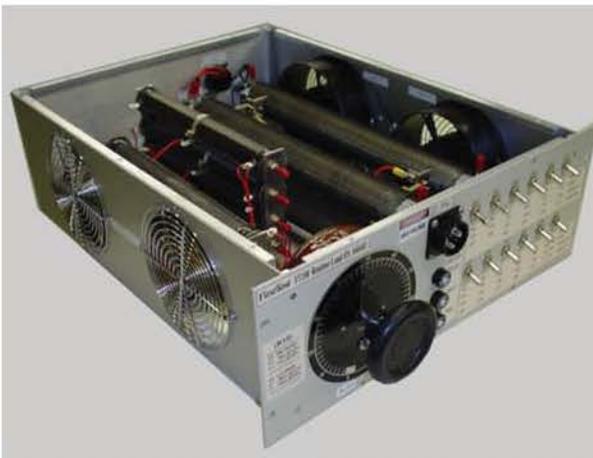
Front view of Load Control Unit #1



Close-Up Rhesostat and Fuses



Close-Up Control Switches



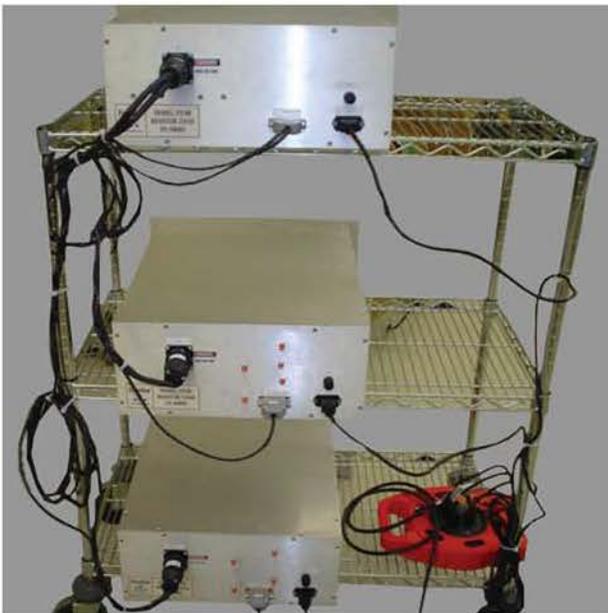
Angle Front View Unit #1



Close-Up Rear View inside Unit #1



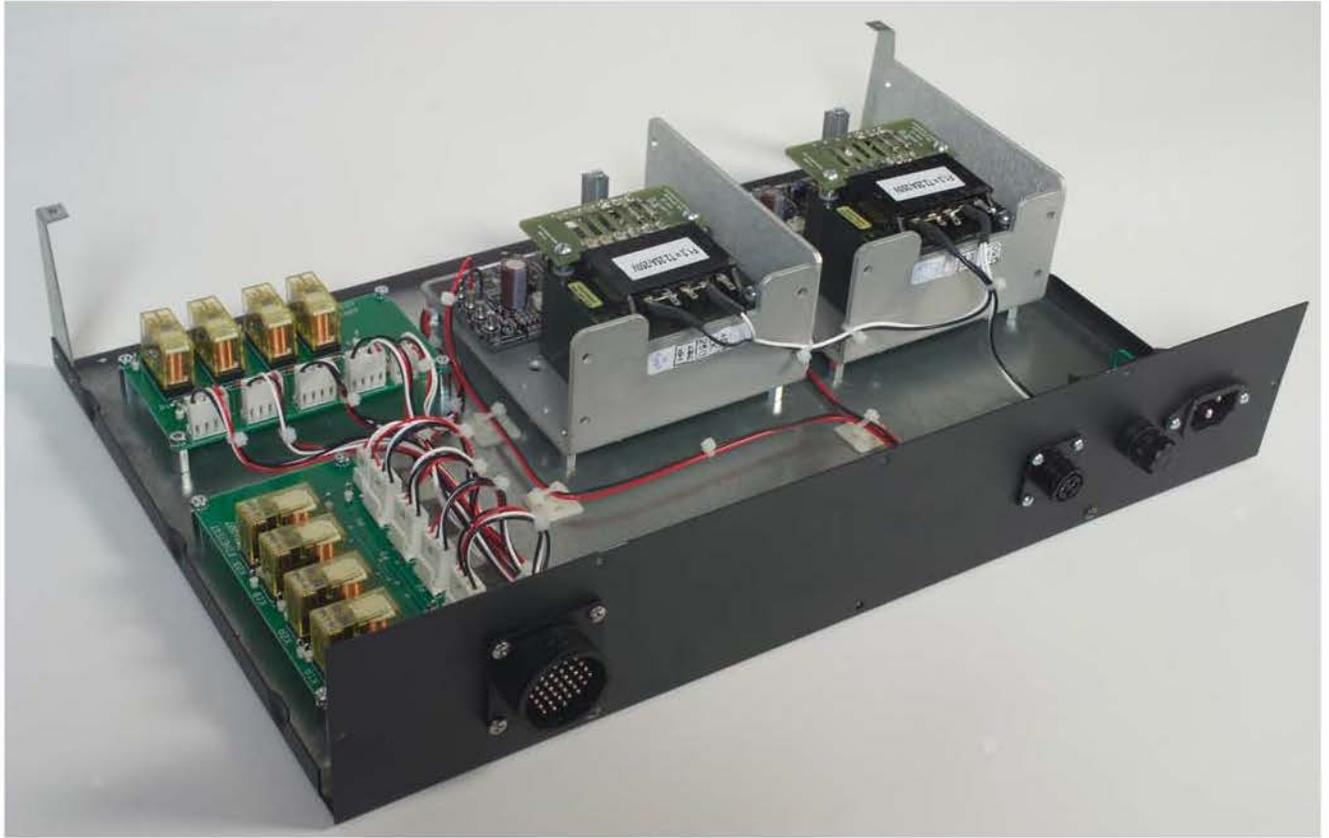
Front view of
3 Load Units on a Cart



Rear view of 3 Load Units on a Cart

DC Mux Unit for Functional ATE

Box Builds and Sub-Assemblies



Rear Angle view of DC Mux Unit with front and cover removed



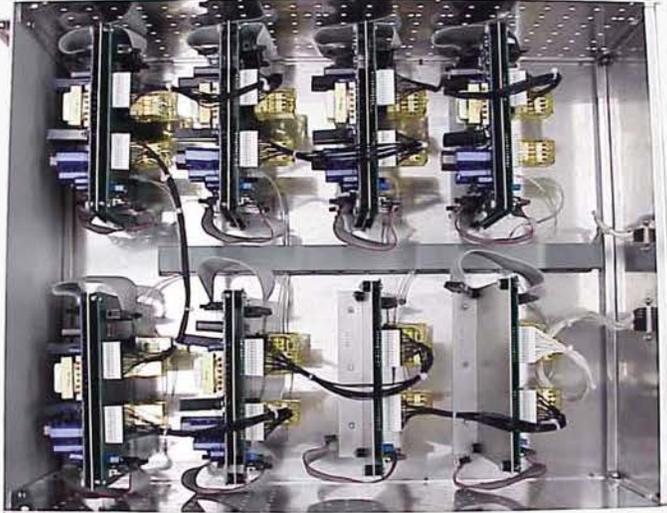
Front view of DC Mux Unit with cover removed

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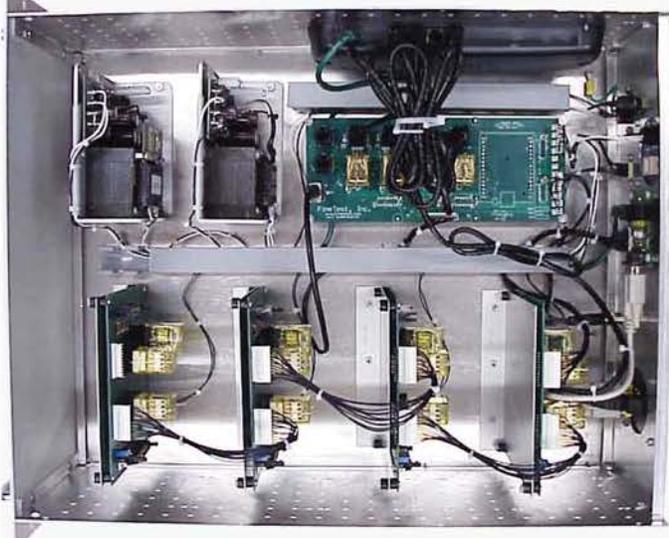
Application: Functional ATE

Features: Muxes and Reverses multiple DC Voltages

Communications Board Mux for Inverter Functional ATE

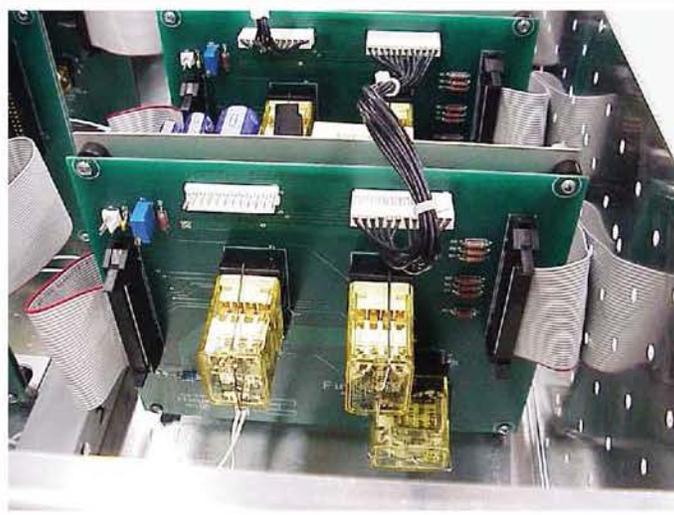


Top View Slave Mux Unit



Top View Master Mux Unit

Box Builds and Sub-Assemblies



Close-Up Communications Switching Board

Application: Inverter Testing

Features: Muxes different Rev Level
Communication Boards
to the UUT for testing with
all product configurations

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FineTest Building at 1 Industry Drive



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