



FineTest

www.finetest.com

Switching and I/O Cards



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

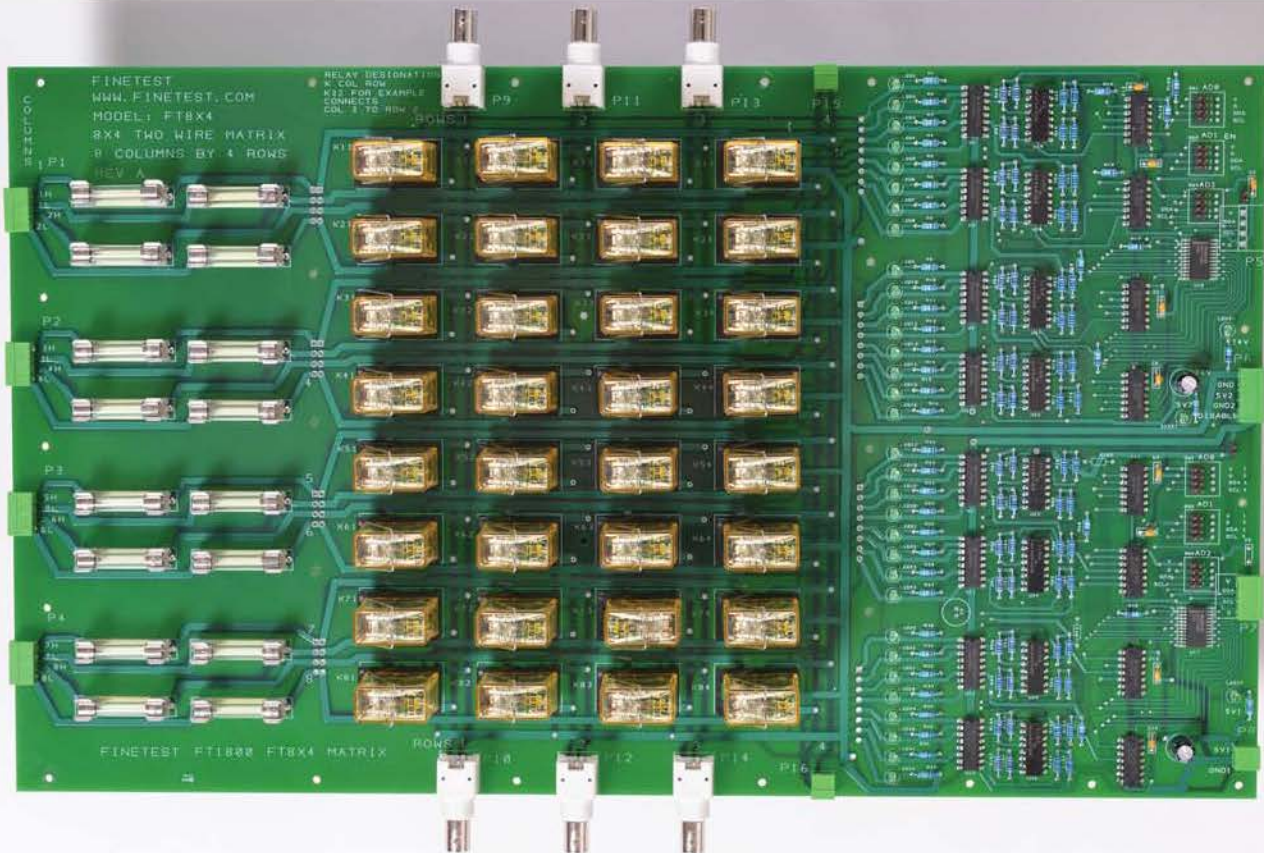
Custom Cabinets and Accessories



FineTest 1 Industry Drive, Palm Coast, FL 32137 Tel: (386) 569-6189 Fax: (386) 446-0463 email: sales@finetest.com

8x4 2-Wire Matrix Card

Switching and I/O Cards



8 x 4 Matrix Card

Features:

The 8 two-wire Input Columns on the left may be connected to any of 4 Output Rows (3 BNCs and 1 Header Connector) at top and bottom of the board.. Typical application connects the 3 BNCs to an Oscilloscope, and the Header to a DMM.

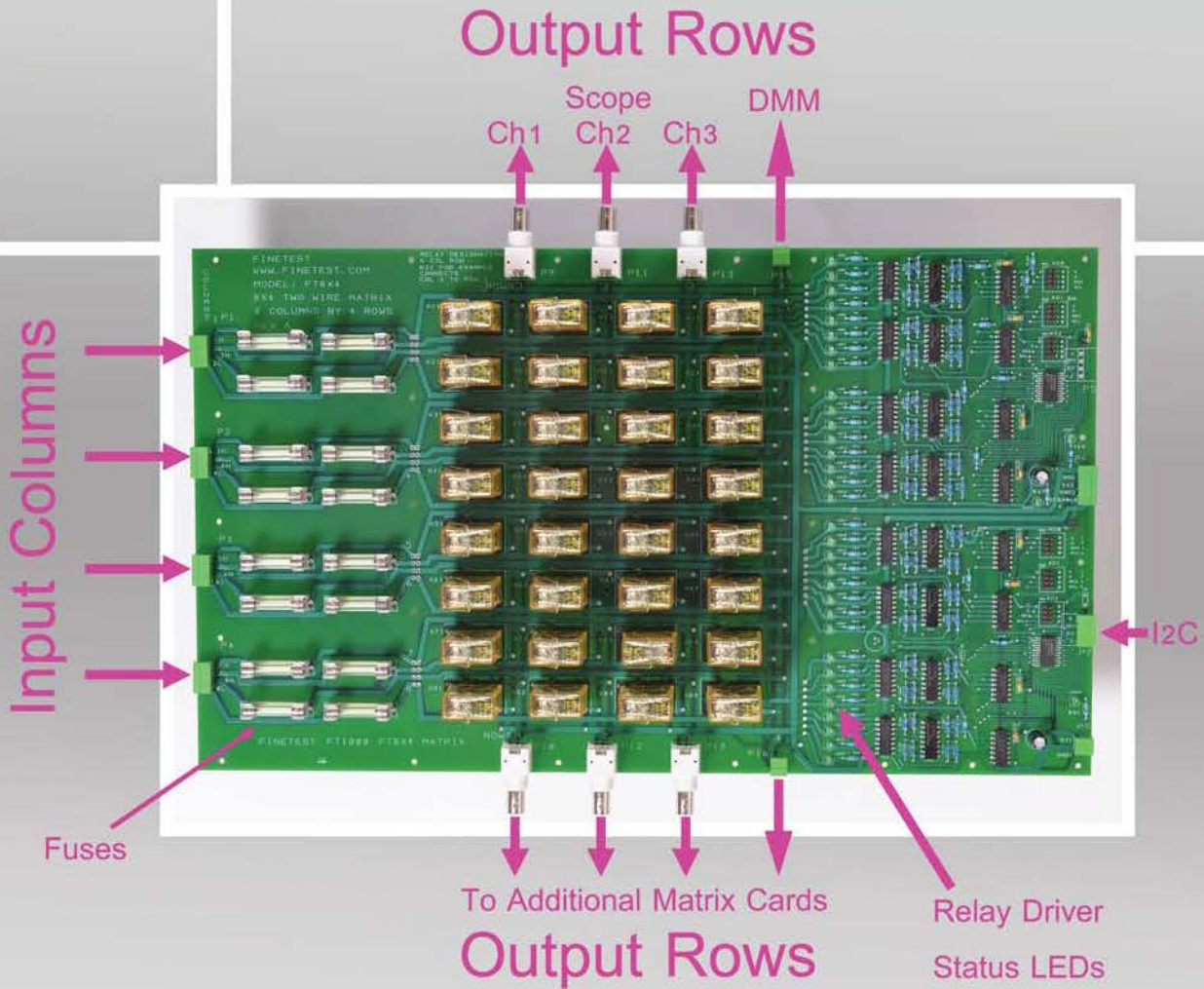
All Inputs are fused on the high and low lines.

All relays have built-in protective diode and status LED.

All relay drivers have status LED for ease of checkout.

Communicate directly to the board with I2C, or with USB-I2C or RS232-I2C adapter.





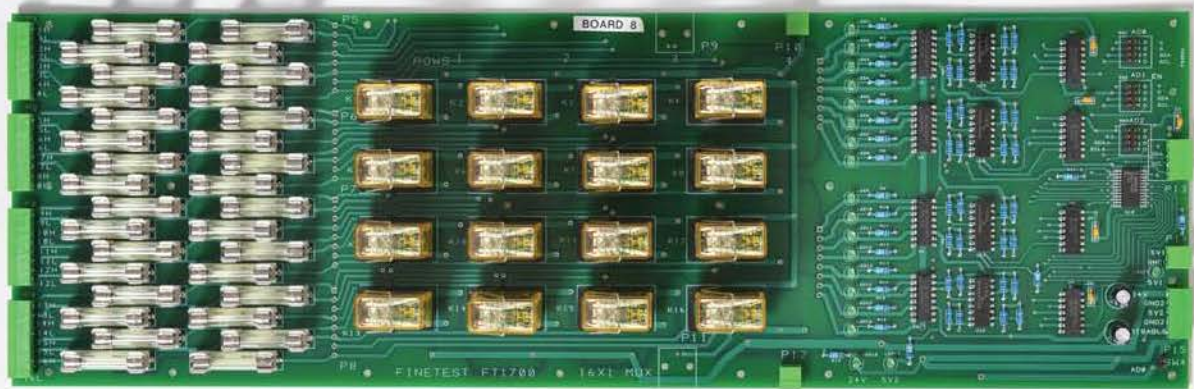
3 Matrix cards configured as a 24x4

The outputs can be connected in parallel with additional matrix cards to expand to larger matrices.

For Example, 3 matrix cards in parallel will form a 24X4 matrix as shown in the photo to the left.

16x1 2-Wire 5A Multiplexer Card

Switching and I/O Cards



16 x 1 Mux Card

Features:

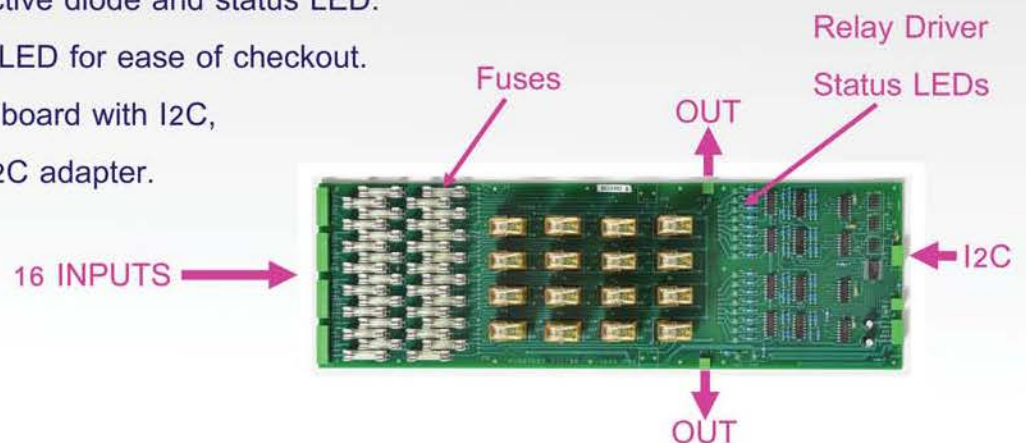
Any one of the 16 two-wire Input Columns on the left may be connected to the Output on the Header Connectors at top and bottom of the board.

All Inputs are fused on the high and low lines.

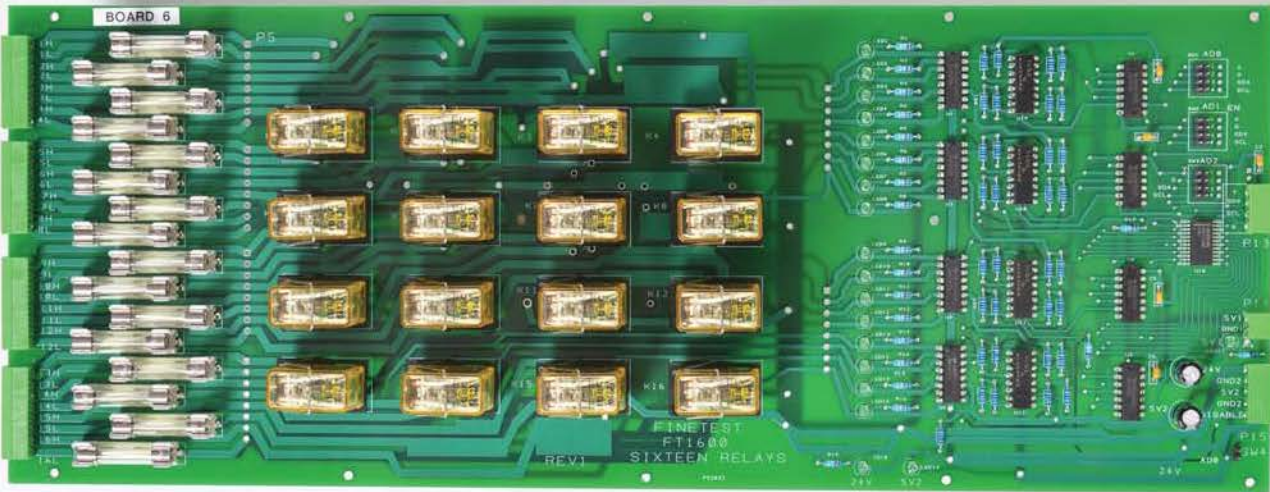
All relays have built-in protective diode and status LED.

All relay drivers have status LED for ease of checkout.

Communicate directly to the board with I2C, or with USB-I2C or RS232-I2C adapter.



16 General Purpose Form-A 10A Relay Card



Switching and I/O Cards

16 General Purpose Relay Card

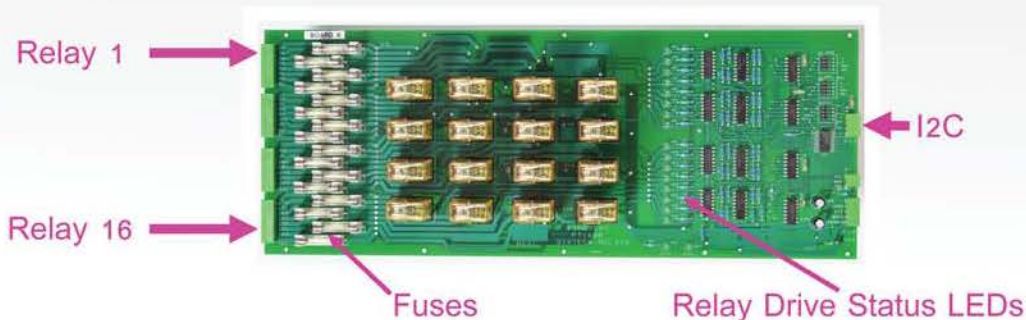
Features:

16 Form A Relays Rated for 10A each.

All Inputs are fused and have built-in protective diode and status LED.

All relay drivers have status LED for ease of checkout.

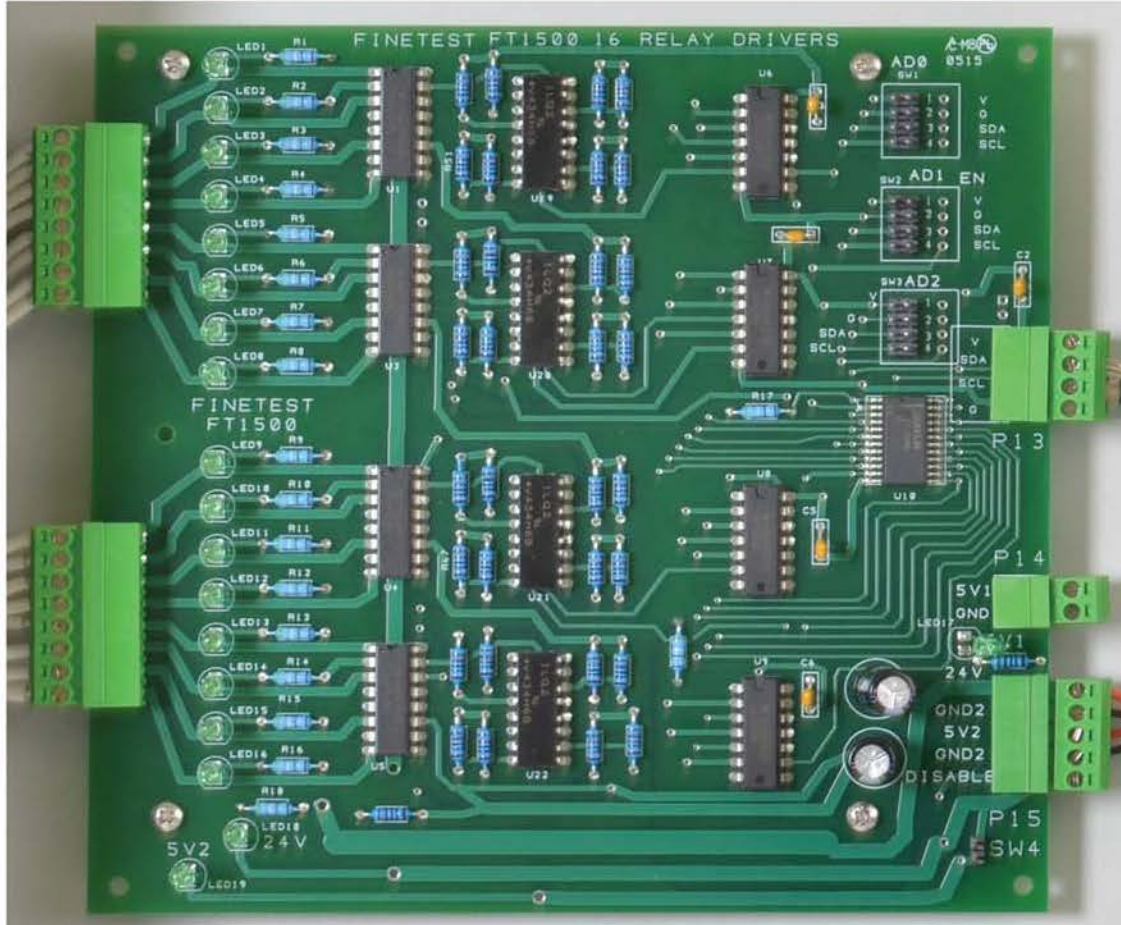
Communicate directly to the board with I2C, or with USB-I2C or RS232-I2C adapter.



 **FineTest**
www.finetest.com

Optically Isolated 16 Channel Relay Driver Cards

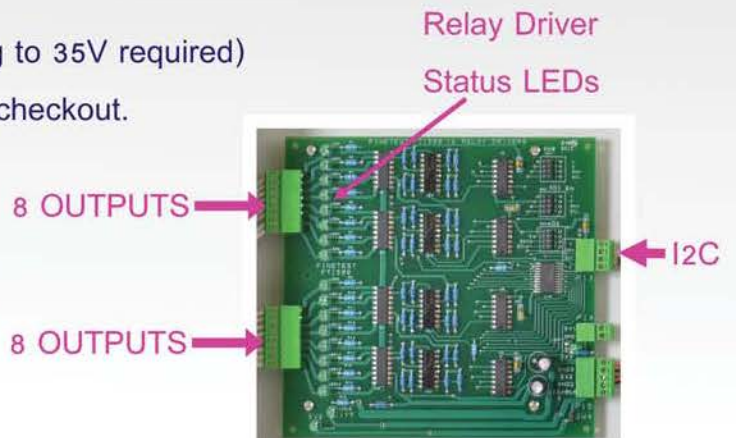
Switching and I/O Cards



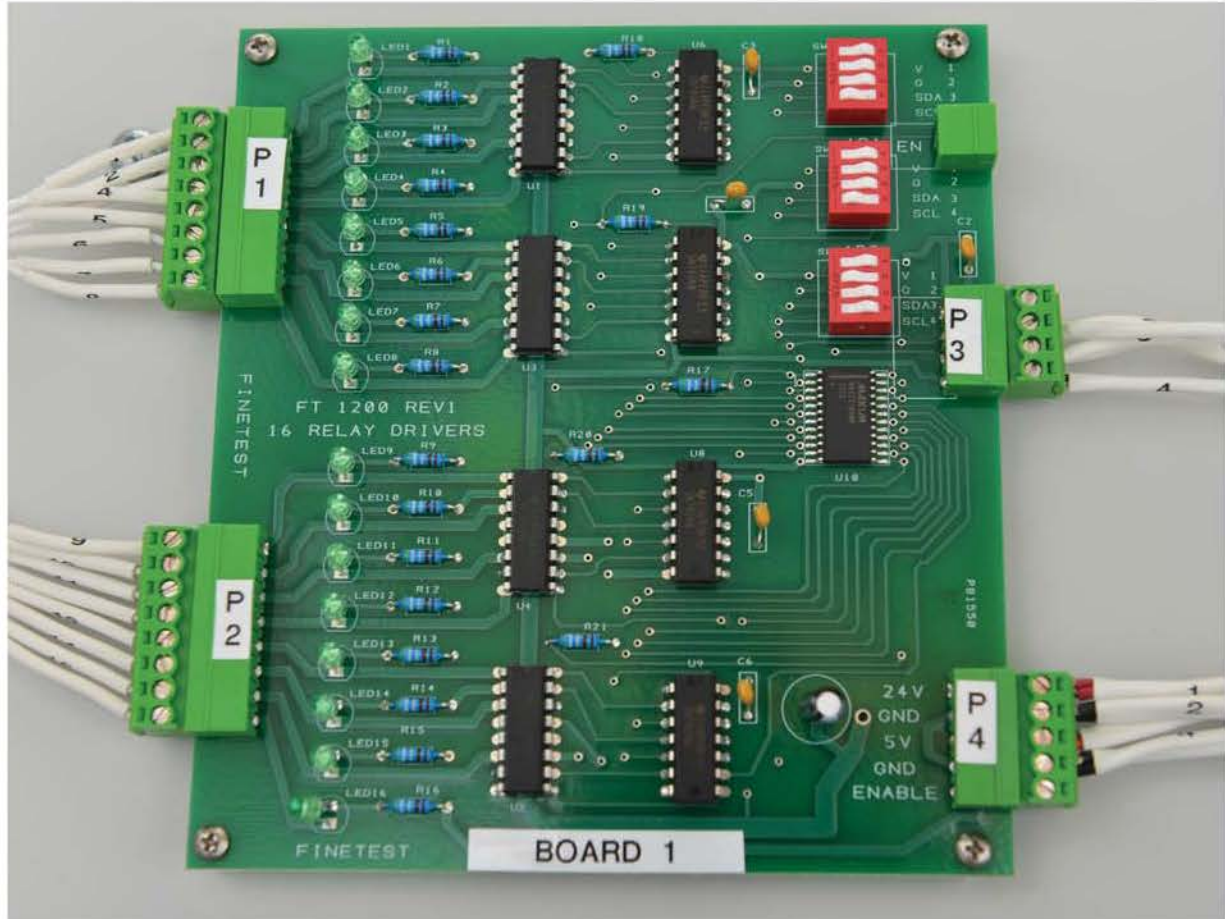
Features:

16 Channel Relay Driver Card

- 16 Optically Isolated Relay Drivers.
- Open Collector with 600mA output current.
- 800mA Output Clamp Diodes.
- 70V Breakdown (for inductive loads, clamping to 35V required)
- All relay drivers have status LED for ease of checkout.
- Communicate directly to the board with I2C, or with USB-I2C or RS232-I2C adapter.



Non-Isolated 16 Channel Relay Driver Cards



Switching and I/O Cards

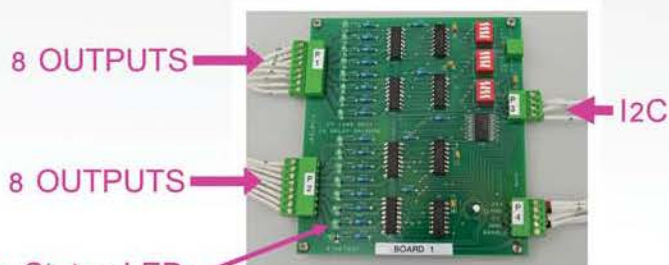
16 Channel Relay Driver Card

Features:

16 Non-Isolated Relay Drivers, Open Collector with 600mA output current.

800mA Output Clamp Diodes, 70V Breakdown (for inductive loads, clamping to 35V required)

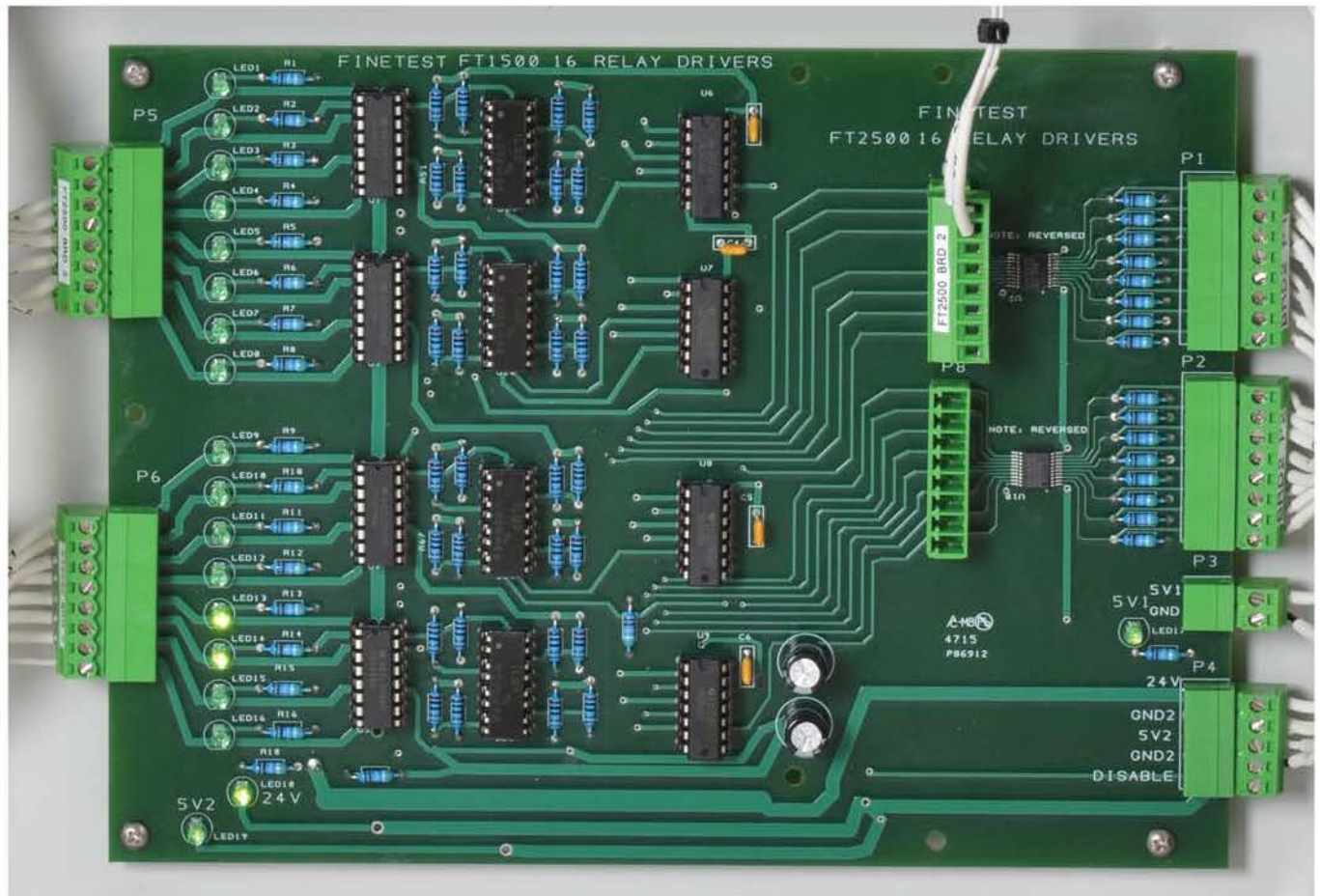
All relay drivers have status LED for ease of checkout, Communicate directly to the board with I2C, or with USB-I2C or RS232-I2C adapter.



 **FineTest**
www.finetest.com

Optically Isolated 16 Channel Relay Driver Cards with De-Bounce Circuit for Scope Triggering

Switching and I/O Cards



Features:

16 Channel Relay Driver Card

- 16 Optically Isolated Relay Drivers with De-Bounce Circuit for clean Scope Triggering.
- Open Collector with 600mA output current.
- 800mA Output Clamp Diodes.
- 70V Breakdown (for inductive loads, clamping to 35V required)
- All relay drivers have status LED for ease of checkout.
- Control line inputs from external relays or digital I/O

Clean De-Bounced Signals to Scope

8 OUTPUTS

8 INPUTS

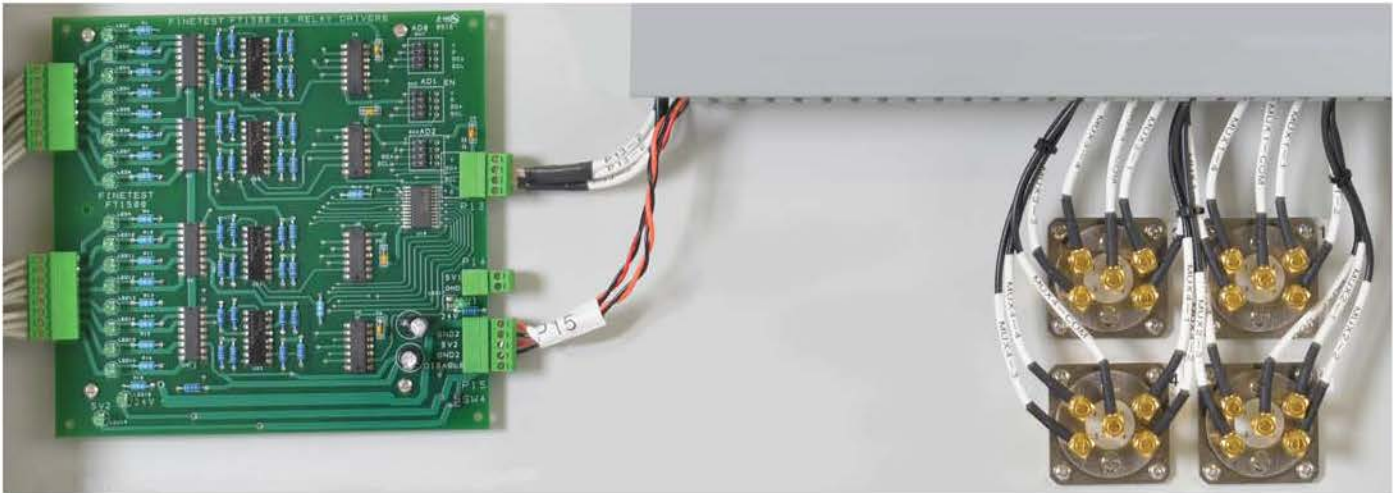
8 OUTPUTS

8 INPUTS

Relay Driver Status LEDs



Quad 4x1 High Frequency Multiplexer



Quad 4x1 HF Mux

Switching and I/O Cards

Features:

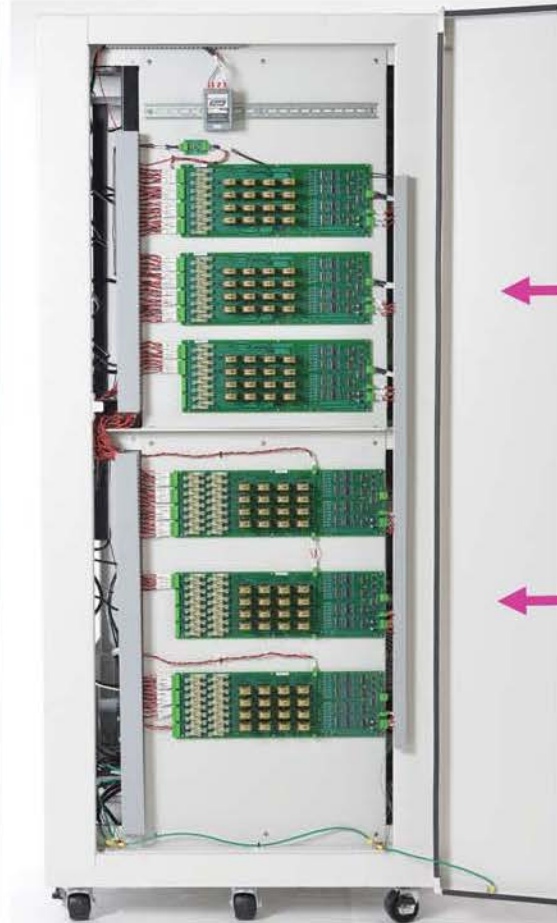
Four 4x1 HF Switches are controlled by a FineTest Relay Driver Card.

All relay drivers have status LED for ease of checkout.

Communicate directly to the board with I2C, or with USB-I2C or RS232-I2C adapter.

Examples of FineTest ATEs using FineTest Switching and I/O Cards

Switching and I/O Cards

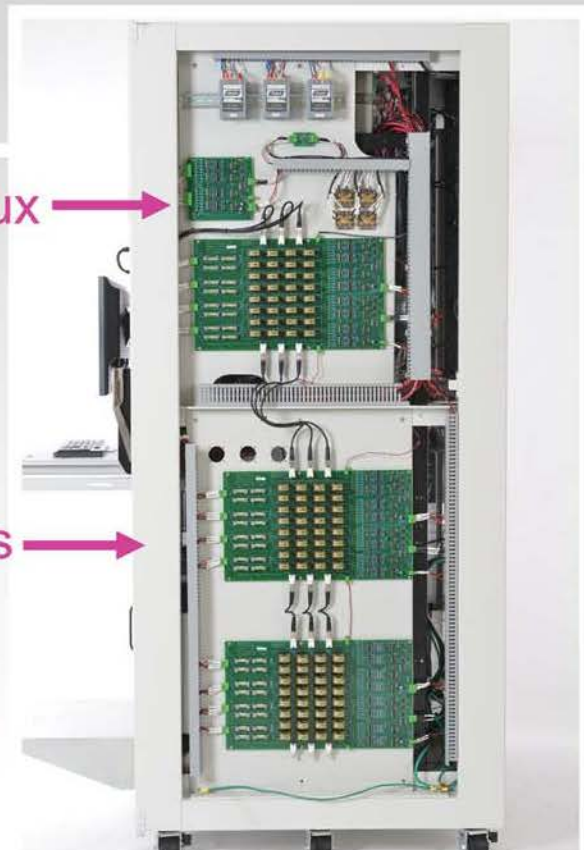


← 3 16 GP Relay Cards

← 3 16x1 Mux Cards

Quad 4x1 HF Mux →

3 8x4 Matrix Cards →

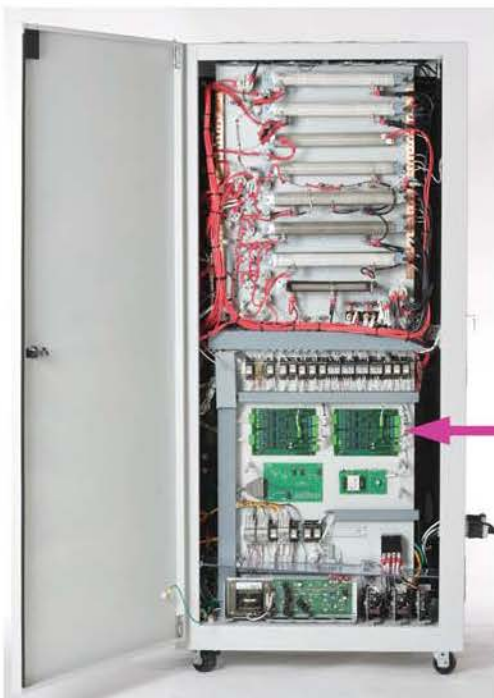


Examples of FineTest ATEs using FineTest Switching and I/O Cards



8 16 Channel
Relay Driver Cards
controlling 96 Relays

Switching and I/O Cards



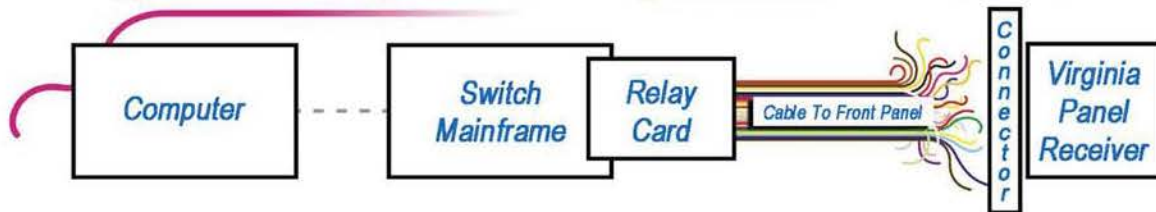
2 16 Channel Relay Driver Cards
with De-Bounce Circuit
controlling 32 Relays

 **FineTest**
www.finetest.com

FineTest Switching & I/O Cards with Built-In Virginia Panel Connectors

Switching and I/O Cards

Typical ATE Relay Card Assembly without FineTest Cards



FineTest "ALL IN ONE" Solution! **NO MAINFRAME! NO CABLING! NO ADDITIONAL CONNECTORS!**



FEATURES:

- The units have USB and Ethernet interfaces.
- Provided are Software Drivers for NI LabVIEW, NI LabWindows/CVI, Microsoft C# and Agilent VEE.
- Direct Programming with I²C, USB and Ethernet.
- The units have optional fuse input protection.
- The rows of the matrices and multiplexes are available at the Virginia Panel Connectors and at the rear of the cards for wiring to instruments in the systems or in the fixture.



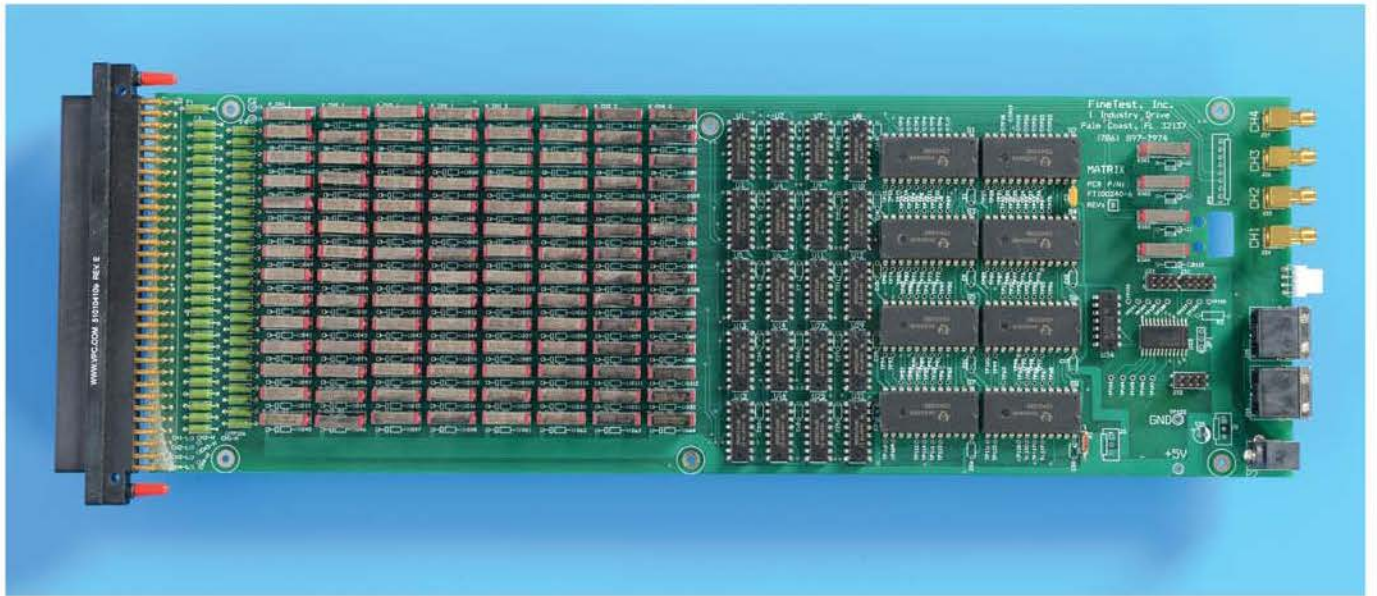
FineTest VP Cards with covers removed



Front view of a FineTest ATE with the Virginia Panel dropped down showing multiple FineTest Switching Cards installed

28x4 2-Wire Matrix Card

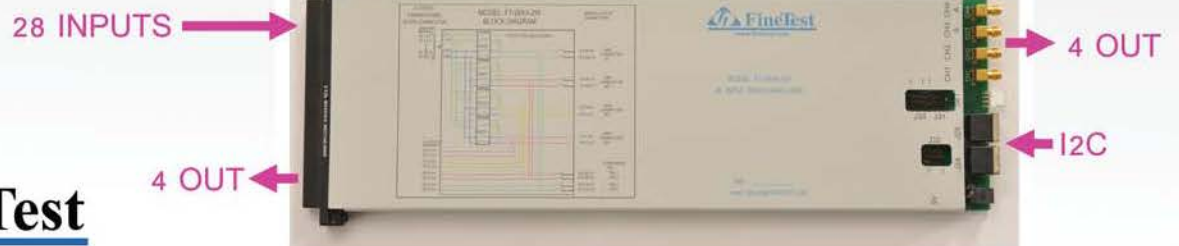
Switching and I/O Cards



28 x 4 Matrix Card with Cover Removed

Features:

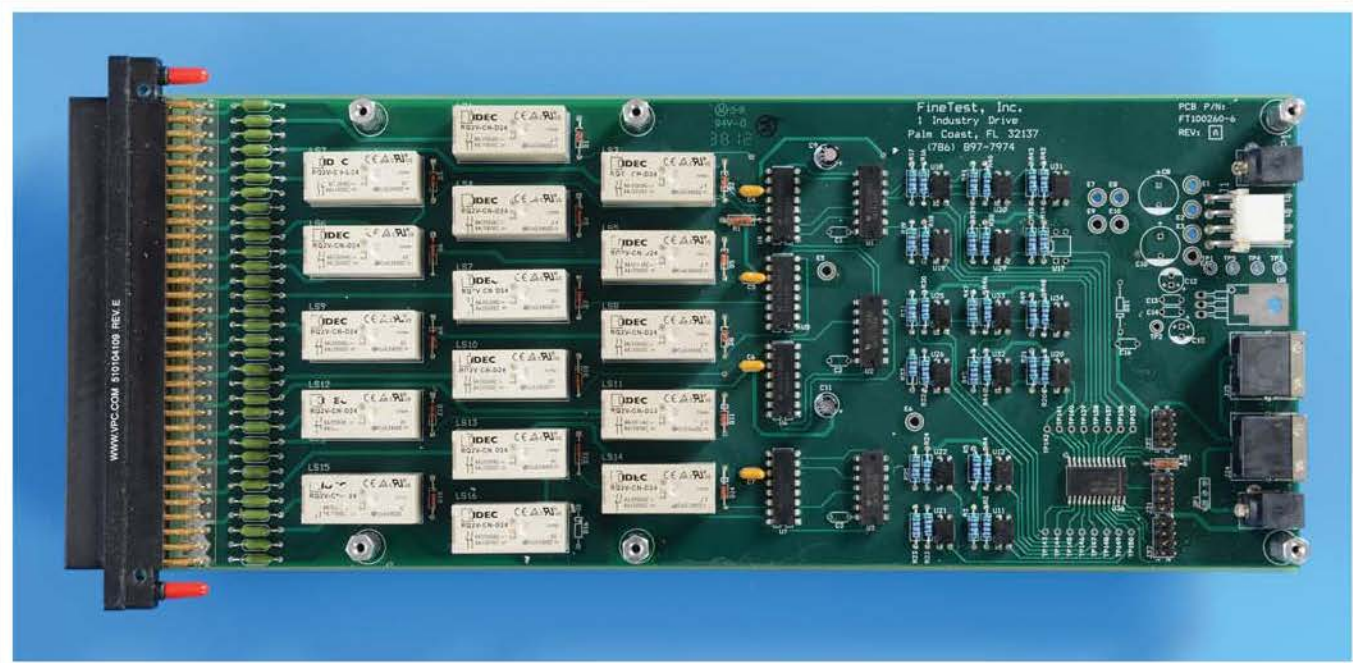
The 28 two-wire Input Columns on the left may be connected to any of 4 Output Rows at the VP Connector or the 4 BNCs at the rear of the board. Typical application connects 3 BNCs to an Oscilloscope, and one to a DMM. All Inputs are fused on the high and low lines. Communicate directly to the board with I2C, or with USB-I2C or RS232-I2C adapter.



28 x 4 Matrix Card with Cover



16 General Purpose Form-A 5A Relay Card



Switching and I/O Cards

16 General Purpose Relay Card

Features:

16 Form A Relays Rated for 5A each.

All Inputs are fused.

Communicate directly to the board with I2C, or with USB-I2C or RS232-I2C adapter.



 **FineTest**
www.finetest.com

Dual 16x1 Multiplexer Card

Switching and I/O Cards



Dual 16 x 1 Mux Card with cover removed

Features:

Communicate directly to the board with I2C, or with USB-I2C or RS232-I2C adapter.

The Mux Outputs are available on the same VP connector, or on the rear connector.

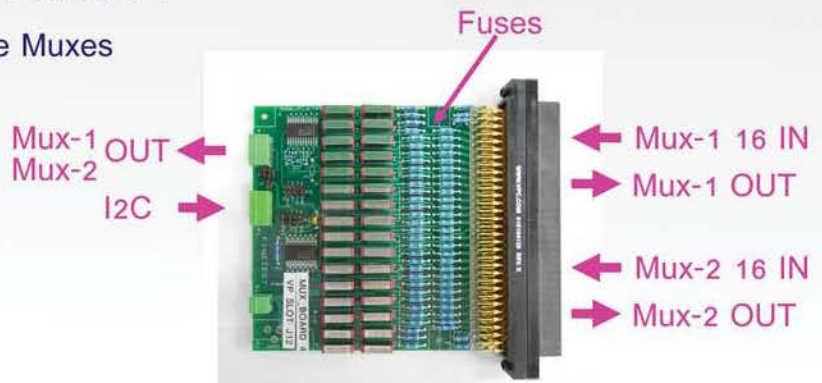
All Inputs are fused on the high and low lines.

The two 16x1 Single Wire Muxes can be used as

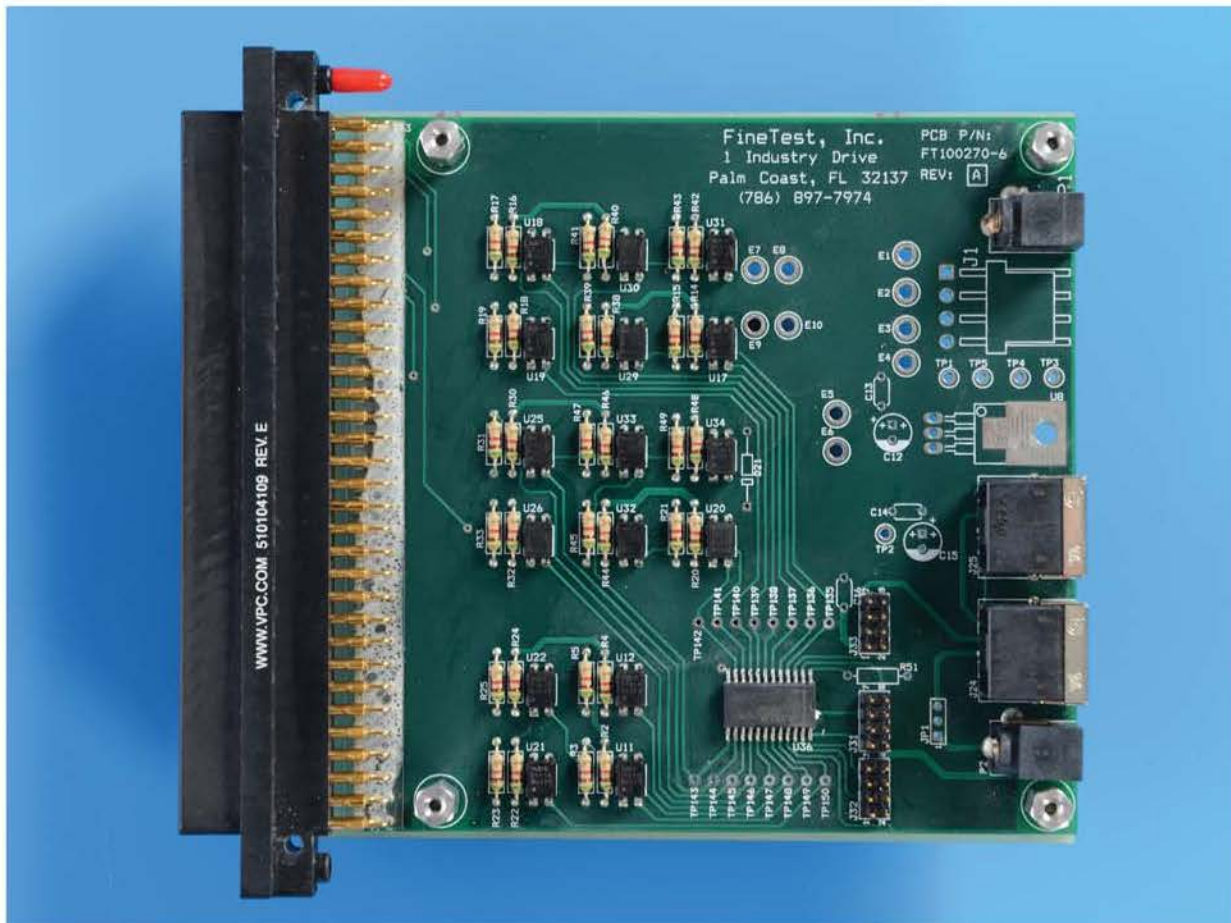
Dual Independent 16x1 Single Wire Muxes

Single 32x1 2-Wire Mux

Single 16x1 Four Wire Mux



Optically Isolated 16 Bit Digital IO Cards



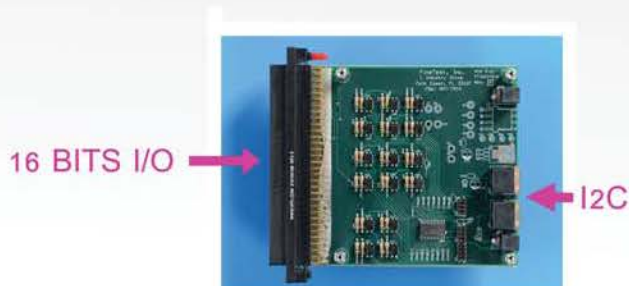
Switching and I/O Cards

16 Bit Digital I/O Card

Features:

16 Bit Optically Isolated Digital I/O, Open Collector with 600mA output current.

Communicate directly to the board with I2C, or with USB-I2C or RS232-I2C adapter.



 **FineTest**
www.finetest.com

Dual 16x1 Multiplexer Card

Switching and I/O Cards



Dual 16 x 1 Mux Card with cover

Features:

Communicate directly to the board with USB or Ethernet.

The Mux Outputs are available on the same VP connector, or on the rear connector.

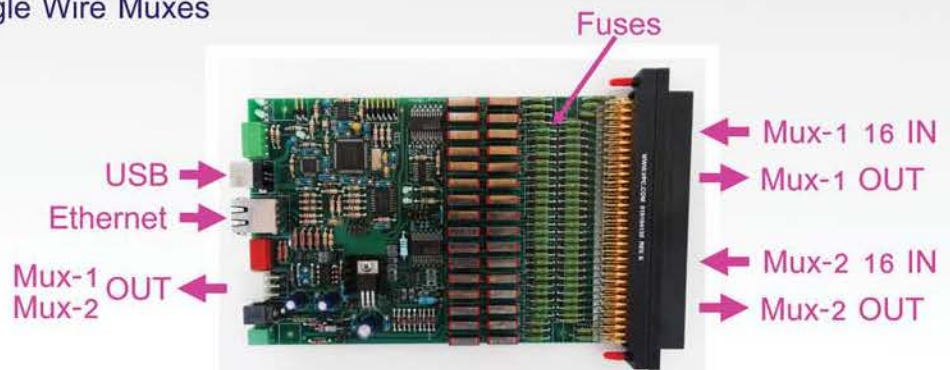
All Inputs are fused on the high and low lines.

The two 16x1 Single Wire Muxes can be used as

Dual Independent 16x1 Single Wire Muxes

Single 32x1 2-Wire Mux

Single 16x1 Four Wire Mux



16x9 Single Wire Low EMF Matrix Card

Switching and I/O Cards



16x9 Single Wire Matrix Card with cover removed

Features: 16 x 9 Low EMF Matrix Card. Less than 1uV emf relays used

All Inputs have optional fuses.

Communicate directly to the board with I2C, or with USB-I2C or RS232-I2C adapter.



16x9 Single Wire Matrix Card with cover



48x9 Low EMF Precision Matrix

Switching and I/O Cards



Cover removed showing 3 16x9 Cards

Features:

Precision 48X9 low EMF Matrix

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



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



Switching and I/O Cards

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



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

 **FineTest**
www.finetest.com

32x4 5A Power Matrix Unit

Switching and I/O Cards



Top Angle view of Power Matrix Unit

Features:

32x4 Matrix 5A@30Vdc/240Vac

USB and Ethernet Interface



Side view of Power Matrix Unit



Communications Adapter USB/Ethernet to 3 I2C Ports

Switching and I/O Cards



USB or Ethernet to 3 I2C Ports Communications Adapter

Features:

Communications Adapter:

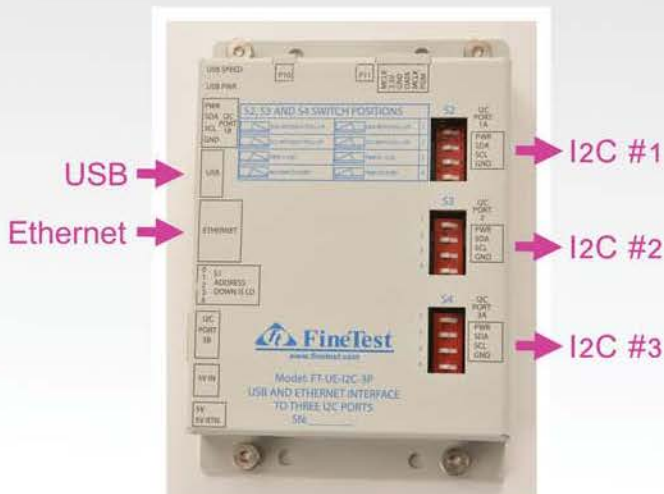
USB or Ethernet to 3 Independent I2C Ports

Each Port has user ueselectable switches to set:

Pull-Up Resistors On/Off

Power to Power Pin On/Off

3.3V or 5V Power



 **FineTest**
www.finetest.com



FineTest Production Floor



FineTest Building at 1 Industry Drive



FineTest

www.finetest.com



FineTest 1 Industry Drive, Palm Coast, FL 32137 Tel: (386) 446-0463 Fax: (386) 446-0465 email: sales@finetest.com