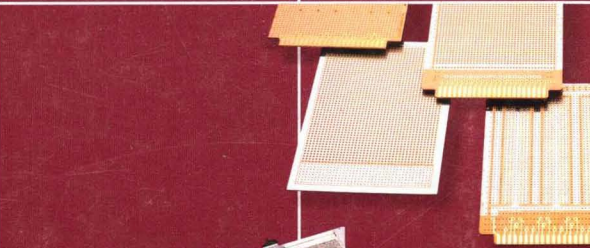
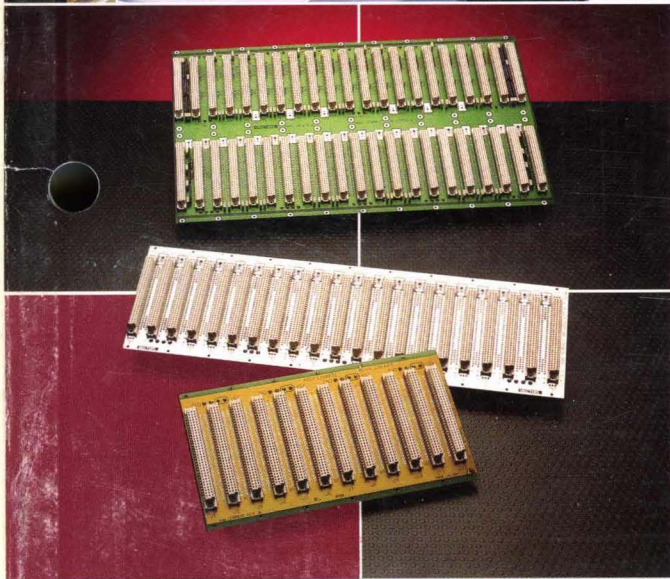
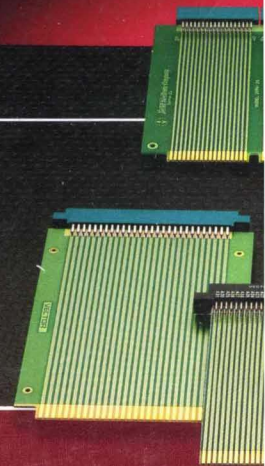
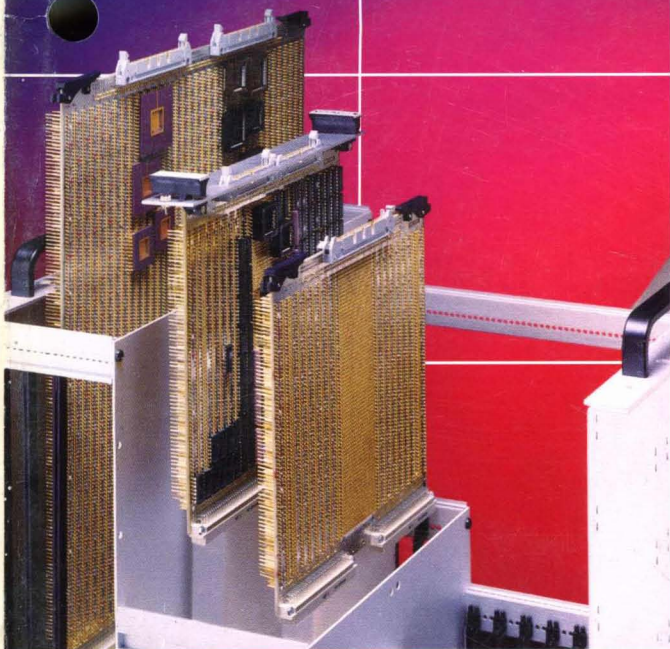


# VECTOR

Vector Prototype & System Development Products



**Prototype &  
System  
Development  
Products  
That Accelerate  
Time-to-Market  
For Your  
Products**

Catalog No. 110

**VECTOR**  
ELECTRONIC COMPANY

**VECTOR**

Prototyping Boards • Racks and Enclosures • Tools and Accessories

# "We're Committed To Delivering Technology's Tools For Tomorrow's Products."

*Dale Scoville, President*

By providing tools for R&D, Vector Electronic Company has played an exciting role in some of technology's most important accomplishments. Vector products have been to the moon and flown on the space shuttle. They've even been to Disneyland.

In the 90's the technological pace will accelerate even more. We all need to be innovative, quick on our feet. We'll handle faster circuits, denser packages, and we'll need to maintain greater precision and signal integrity than ever.

Vector is ready for the 90's. We've updated our design and manufacturing operations using innovative CAD, CAM, and CIM techniques. We've expanded our product line with standard and custom products that meet your needs for higher performance applications.

Vector continues to save you time and money, by providing tools that meet your most simple or complex needs. Our goal, since 1947, has been to meet the prototyping needs of the designer and engineer- the people who create the future.

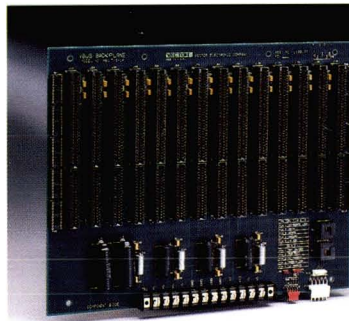
This catalog is another example of our dedication. It features standard Vectorbord® and Vectorbord Plus™ products, as well as innovative new tools like the AT Industrial Computer Development System and the Multilayer AT Extender. You'll find your products easily, and Vector products are always as near as your local electronics distributor.

**VECTOR**  
ELECTRONIC COMPANY

12460 Gladstone Ave., Sylmar, CA 91342  
Phone (818) 365-9661 Fax (818) 365-5718  
Inside CA (800) 426-4652 Outside CA (800) 423-5659

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*An excellent platform for configuring industrial computers, Vector's multilayer AT Passive Backplane provides capacity and ensures compatibility for the most complex systems. (see page 78)*

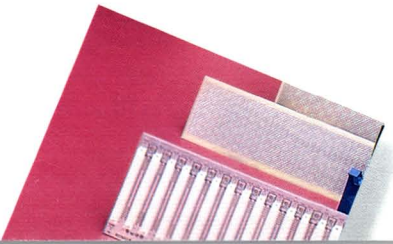
*Vector prototyping boards for bus specific architectures, the most complete selection available. In a variety of patterns and sizes for IBM, Apple, DEC, Motorola, and more. (See pages 30-42)*

## **Vectorbord Plus™**

Vectorbord Plus™ prototyping boards have been adapted for discrete wire interconnection techniques to meet requirements for high performance applications. Utilizing multilayer construction, on-board decoupling capacitors, and terminator resistors, Vectorbord Plus products provide for greater circuit speeds, higher package densities, and reliable signal handling. Vectorbord Plus products can be found in the Europackaging and Bus Specific sections of this catalog. Standard Vectorbord Plus products are available from electronics distributors nationwide. For custom configurations, contact factory.

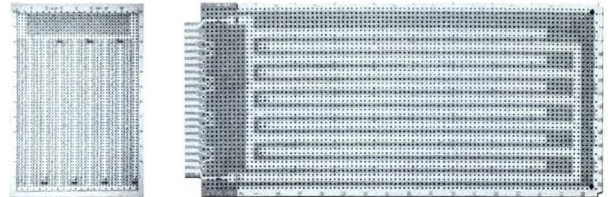
## **Vectorbord®**

The Vectorbord trademark refers to our standard, or catalog, line of prototyping boards. Known for quality, versatility, and availability, all Vectorbord products are designed and manufactured to the strictest standards and are available at electronics distributors nationwide.



**Vectorbord® General Purpose Prototyping Board**

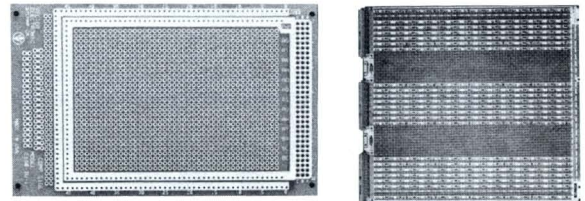
PunchBoards  
Circboards™  
Plugboards™



1

**Vectorbord® Eurocards**

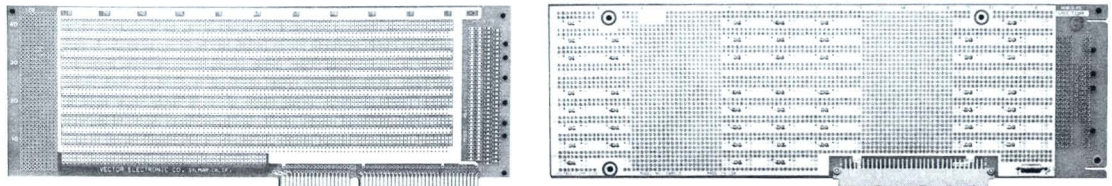
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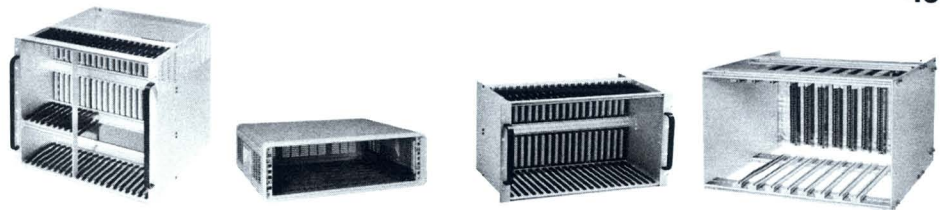
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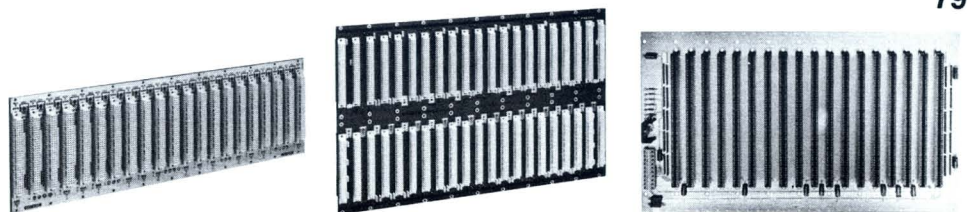
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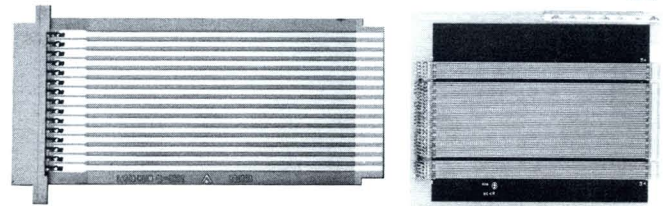
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*Vector Makes Specials*

# Product Selector Guide

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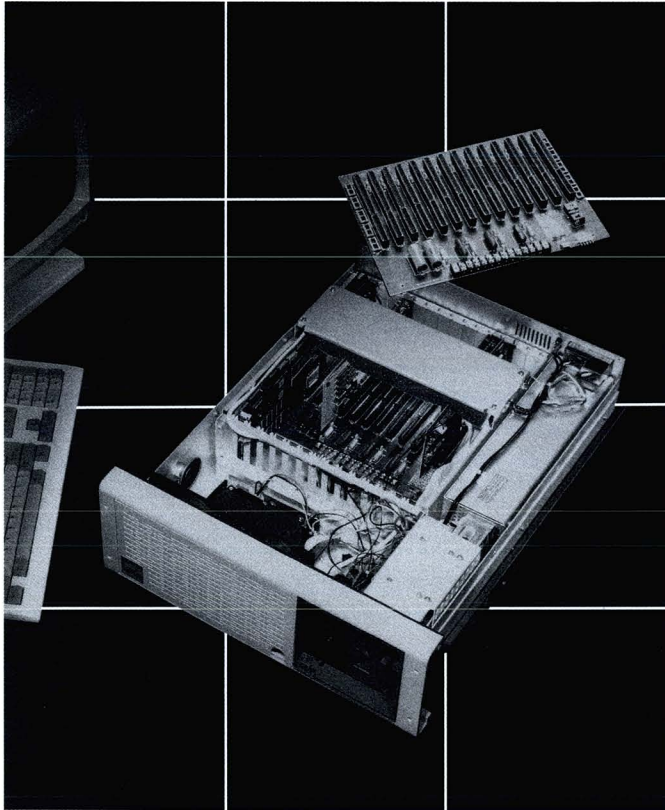
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**A New, Faster Way To Configure Your System. . .**

# AT Industrial Computer



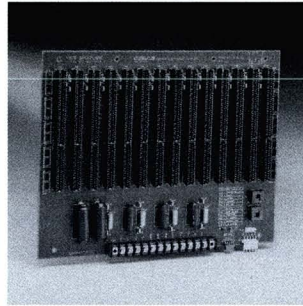
## **Vector's New AT Industrial Computer Development System...Designed And Built To Be Configured Quickly, Then Provide A Long, Reliable System Life**

Rugged and reliable, Vector's AT platform provides the capacity and performance needed to configure even complex systems—for applications such as CAM, CIM, data acquisition, file server, or process control—without spending days or weeks tracing esoteric integration

problems. Built around an enhanced passive backplane, the AT Industrial Computer Development System gives you the freedom to design systems using virtually any available third-party CPUs (including 80386) and add-in cards. It lets you make choices based on the individual requirements of your application, not on the compatibility requirements of your hardware.

And once your system's operational, you're assured a long, reliable system life—even in harsh industrial environments. The enclosure has been

ruggedized and designed to withstand heat and vibration, and all components have been selected for maximum durability.



## **14-Slot Multilayer Passive Backplane**

Provides capacity (8 full size ISA slots, 6 half or three quarter size), as well as ease of configuration and maintenance.

By maintaining accurate "square wave" switching, compatibility problems caused by different cards operating at different speeds are eliminated. This is accomplished utilizing multilayer construction to ensure uniform impedance, and extensive filtering. All incoming power voltages are kept scrupulously clean by inductor-capacitor filter networks, shielding backplane and cards from interference caused by peripheral motors. Also provided are sockets, five at each end, for user-supplied terminator resistors. Termination of signal lines eliminates reflection and ringing in higher performance systems, further ensuring signal integrity.

## **A Unique Configuration Board**

Simplifies the process of interconnecting CPU and chassis circuitry. One in-line and one dual row connector (either is standard on most third-party CPUs) are provided. Standard cables are routed to Configuration Board, then on-board jumpers are used to configure appropriate functions. No special cabling or connectors are required.

## **Industrial Strength Power Supply**

An internal 275W switching power supply is capable of handling demands of the most complex systems, and will operate under full load in environments up to 100°F. It's housed in a separate enclosure for thermal and EMI shielding. For added protection, an over-temp sensor is provided. The sensor signals overheating conditions via user-supplied alarm (light, buzzer, or other), providing ample time for corrective action and/or data backup. In addition, power input can be switched easily between 110 and 220VAC, 50/60Hz, from a rear panel fuse hook-up.

## **Rugged Construction**

For vibration protection, cards of varying heights are secured by foam-backed card retainer bar. The chassis is constructed of .125 and .090 inch aluminum to combine light



# Development System

weight and ruggedness.

For cooling and protection from airborne particles and moisture, two 90 cfm fans provide positive internal pressure. Fans are 12 volt, brushless design to prevent the induction of motor noise into the system.

Front panel indicators and controls include a lighted on-off switch, lighted reset switch, keyboard lock

switch, LED hard drive indicator. DIN keyboard connector also is included. The system is available with an attractive, beveled front panel with cooling slots and a hinged, translucent door for access to controls and disk drives. Coupled with the removable and reusable air filter, the front panel protects against contamination by dust and dirt often found in

harsh environments.

## Built-In Options

Mounting bracket provided for two half-height drives with access through front panel door. Ample internal space for one or two hard drives. The AT Industrial Computer Development System from Vector.

For more information contact:

VECTOR ELECTRONIC COMPANY, (818) 365-9661. Or call toll-free 800-426-4652 (inside CA), or 800-423-5659 (outside CA).

## Specifications

Dimensions: 19" wide, 21.5" deep, 7" high

Voltage Input: 90-132 VAC, 47-63 Hz 180-264 VA 47-63 Hz

Boards: Accepts 14 AT/XT boards, 8 full size, 6 half-size

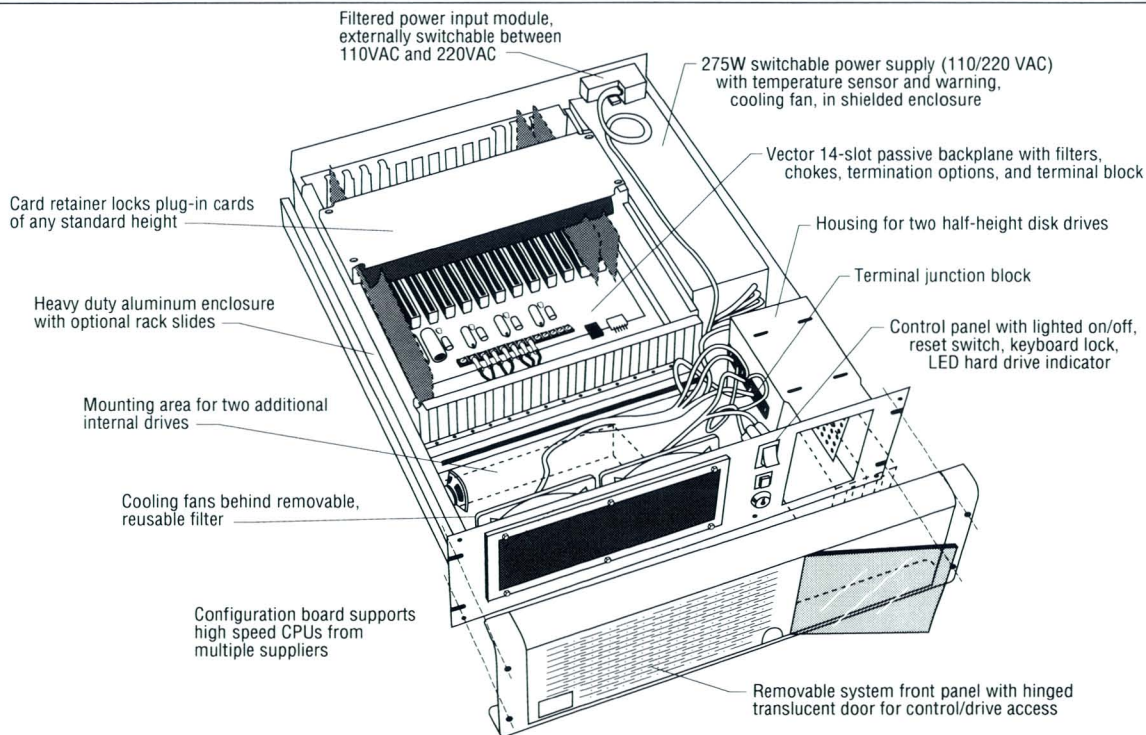
Operating Temperature: 0 to 122° F / -18 to 50° C

Humidity: 90% non-condensing

Power Supply: +5VDC at 35A +12 VDC at 5.0A (9.5A for 10 seconds)-12 VDC at 2.5A - 5 VDC at 1.8A

MTBF: 100,000 hours per MIL-STD HDBK-217D

Cooling: Two 90 cfm fans for card cage with removable, reusable



Vector Electronic's 14-Slot AT Development System

**VECTOR**  
ELECTRONIC COMPANY

# Vectorbord® Patterns

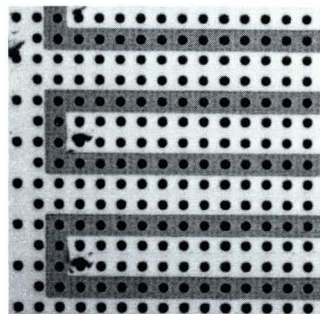
## Bus Patterns:

Our boards are designed for optimum performance and convenience. For most boards, voltage and ground buses (or voltage and ground planes) are incorporated into an overall circuit pattern. Other types of boards combine one or more circuit patterns with one of the bus designs described below. Still other boards are manufactured with buses only. That is, no etched circuit patterns are included, for maximum design flexibility.

All bus surfaces on Vectorbord Prototyping Boards are solder-plated copper. Vectorbord Bus Patterns include:

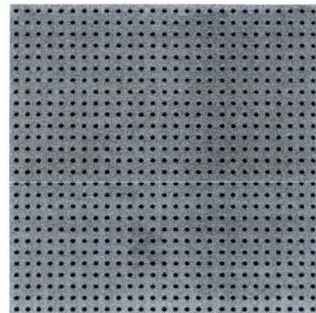
### Interleaved Bus Pattern:

Interleaved bus lines originate at the I/O area and are traced, voltage and ground in opposite directions, along the board perimeter. Both buses then are interleaved, or alternated, across board surface. Voltage and ground signals can be accessed conveniently from any hole or solder pad in the signal area. Interleaved buses may be etched onto one side of board only, or onto both sides of board, back to back and with plated-thru holes.



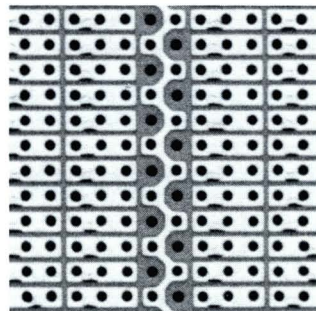
### Peripheral Bus Pattern:

- Voltage and ground bus lines trace a path around board perimeter. Peripheral buses may be on one side of board, or back-to-back on both board sides, with plated-thru holes.



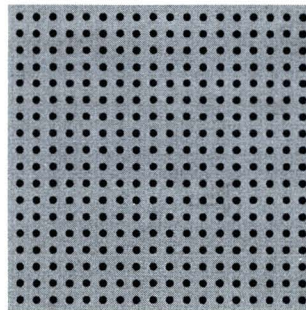
### Zig-Zag Buses:

- Zig-Zag Buses usually are interleaved across board surfaces. Unique shape (see photo) provides access to buses at alternating holes.



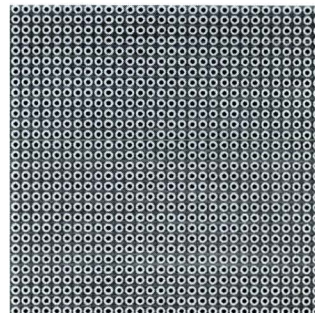
### Contacts Only Pattern

- For maximum flexibility, boards are bare except for edge connector contacts.
- Available for Vectorbord® Plugboards, with connector contacts committed for general purpose applications, or to bus specific specifications. Contacts Only boards provide unrestricted component placement and orientation, and accommodate both Wire Wrap and solder connectors.



### Pad-Per-Hole Pattern:

- Pad-Per-Hole Boards combine the convenience of solder mounting and the flexibility of bare board designs. The Pad-Per-Hole Pattern features isolated solder pads around all holes for convenient mounting of all types of DIPs and other components. Most Pad-Per-Hole boards have plated-thru copper holes. Pad-Per-Hole Boards also have peripheral voltage and ground buses. All pad and bus surfaces are solder-plated for user convenience. Available for general purpose and bus specific applications. Wire Wrap socket pins and connectors are available separately.

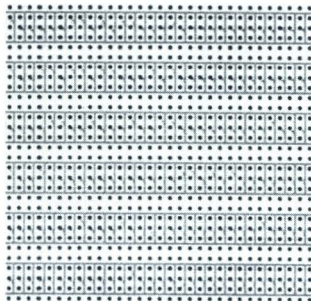


# Vectorbord® Patterns

## 3-Hole Solder Pad Pattern:

3-hole solder pads provide for convenient soldered jumper wire connections to IC leads and sockets, or axial-lead resistors and capacitors. Voltage and ground buses are interleaved between pad areas for overall accessibility. Board capacities can be maximized by mounting DIP IC sockets and other components over bus lines. Wire Wrap pins for 3-Hole Solder Pad Boards are available separately. All pad and bus surfaces are solder-coated for user convenience.

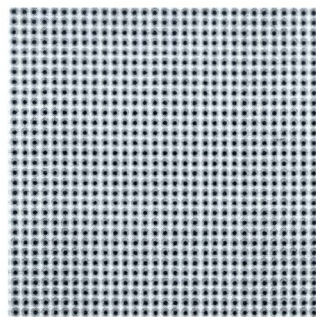
Selected 3-Hole Solder Pad Boards also come with Zig-Zag Buses, which provide access to positive or negative voltage at alternating hole positions.



## Voltage/Ground Plane Pattern

Voltage/Ground Plane Prototyping Boards feature overall power and ground planes on opposite board sides. Holes are isolated from planes by 0.085" diameter clearance pads, both sides of board. Pins in all holes can be committed easily to either voltage or ground plane with solder washers, Vector Part No. T124, or connecting eyelets, Vector Part No. T123. Voltage/Ground Plane Boards are designed for optimum signal performance—distributed capacitance, low inductance, low noise—and are ideal for DIP ICs, Wire Wrap posts, and socket pins.

For selected boards the Voltage/Ground Plane Pattern is combined with other patterns. An overall ground plane is etched onto one side of board only. Another Vectorbord Circuit Pattern is etched onto the other side of the board, or the other side is left bare. A ground plane on one side of board, formerly called Clearance Hole Ground Plane, is now called simply Ground Plane.

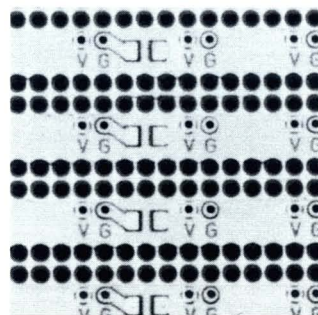


## VECTORBORD plus™ Pattern

High performance prototyping boards—Vectorbord plus™ boards incorporate many features of Voltage/Ground Plane Boards, optimized for socket pins. Available in double-sided and multilayer designs, and with a wide range of available options. Full voltage and ground planes are on opposite board sides. Holes are 0.055" diameter on 0.1" grid, with 0.085" diameter clearance pad around holes on both sides.

The high density grid patterns provide for minimum wire lengths, maximum circuit performance. DIP mounting areas accept all standard lead spacings. Large PGA areas provide for mounting most PLCC and PGA devices.

Vectorbord plus™ boards also provide mounting positions for SMD decoupling capacitors (available factory-installed for most boards). Surface mounting allows components to straddle cap positions for increased package density and low board profiles. 0.042" diameter, precision-drilled and plated-thru voltage and ground holes at each SMD cap position provide access to both planes for double-sided boards, and to multiple planes for multilayer boards.

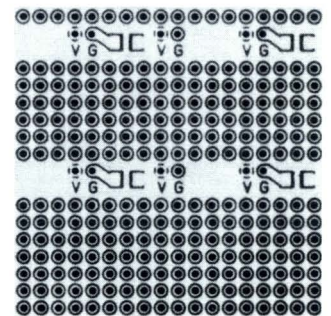


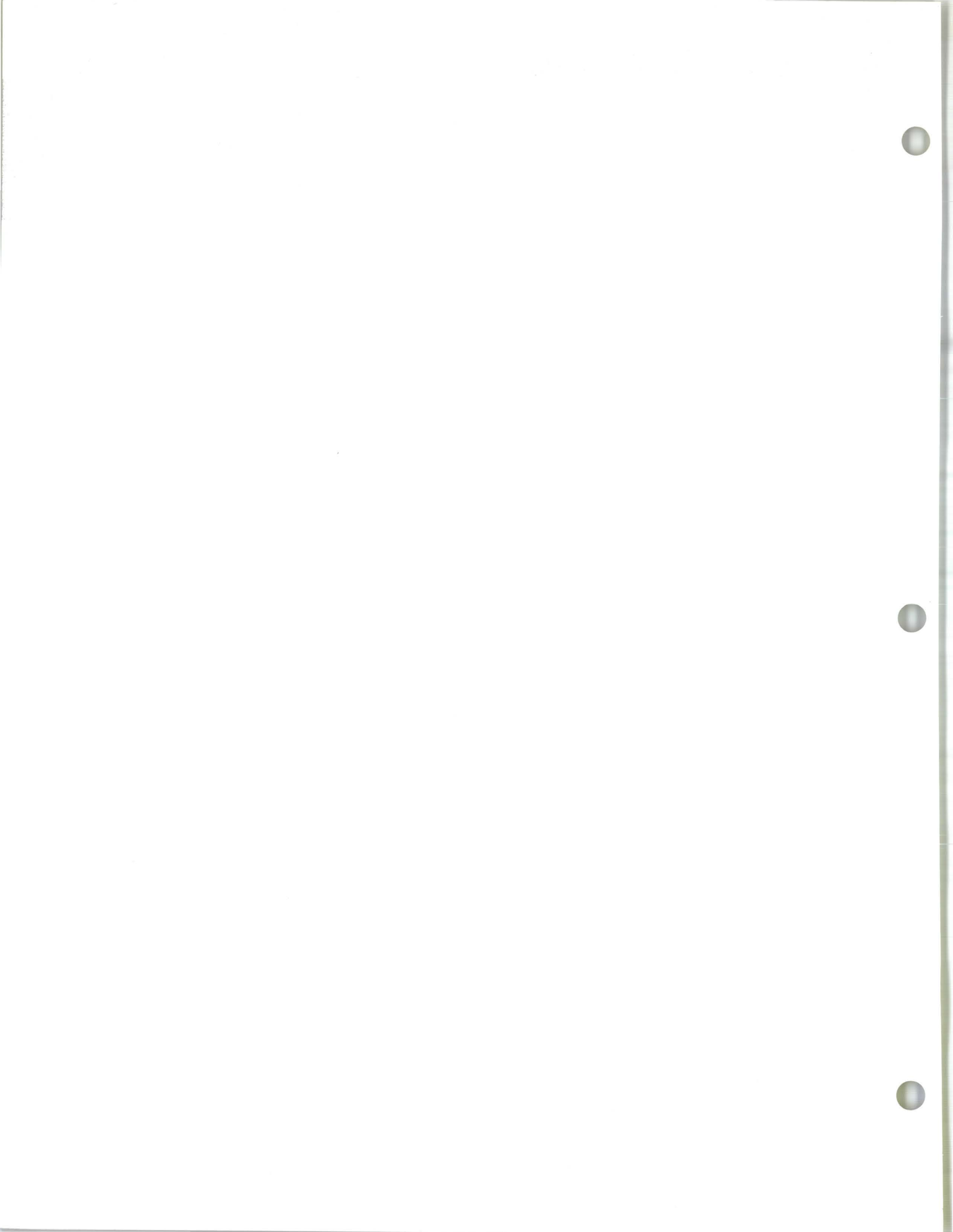
## Pads & Planes™ Pattern

The Pads & Planes™ Pattern is designed for high performance circuitry, unrestricted component placement, and for mixing Wire Wrap and solder components on the same board.

Pads & Planes™ combines features of both Voltage/Ground Plane and Vectorbord plus™ patterns. Full voltage and ground planes are on opposite sides of board. Holes are 0.042" diameter, plated-thru on 0.1" grid with 0.080" diameter isolated solder pad around each hole, both sides. The overall hole pattern provides for mounting DIP IC devices, as well as PLCC and PGA devices.

Pads & Planes™ Boards also include mounting positions for surface mount decoupling capacitors. Surface mounting allows components to straddle cap positions for increased package density, low board profiles. Voltage and ground holes at each SMD cap position provide overall access to both planes. All pad and plane surfaces are solder coated for user convenience. SMD caps can be ordered factory-installed for most boards.



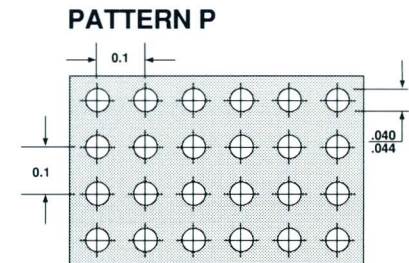
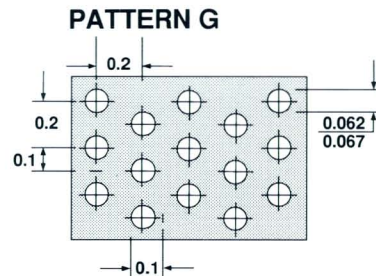
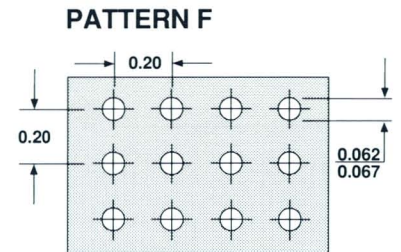
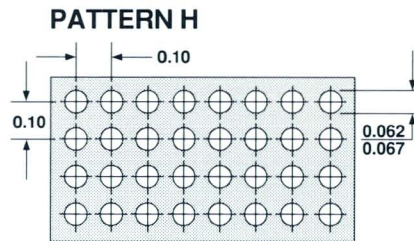


VECTORBORD®  
Prototyping Boards

Vectorbord® Prototyping Boards with punched holes are convenient, economical tools for assembling circuit components—and cost efficient alternatives to custom designs.

Available in several hole patterns for a full range of design needs, circuit speeds, component types and density. May be copper clad on one side. A complete line of accessory products also available, including eyelets, push-in (solderable or solderless), Wire Wrap and screw machine terminals for all Vectorbord® Prototyping Boards.

Pattern	Part No.	Width	Length	Thick	Hole	Material
P	59P44-032	4.50	6.00	0.031	0.042	FR4 Epoxy Glass
P	64P44EP	4.50	6.50	0.062	0.042	FR3 Epoxy Paper
P	64P44WE	4.50	6.50	0.062	0.042	FR4 Epoxy Glass
P	64P44XXXP	4.50	6.50	0.062	0.042	FR2 Phenolic
P	64P44	4.50	6.50	0.062	0.042	CEM-1 Epoxy Glass Composite
P	84P44WE	4.50	8.50	0.062	0.042	FR4 Epoxy Glass
P	169P44C1	4.50	17.00	0.062	0.042	CEM-1 Epoxy Glass Composite
P	169P44C2	4.50	17.00	0.062	0.042	CEM-1 Epoxy Glass Composite
P	169P44	4.50	17.00	0.062	0.042	CEM-1 Epoxy Glass Composite
P	169P44XXXP	4.50	17.00	0.062	0.042	FR2 Phenolic
P	169P44WEC1	4.50	17.00	0.062	0.042	FR4 Epoxy Glass
P	169P44WE	4.50	17.00	0.062	0.042	FR4 Epoxy Glass
P	169P44EP	4.50	17.00	0.062	0.042	FR3 Epoxy Paper
P	169P47EP	4.80	17.00	0.062	0.042	FR3 Epoxy Paper
P	169P59-047	6.00	17.00	0.047	0.042	FR4 Epoxy Glass
P	169P59-032	6.00	17.00	0.031	0.042	FR4 Epoxy Glass
P	169P59C1	6.00	17.00	0.062	0.042	CEM-1 Epoxy Glass Composite
P	169P59XXXP	6.00	17.00	0.062	0.042	FR2 Phenolic
P	169P79WE	8.00	17.00	0.062	0.042	FR4 Epoxy Glass
P	169P79	8.00	17.00	0.062	0.042	CEM-1 Epoxy Glass Composite
P	169P84	8.50	17.00	0.062	0.042	CEM-1 Epoxy Glass Composite
P	169P84C1	8.50	17.00	0.062	0.042	CEM-1 Epoxy Glass Composite
P	169P84EP	8.50	17.00	0.062	0.042	FR3 Epoxy Paper
P	169P84WE	8.50	17.00	0.062	0.042	FR4 Epoxy Glass
P	169P84WEC1	8.50	17.00	0.062	0.042	FR4 Epoxy Glass
P	349P84	8.50	35.00	0.062	0.042	CEM-1 Epoxy Glass Composite
P	169P99	10.00	17.00	0.062	0.042	CEM-1 Epoxy Glass Composite
G	42G22WEC1	4.50	8.50	0.062	0.062	CEM-1 Epoxy Glass Composite
G	42G24WE	4.80	8.50	0.062	0.062	CEM-1 Epoxy Glass Composite
G	85G24EP	4.80	17.00	0.062	0.062	FR3 Epoxy Paper
G	85G24WE	4.80	17.00	0.062	0.062	CEM-1 Epoxy Glass Composite
G	85G42EP	8.50	17.00	0.062	0.062	FR3 Epoxy Paper
G	85G42WE	8.50	17.00	0.062	0.062	FR4 Epoxy Glass
H	85H48WE	4.80	8.50	0.062	0.062	FR4 Epoxy Glass
H	170H48WE	4.80	17.00	0.062	0.062	FR4 Epoxy Glass
H	85H85WE	8.50	8.50	0.062	0.062	FR4 Epoxy Glass
H	170H85WE	8.50	17.00	0.062	0.062	FR4 Epoxy Glass
F	85F24EP	4.80	17.00	0.062	0.062	FR3 Epoxy Paper
F	85F42WEC1	8.50	17.00	0.062	0.062	CEM-1 Epoxy Glass Composite
F	175F99WE	20.00	35.00	0.062	0.062	FR4 Epoxy Glass



C1 = copper-cald one side

C2 = copper-clad both sides

## Vector's Most Functional Circuit Patterns and Provisions for Adding I/O Connectors

Vectorbord® Printed Circuit Prototyping Boards cover a wide range of development requirements—without the expense of edge connectors.

Vector makes a Printed Circuit Prototyping Board for virtually any application—including those requiring high component densities and solder or Wire Wrap connections. All boards are manufactured to precision standards and specifications. All bus and circuit patterns are solder-coated for user convenience.

### Common Features Include:

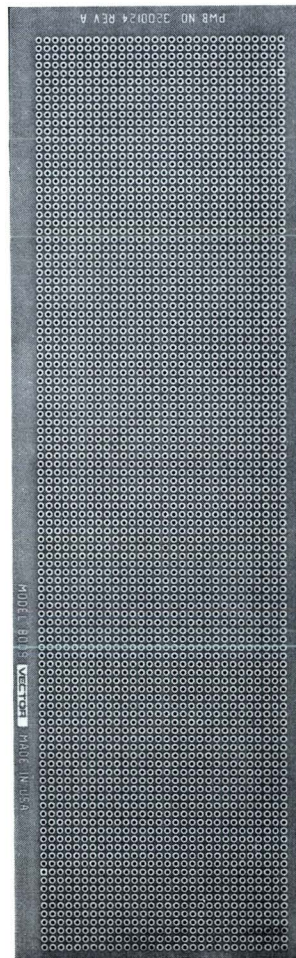
- 0.042" diameter holes on 0.1" grid
- Flame retardant, epoxy glass or epoxy glass composite materials
- Complete selection of terminals, accessories and tools available.

## 3.5" x 11.5"

### 8009: Pad-Per-Hole

*With Precision-Drilled, Plated-Thru Holes*

- 0.042" diameter holes on 0.1" grid
- 0.080" diameter, isolated solder pad around each hole
- Unrestricted component placement
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Board size and surface area approximate IBM PS/2 specifications

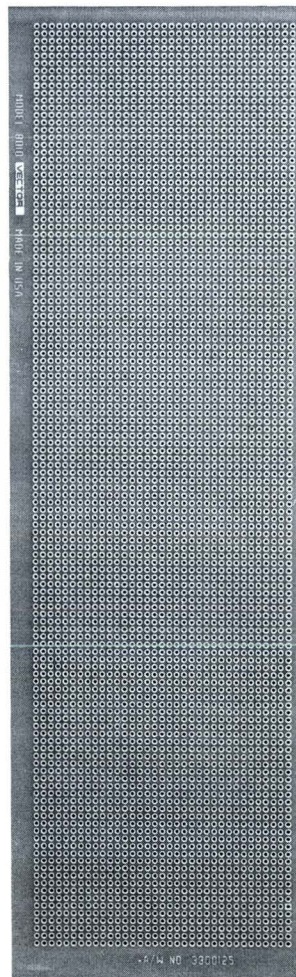


## 4.0" x 13"

### 8010: Pad-Per-Hole

*With Precision-Drilled, Plated-Thru Holes*

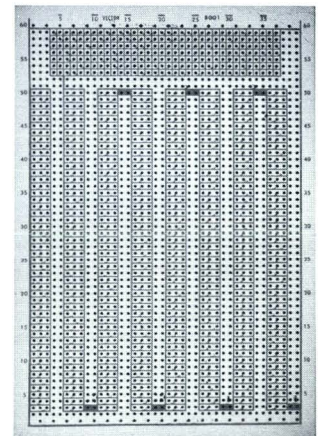
- 0.042" diameter holes on 0.1" grid
- 0.080" diameter, isolated solder pad around each hole
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Unrestricted component placement
- Board size and surface area approximate Macintosh II specifications



## 4.5" x 6.5"

### 8001: 3-Hole Solder Pad

- 0.042" diameter holes on 0.1" grid
- Circuit pattern etched onto wiring side only
- Solder mount DIP sockets or IC devices with any width lead spacing
- Capacity for mounting up to 20, 16-pin DIP devices
- 3-hole solder pads (0.28" x 0.080") for interconnecting multiple component leads
- All pad and bus surfaces solder-coated for user convenience

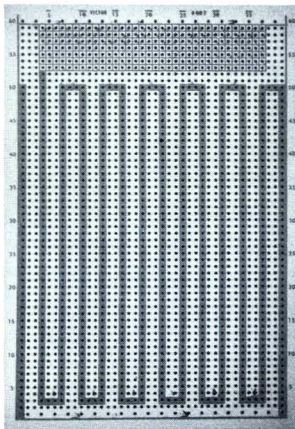


Part No.	Width	Height	Thick	Hole Dia.	16-Pin DIP Capacity	Material	Circuit Pattern	Wire Wrap	
								Terminals	Socket Pins
8009	11.50	3.50	0.062	0.042	94	FR4 Epoxy Glass	Pad-Per-Hole	T125, T126	R32
8010	12.86	4.00	0.062	0.042	124	FR4 Epoxy Glass	Pad-Per-Hole	T125, T126	R32
8001	6.50	4.50	0.062	0.042	20	CEM-1 Epoxy Glass Composite	3-Hole Solder Pad	T125, T126	R32

4.5" x 6.5"

8002:  
Interleaved Buses

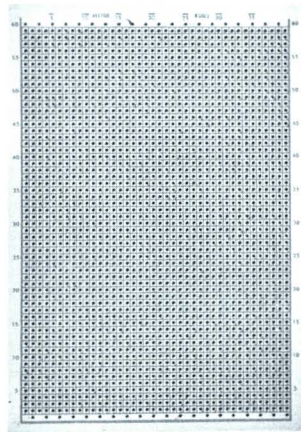
- 0.042" diameter holes on 0.1" grid
- Ideal for Wire Wrap applications
- Power and ground buses etched onto wiring side only
- Bus surfaces solder-coated for user convenience
- Mount components with 0.3", 0.6" and 0.9" lead spacing
- Accommodates up to 36, 16-pin DIP IC devices
- I/O area with solder pads for mounting connector
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



4.5" x 6.5"

8003:  
Pad-Per-Hole

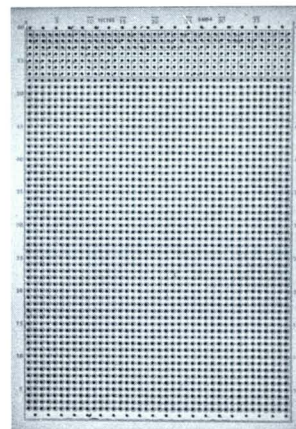
- 0.042" diameter holes on 0.1" grid
- Square solder pad etched around each hole on wiring side
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Mount up to 60, 16-pin DIP IC devices
- Accommodates any type DIP IC device or discrete component



4.5" x 6.5"

8004:  
Ground Plane

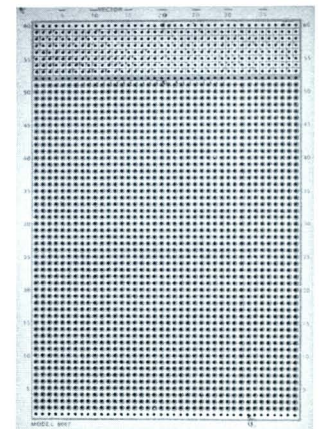
- 0.042" diameter holes on 0.1" grid
- 0.085" diameter clearance areas around holes
- Etched overall ground plane on wiring side only
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- To commit Wire Wrap pins to voltage and ground planes, use Vector T124 solder washers, available separately
- Plane surface solder-coated for user convenience
- Accommodates up to 50, 16-pin DIP IC devices
- I/O area with solder pads for mounting connector



4.5" x 6.5"

8007:  
Pad-Per-Hole/ Ground Plane

- 0.042" diameter holes on 0.1" grid
- Pad-Per-Hole Pattern on component side—overall Ground Plane Pattern on wiring side
- 0.080" diameter, isolated solder pad around holes, component side
- 0.085" diameter clearance areas isolate holes from ground plane, wiring side
- Plane and pad surfaces solder-coated for user convenience
- Accommodates any type DIP IC device or discrete component
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- To commit Wire Wrap pins to ground plane, use Vector T124 solder washers, available separately



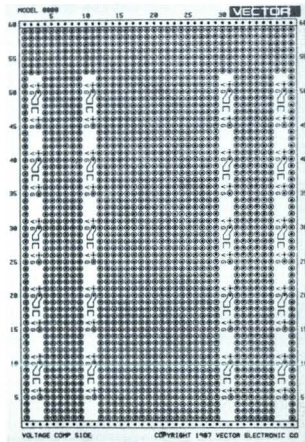
Part No.	Width	Height	Thick	Hole Dia.	16-Pin DIP Capacity	Material	Circuit Pattern	Wire Wrap	
								Terminals	Socket Pins
8002	6.50	4.50	0.062	0.042	36	CEM-1 Epoxy Glass Composite	Interleaved Buses	T125, T126	R32
8003	6.50	4.50	0.062	0.042	60	CEM-1 Epoxy Glass Composite	Pad-Per-Hole	T125, T126	R32
8004	6.50	4.50	0.062	0.042	50	CEM-1 Epoxy Glass Composite	Ground Plane	T125, T126	R32
8007	6.50	4.50	0.062	0.042	60	CEM-1 Epoxy Glass Composite	Pad-Per-Hole/Ground Plane	T125, T126	R32

## 4.5" x 6.5"

### 8008: Pads & Planes™

*Unique Circuit Pattern Features Full Voltage and Ground Planes With Isolated, Plated-Thru Holes, and Positions for Mounting SMD Capacitors*

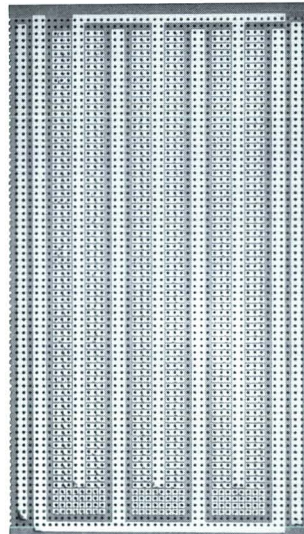
- 0.042" diameter holes on 0.1" grid
- 0.080" diameter, isolated solder pad around each hole, both sides
- Massive overall voltage and ground planes on opposite board sides for controlled impedance
- Plane surfaces are solder coated for user convenience
- SMD cap positions for discrete decoupling capacitors
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



## 4.5" x 8.08"

### 3677-6: 3-Hole Solder Pad

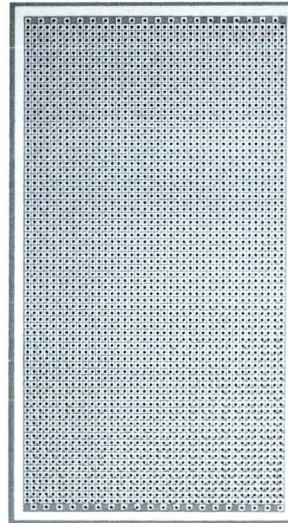
- 0.042" diameter holes on 0.1" grid
- Etched circuit pattern on wiring side only
- 3-hole solder pads (0.28" x 0.080") for interconnecting multiple component leads
- Pad and bus surfaces solder-coated for user convenience
- Bus outlines traced on component side to facilitate component placement
- Mount up to 21, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



## 4.5" x 8.08"

### 45P80-1: Pad-Per-Hole

- 0.042" diameter holes on 0.1" grid
- 0.080" diameter, isolated solder pad around holes, both sides
- Capacity for mounting 80, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately

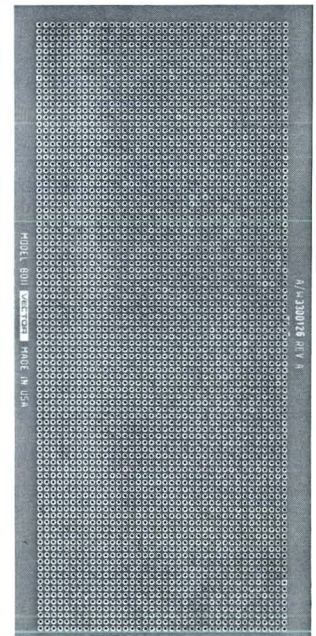


## 4.5" x 9.6"

### 8011: Pad-Per-Hole

*With Precision-Drilled, Plated-Thru Holes*

- 0.042" diameter holes on 0.1" grid
- 0.080" diameter, isolated solder pad around holes, both sides
- Capacity for mounting 103, 16-pin DIP IC devices
- Unrestricted component placement, extended area for high density applications.
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



Part No.	Width	Height	Thick	Hole Dia.	16-Pin DIP Capacity	Material	Circuit Pattern	Wire Wrap Terminals	Socket Pins
8008	6.50	4.50	0.062	0.042	70	FR4 Epoxy Glass	Pads & Planes	T125, T126	R32
3677-6	8.08	4.50	0.062	0.042	21	CEM-1 Epoxy Glass Composite	3-Hole Solder Pad	T125, T126	R32
45P80-1	8.08	4.50	0.062	0.042	80	CEM-1 Epoxy Glass Composite	3-Hole Solder Pad	T125, T126	R32
8011	9.60	4.50	0.062	0.042	103	FR4 Epoxy Glass	Pad-Per-Hole	T125, T126	R32

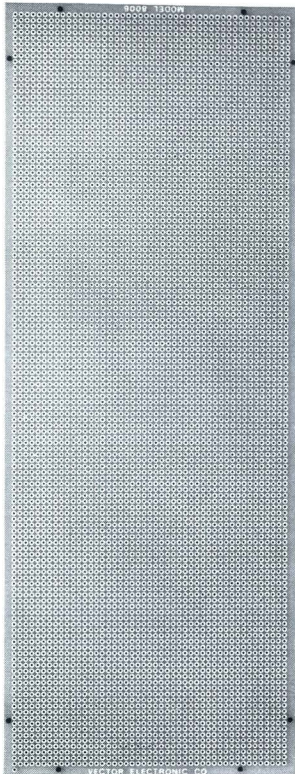


**5.0" x 13.25"**

**8006:  
Pad-Per-Hole**

*With Precision-Drilled,  
Plated-Thru Holes*

- 0.042" diameter holes on 0.1" grid
- 0.080" diameter, isolated solder pad around each hole, both sides
- Unrestricted component placement, extended area for high density applications
- Capacity for mounting up to 154, 16-pin DIP IC devices
- Board can be cut down into smaller units
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately

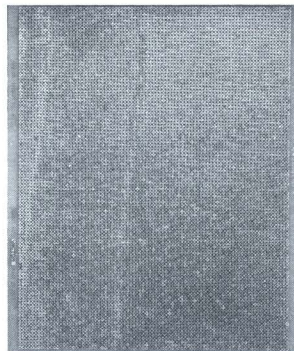


**9.2" x 11"**

**8012:  
Pad-Per-Hole**

*Approximates Eurocard  
(DIN) Specifications: 6U x 280mm,  
Can Be Sheared Down to 6U x 220mm,  
or 160mm*

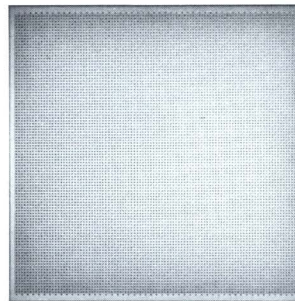
- 0.042" diameter holes on 0.1" grid
- 0.080" diameter, isolated solder pad around holes, both sides
- Unrestricted component placement over entire board surface
- Capacity for mounting 283, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



**10.6" x 10.6"**

**106P106-1:  
Pad-Per-Hole**

- 0.042" diameter holes on 0.1" grid
- 0.080" diameter, isolated solder pad around each hole, both sides
- Square solder pad around each hole, both sides of board
- Capacity for mounting up to 275, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



Part No.	Width	Height	Thick	Hole Dia.	16-Pin DIP Capacity	Material	Circuit Pattern	Wire Wrap Terminals	Socket Pins
8006	13.25	5.00	0.062	0.042	154	FR4 Epoxy Glass	Pad-Per-Hole	T125, T126	R32
8012	11.00	9.20	0.062	0.042	283	FR4 Epoxy Glass	Pad-Per-Hole	T125, T126	R32
106P106-1	10.60	10.60	0.062	0.042	275	CEM-1 Epoxy Glass Composite	Pad-Per-Hole	T125, T126	R32

# Plugbord™ Prototyping Boards, General Purpose 30 Contacts

VECTORBORD®

**Vectorbord®  
Plugbords,™  
Featuring Gold-  
Plated Edge  
Connectors and  
0.042" Diameter  
Holes on 0.1" Grids\***

**Streamline prototyping activities with Vectorbord® General Purpose Plugbords™. All General Purpose Plugbords™ are made of flame-retardant, epoxy glass or epoxy glass composite materials and are built to precise specifications for secure solder or Wire Wrap connections.**

**Many optional sizes, models and etched circuit patterns are available.**

**Vector also supplies a full line of accessories which include: extender cards; solder and Wire Wrap terminals; pins; DIP and PGA sockets; socket pins; mating receptacles; cases; and card cages.**

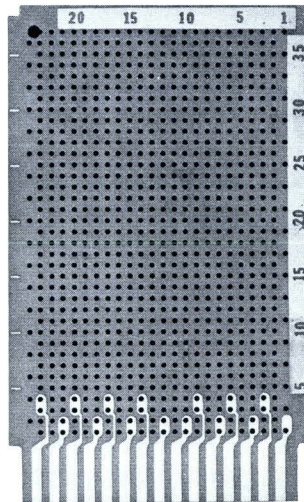
**All Vectorbord® Plugbords™ are supplied with layout sheets and comprehensive instructions to facilitate design and assembly activities.**

\* 838 Series boards are designed for transistors. Holes are 0.062" diameter holes positioned at alternating intersections of 0.1" grid.

**2.73" x 4.5"**

**3797:  
Contacts Only**

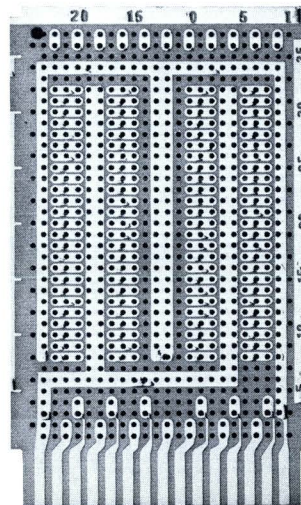
- 0.042" diameter holes on 0.1" grid
- 30 edge contacts: 15 per side on 0.156" centers, nickel/gold plated
- Unrestricted component placement over entire board surface
- Accepts virtually any discrete component
- Capacity for mounting 15, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



**2.73" x 4.5"**

**3797-2:  
3-Hole Solder Pad**

- 0.042" diameter holes on 0.1" grid
- 30 edge contacts: 15 per side on 0.156" centers, nickel/gold plated
- 3-hole solder pads (0.28" x 0.080") for interconnecting multiple component leads
- All pad and bus surfaces solder-coated for user convenience
- Convenient, easy-to-read hole marking legend on wiring side



Part No.	Width	Height	Contacts Spacing	Contacts Number	Thick	Hole Dia.	16-Pin DIP Capacity	Material	Circuit Pattern	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	Wire Wrap Terminals	Wire Wrap Socket Pins
3797	4.50	2.73	0.156	30	0.062	0.042	15	CEM-1 Epoxy Glass Composite	Contacts Only	R630	-	3690-10	Series 12	T125, T126	R32
3797-2	4.50	2.73	0.156	30	0.062	0.042	4	CEM-1 Epoxy Glass Composite	3-Hole Solder Pad	R630	-	3690-10	Series 12	T125, T126	R32

**VECTOR**  
ELECTRONIC COMPANY

12460 Gladstone Ave., Sylmar, CA 91342 Phone (818) 365-9661 Fax (818) 365-5718  
Inside CA (800) 426-4652 Outside CA (800) 423-5659

# Plugbord™ Prototyping Boards, General Purpose

## 44 Contacts

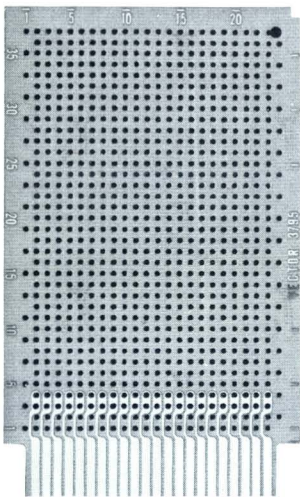
VECTORBORD®

General Purpose

### 2.73" x 4.5"

#### 3795: Contacts Only

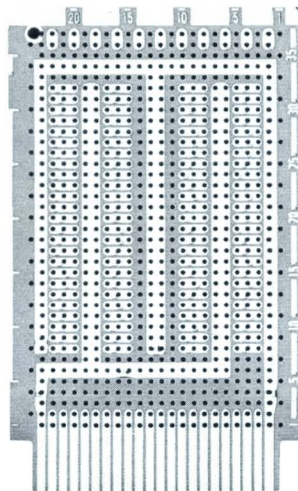
- 0.042" diameter holes on 0.1" grid
- 44 edge contacts: 22 per side on 0.1" centers, nickel/gold-plated
- Unrestricted component placement over entire board surface
- Capacity for mounting 15, 16-pin DIP IC devices
- Accepts virtually any type of component
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



### 2.73" x 4.5"

#### 3795-1: 3-Hole Solder Pad

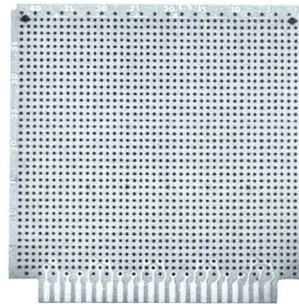
- 0.042" diameter holes on 0.1" grid
- 44 edge contacts: 22 per side on 0.1" centers, nickel/gold-plated
- 3-hole solder pads (0.28" x 0.080") for interconnecting multiple component leads
- Pad and bus surfaces solder-coated for user convenience
- Convenient, easy-to-read hole marking legend on wiring side
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



### 4.5" x 4.5"

#### 3662-5: Contacts Only

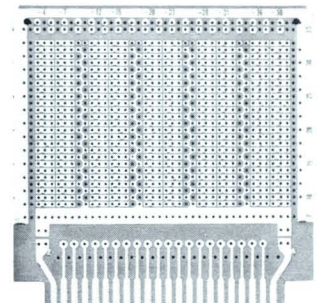
- 0.042" diameter holes on 0.1" grid
- 44 edge contacts: 22 per side on 0.156" centers, nickel/gold-plated
- 22 numbered edge contacts on front side; 21 plus grounding contact on reverse side
- Bare board provides for unrestricted component placement over entire board surface
- Hole marking legend on both sides of board
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



### 4.5" x 4.5"

#### 4112-5: Ground Plane/3-Hole Solder Pad (With Zig-Zag Buses)

- 0.042" diameter holes on 0.1" grid
- 44 edge contacts: 22 per side 0.156" centers, nickel/gold plated
- 3-Hole Solder Pad Pattern on wiring side; Ground Plane on component side with 0.085" diameter, clearance areas around holes
- 3-hole solder pads (0.28" x 0.080") for interconnecting multiple component leads
- Area at top end has solder pads around holes for test points, LEDs, and other devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- To commit Wire Wrap pins to ground planes, use Vector T124 solder washers, available separately



Part No.	Width	Height	Contacts Spacing	Number	Thick Hole Dia.	Hole Dia.	16-Pin DIP Capacity	Material	Circuit Pattern	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	Wire Wrap Terminals	Wire Wrap Socket Pins
3795	4.50	2.73	0.100	44	0.062	0.042	15	CEM-1 Epoxy Glass Composite	Contacts Only	-	R644-2	3690-8	Series 12	T125, T126	R32
3795-1	4.50	2.73	0.100	44	0.062	0.042	4	CEM-1 Epoxy Glass Composite	3-Hole Solder Pad	-	R644-2	3690-8	Series 12	T125, T126	R32
3662-5	4.50	4.50	0.156	44	0.062	0.042	40	CEM-1 Epoxy Glass Composite	Contacts Only	R644	R644-3	3690	Series 13	T125, T126	R32
4112-5	4.50	4.50	0.156	44	0.062	0.042	8	CEM-1 Epoxy Glass Composite	3-Hole Solder Pad	R644	R644-3	3690	Series 13	T125, T126	R32



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# Plugbord™ Prototyping Boards, General Purpose

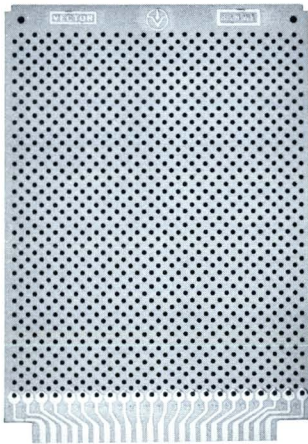
## 44 Contacts

**VECTORBORD®**

**4.5" x 6.5"**

**838WE:  
Contacts Only**

- 0.062" diameter holes positioned at alternating intersections of 0.1" grid— See G Pattern
- Designed for mounting transistors
- 44 edge contacts: 22 per side on 0.156" centers, tin alloy plated
- Unrestricted component placement over entire board surface



**4.5" x 6.5"**

**838WE1GN:  
Contacts Only**

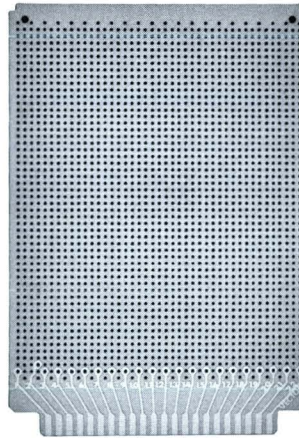
- 0.062" diameter holes positioned at alternating intersections of 0.1" grid
- 44 edge contacts: 22 per side on 0.156" centers, nickel/ gold-plated
- Designed for mounting transistors
- Unrestricted component placement over entire board surface



**4.5" x 6.5"**

**3662:  
Contacts Only**

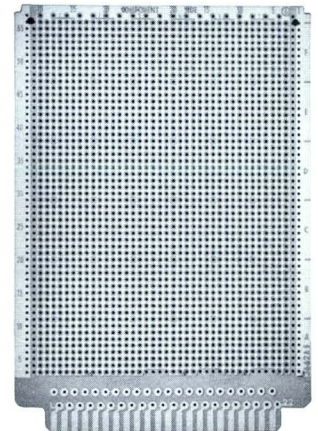
- 0.042" diameter holes on 0.1" grid
- Unrestricted component placement over entire board surface
- Capacity for mounting 50, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



**4.5" x 6.5"**

**3662A6:  
Ground Plane**

- 0.042" diameter holes on 0.1" grid
- 0.085" diameter clearance area around holes
- Ground plane on component side; wiring side has contacts only
- Plane surface is solder-coated for user convenience
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- To commit Wire Wrap pins to ground planes, use Vector T124 solder washers, available separately



Part No.	Width	Height	Contacts Spacing	Contacts Number	Thick	Hole Dia.	16-Pin DIP Capacity	Material	Circuit Pattern	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	Wire Wrap Terminals	Wire Wrap Socket Pins
838WE	6.50	4.50	0.156	44	0.062	0.062	-	CEM-1 Epoxy Glass Composite	Contacts Only	R644	R644-3	3690	Series 13	T125,T126	R32
838WE1GN	6.50	4.50	0.156	44	0.062	0.062	-	FR4 Epoxy Glass	Contacts Only	R644	R644-3	3690	Series 13	T125,T126	R32
3662	6.50	4.50	0.156	44	0.062	0.042	50	CEM-1 Epoxy Glass Composite	Contacts Only	R644	R644-3	3690	Series 13	T125,T126	R32
3662A6	6.50	4.50	0.156	44	0.062	0.042	90	CEM-1 Epoxy Glass Composite	Ground Plane	R644	R644-3	3690	Series 13	T125,T126	R32



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# Plugbord™ Prototyping Boards, General Purpose

## 44 Contacts

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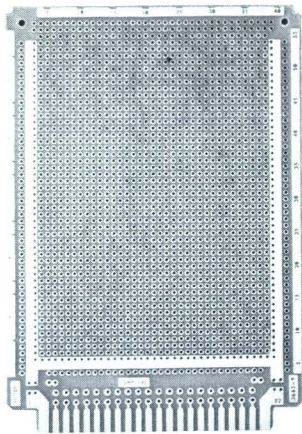
General Purpose

### 4.5" x 6.5"

#### 3662-9: Pad-Per-Hole

*With Precision-Drilled,  
Plated-Thru Holes*

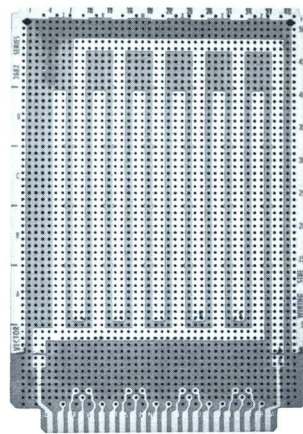
- 0.042" diameter holes on 0.1" grid
- 0.080" diameter, isolated solder pad around holes, both sides
- Capacity for mounting 48, 16-pin DIP IC devices
- Pad and bus surfaces solder-coated for quick, convenient soldering
- Convenient, easy-to-read hole marking legend provided
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



### 4.5" x 6.5"

#### 3682-2: Interleaved Buses

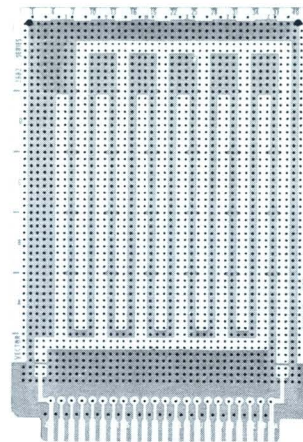
- 0.042" diameter holes on 0.1" grid
- Bus pattern on wiring side, solder-coated for user convenience
- Bus outline traced on component side to facilitate component placement
- Capacity for mounting 24, 16-pin DIP IC devices
- Mounts DIPs with 0.3", 0.4" and 0.9" lead spacing
- Unclad test point area at top of board
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



### 4.5" x 6.5"

#### 3682-4: Interleaved Power Bus/Ground Plane

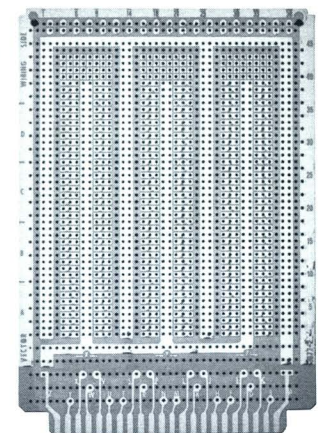
- 0.042" diameter holes on 0.1" grid
- Power bus in rows across component side; overall ground plane on wiring side
- 0.085" etched clearance area around each hole on ground plane side
- Bus and plane surfaces solder coated for user convenience
- Capacity for mounting 24, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- To commit Wire Wrap pins to ground planes, use Vector T124 solder washers, available separately



### 4.5" x 6.5"

#### 3677-2: 3-Hole Solder Pad

- 0.042" diameter holes on 0.1" grid
- 3-hole solder pads (0.28" x 0.080") for interconnecting multiple component leads
- Voltage/ground buses interleaved between pad areas on wiring side
- Pad and bus surfaces solder-coated for user convenience
- Test point area, with solder pads around holes, provided along back edge of board
- Convenient, easy-to-read hole marking legend provided



Part No.	Width	Height	Contacts Spacing	Contacts Number	Thick	Hole Dia.	16-Pin DIP Capacity	Material	Circuit Pattern	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	Wire Wrap Terminals	Wire Wrap Socket Pins
3662-9	6.50	4.50	0.156	44	0.062	0.042	48	FR4 Epoxy Glass	Pad-Per-Hole	R644	R644-3	3690	Series 13	T125, T126	R32
3682-2	6.50	4.50	0.156	44	0.062	0.042	24	CEM-1 Epoxy Glass Composite	Interleaved Buses	R644	R644-3	3690	Series 13	T125, T126	R32
3682-4	6.50	4.50	0.156	44	0.062	0.042	24	CEM-1 Epoxy Glass Composite	Interleaved Bus/Ground Plane	R644	R644-3	3690	Series 13	T125, T126	R32
3677-2	6.50	4.50	0.156	44	0.062	0.042	12	CEM-1 Epoxy Glass Composite	3-Hole Solder Pad	R644	R644-3	3690	Series 13	T125, T126	R32

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# Plugbord™ Prototyping Boards, General Purpose

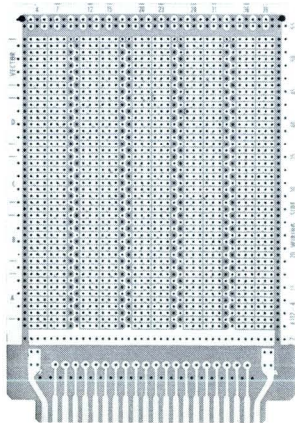
## 44 Contacts

VECTORBORD®

### 4.5" x 6.5"

#### 4112-4: 3-Hole Solder Pad (With Zig-Zag Buses)

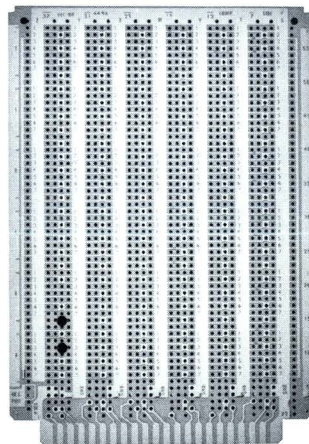
- 0.042" diameter holes on 0.1" grid
- Continuous ground plane on component side with 0.085" clearance pad around each hole
- 3-hole solder pads (0.28" x 0.080") for interconnecting multiple component leads
- Bus, plane, and pad surfaces solder-coated for user convenience
- Unclad area at top end for test points, LEDs, and other components
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- To commit Wire Wrap pins to ground planes, use Vector T124 solder washers, available separately



### 4.5" x 6.5"

#### 4494: Voltage/Ground Plane

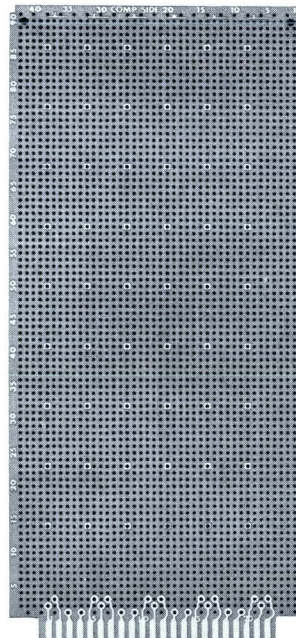
- 0.042" diameter holes on 0.1" grid
- Voltage/ground planes on opposite board sides
- 0.085" diameter clearance area around each hole, both sides of board
- Plane surfaces solder-coated for user convenience
- Circuit pattern provides for mounting DIP IC devices with leads on 0.3", 0.4", 0.6" or 0.9" centers combined with other discrete components
- Capacity for mounting 42, 16-pin DIP IC devices
- Convenient, easy-to-read hole marking legend provided
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- To commit Wire Wrap pins to voltage and ground planes, use Vector T124 solder washers, available separately



### 4.5" x 9.6"

#### 3662-2: Contacts Only

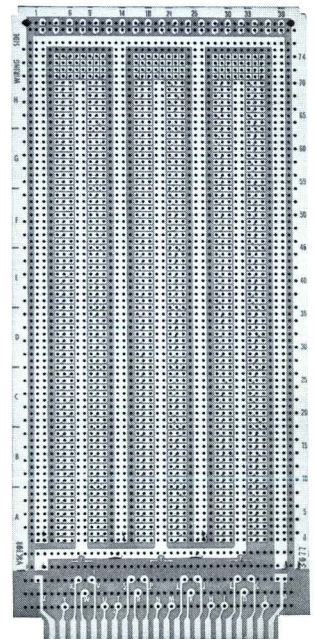
- 0.042" diameter holes on 0.1" grid
- Unrestricted component placement over entire board surface
- Capacity for mounting 90, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



### 4.5" x 9.6"

#### 3677: 3-Hole Solder Pad

- 0.042" diameter holes on 0.1" grid
- 3-hole solder pads (0.28" x 0.080") for interconnecting multiple component leads
- Pad and bus surfaces solder-coated for user convenience
- Unclad test point area provided along top edge of board
- Capacity for mounting 21, 16-pin DIP IC devices
- Convenient, easy-to-read hole marking legend provided
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



Part No.	Width	Height	Spac- ing	Num- ber	Thick	Hole Dia.	16-Pin DIP Capacity	Material	Circuit Pattern	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	Wire Wrap Terminals	Wire Wrap Socket Pins
4112-4	6.50	4.50	0.156	44	0.062	0.042	25	CEM-1 Epoxy Glass Composite	3-Hole Solder Pad	R644	R644-3	3690	Series 13	T125, T126	R32
4494	6.50	4.50	0.156	44	0.062	0.042	42	CEM-1 Epoxy Glass Composite	Voltage/Ground Planes	R644	R644-3	3690	Series 13	T125, T126	R32
3662-2	9.60	4.50	0.156	44	0.062	0.042	90	CEM-1 Epoxy Glass Composite	Contacts Only	R644	R644-3	3690-6	Series 14	T125, T126	R32
3677	9.60	4.50	0.156	44	0.062	0.042	21	CEM-1 Epoxy Glass Composite	3-Hole Solder Pad	R644	R644-3	3690-6	Series 14	T125, T126	R32

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# Plugbord™ Prototyping Boards, General Purpose

## 44 Contacts

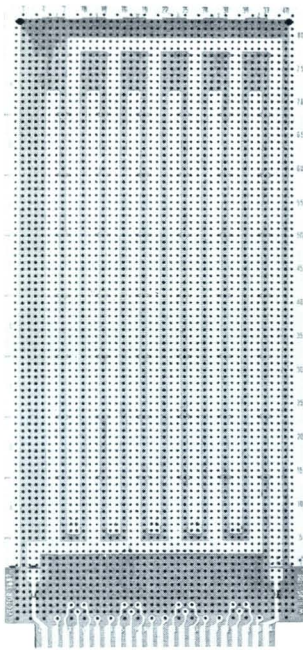
VECTORBORD®

General Purpose

### 4.5" x 9.6"

#### 3682: Interleaved Buses

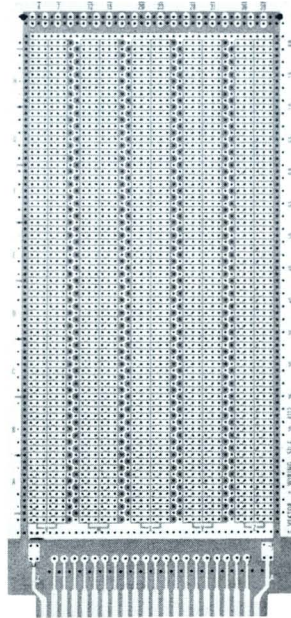
- 0.042" diameter holes on 0.1" grid
- Etched bus pattern on wiring side, solder-coated for user convenience
- Bus outlines traced on component side
- Capacity for mounting 48, 16-pin DIP IC devices
- Mounts DIPs with 0.3", 0.4" and 0.9" lead spacings
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



### 4.5" x 9.6"

#### 4112: 3-Hole Solder Pad (With Zig-Zag Buses)

- 0.042" diameter holes on 0.1" grid
- Zig-zag bus pattern on wiring side provides access to voltage or ground at alternating hole positions
- 3-hole solder pads (0.28" x 0.080") for interconnecting multiple component leads
- Continuous ground plane on component side with 0.085" etched clearance area around each hole
- Bus, pad, and plane surfaces are solder-coated for user convenience
- Unclad area at top end for test points, LEDs, and other components
- To commit Wire Wrap pins to ground planes, use Vector T124 solder washers, available separately



Part No.	Width	Height	Contacts Spacing	Thick Num-ber	Hole Dia.	16-Pin DIP Capacity	Material	Circuit Pattern	Solder Connector	Wire Wrap	Extender	Recommended Card Cage	WireWrap Terminals	Socket Pins
3682	9.60	4.50	0.156	44	0.062	0.042	48 CEM-1 Epoxy Glass Composite	Interleaved Buses	R644	R644-3	3690-6	Series 13	T125, T126	R32
4112	9.60	4.50	0.156	44	0.062	0.042	40 CEM-1 Epoxy Glass Composite	3-Hole Solder Pad	R644	R644-3	3690-6	Series 13	T125, T126	R32



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# Plugbord™ Prototyping Boards, General Purpose

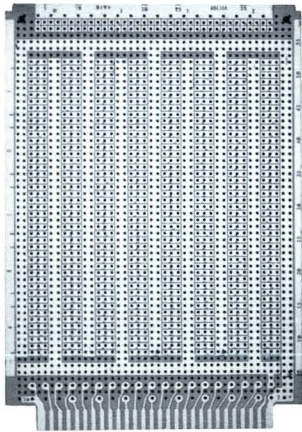
## 56 Contacts

**VECTORBORD®**

### 4.5" x 6.5"

#### 4610: 3-Hole Solder Pad

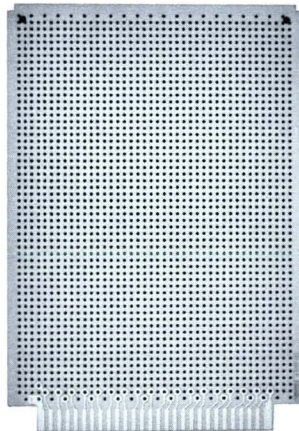
- 0.042" diameter holes on 0.1" grid
- Circuit pattern on wiring side only; component side has contacts only
- 3-hole solder pads (0.28" x 0.080") for interconnecting multiple component leads
- Pads at top of board accommodate ribbon cable I/O connector
- Pad and bus surfaces solder-coated for user convenience
- Capacity for mounting 20, 16-pin DIP IC devices
- Designed to STD Bus specifications: 5 volt bus terminates to pins 1 and 2; ground bus terminates to pins 3 and 4
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



### 4.5" x 6.5"

#### 4610-1: Contacts Only

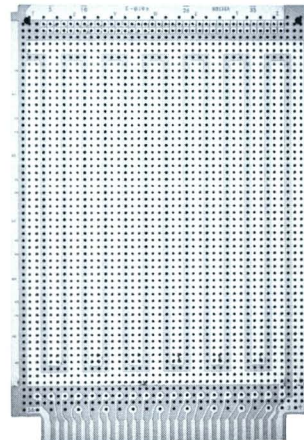
- 0.042" diameter holes on 0.1" grid
- Unrestricted component placement over entire board surface
- Capacity for mounting 59, 16-pin DIP IC devices
- Designed to STD Bus specifications: 5 volt bus terminates to pins 1 and 2; ground bus terminates to pins 3 and 4
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



### 4.5" x 6.5"

#### 4610-2: Interleaved Buses

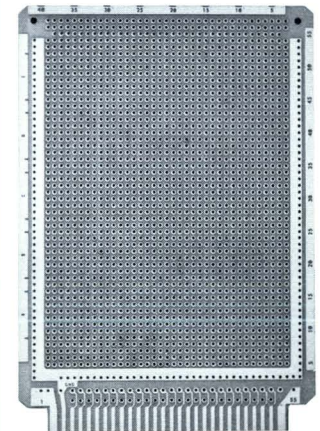
- 0.042" diameter holes on 0.1" grid
- Bus pattern on wiring side, solder-coated for user convenience
- Pads at top of board accommodate ribbon cable I/O connector
- Capacity for mounting 35, 16-pin DIP IC devices
- Designed to STD Bus specifications: 5 volt bus terminates to pins 1 and 2; ground bus terminates to pins 3 and 4
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



### 4.5" x 6.5"

#### 4610-3: Pad-Per-Hole

- With Precision-Drilled, Plated-Thru Holes*
- 0.042" diameter holes on 0.1" grid
  - 0.085" diameter, etched clearance pad around holes, both sides
  - Peripheral bus pattern connected to edge contacts
  - Pad and bus surfaces solder-coated for user convenience
  - Capacity for mounting 52, 16-pin DIP IC devices
  - Pads at top of board accommodate ribbon cable I/O connector
  - Designed to STD Bus specifications: 5 volt bus terminates to pins 1 and 2; ground bus terminates to pins 3 and 4
  - Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



Part No.	Width	Height	Contacts Spacing	Contacts Number	Thick	Hole Dia.	16-Pin DIP Capacity	Material	Circuit Pattern	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	Wire Wrap Terminals	Wire Wrap Socket Pins
4610	6.50	4.50	0.125	56	0.062	0.042	20	CEM-1 Epoxy Glass Composite	3-Hole Solder Pad	R656-1	R656	3690-16	Series 13	T125, T126	R32
4610-1	6.50	4.50	0.125	56	0.062	0.042	59	CEM-1 Epoxy Glass Composite	Contacts Only	R656-1	R656	3690-16	Series 13	T125, T126	R32
4610-2	6.50	4.50	0.125	56	0.062	0.042	35	CEM-1 Epoxy Glass Composite	Interleaved Buses	R656-1	R656	3690-16	Series 13	T125, T126	R32
4610-3	6.50	4.50	0.125	56	0.062	0.042	52	FR4 Epoxy Glass	Pad-Per-Hole	R656-1	R656	3690-16	Series 13	T125, T126	R32



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## 72 Contacts

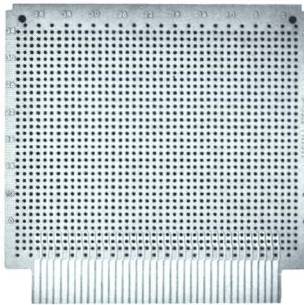
# VECTORBORD®

General Purpose

### 4.5" x 4.5"

#### 3719-5: Contacts Only

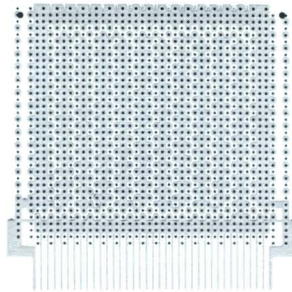
- 0.042" diameter holes on 0.1" grid
- Unrestricted component placement over entire board surface
- Convenient, easy-to-read hole marking legend on board surface
- Capacity for mounting 30, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



### 4.5" x 4.5"

#### 4066-5: Ground Plane/ Interleaved Buses

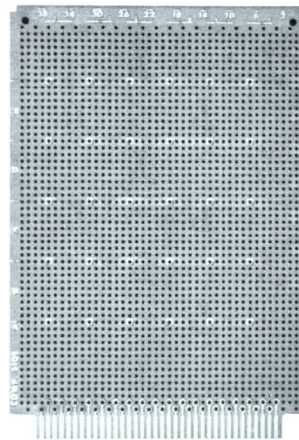
- 0.042" diameter holes on 0.1" grid
- 0.085" etched clearance area around each hole on ground plane side
- Overall ground plane on wiring side; etched zig-zag buses on component side provide three bus lines for ECL logic
- Bus and plane surfaces solder-coated for user convenience
- Capacity for mounting 18, 16-pin DIP IC devices
- Accommodates any component with 0.3", 0.6", or 0.9" lead spacing
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- To commit Wire Wrap pins to ground planes, use Vector T124 solder washers, available separately



### 4.5" x 6.5"

#### 3719-1: Contacts Only

- 0.042" diameter holes on 0.1" grid
- Unrestricted component placement over entire board surface
- Capacity for mounting 50, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately

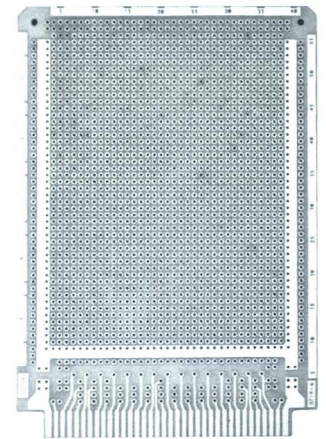


### 4.5" x 6.5"

#### 3719-6: Pad-Per-Hole

*With Precision-Drilled,  
Plated-Thru Holes*

- 0.042" diameter holes on 0.1" grid
- 0.080" diameter, isolated solder pad around holes, both sides
- Low resistance, etched peripheral bus pattern
- Pad and bus surfaces solder-coated for user convenience
- Capacity for mounting 40, 16-pin DIP IC devices
- Convenient, easy-to-read hole marking legend on board surface
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



Part No.	Width	Height	Contacts Spacing	Thick Number	Hole Dia.	16-Pin DIP Capacity	Material	Circuit Pattern	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	Wire Wrap Terminals	Wire Wrap Socket Pins
3719-5	4.50	4.50	0.100	72	0.062	0.042	30 CEM-1 Epoxy Glass Composite	Contacts Only	R636-2	R636-1	3690-4	Series 12	T125, T126	R32
4066-5	4.50	4.50	0.100	72	0.062	0.042	18 CEM-1 Epoxy Glass Composite	Ground Plane/Interleaved Buses	R636-2	R636-1	3690-4	Series 12	T125, T126	R32
3719-1	6.50	4.50	0.100	72	0.062	0.042	50 CEM-1 Epoxy Glass Composite	Contacts Only	R636-2	R636-1	3690-4	Series 13	T125, T126	R32
3719-6	6.50	4.50	0.100	72	0.062	0.042	40 FR4 Epoxy Glass	Pad-Per-Hole	R636-2	R636-1	3690-4	Series 13	T125, T126	R32



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# Plugbord™ Prototyping Boards, General Purpose

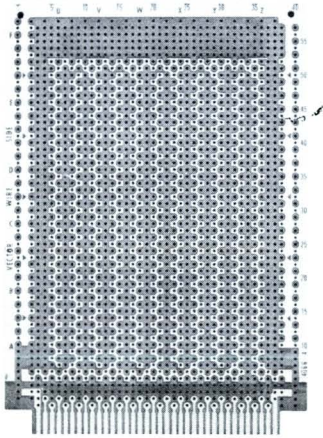
## 72 Contacts

VECTORBORD®

### 4.5" x 6.5"

#### 4066-4: Ground Plane/ Interleaved Buses

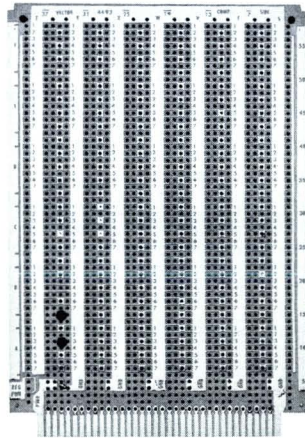
- 0.042" diameter holes on 0.1" grid
- Overall ground plane on wiring side; etched, interleaved zig-zag bus pattern on component side provides three bus lines for ECL logic
- 0.085" etched clearance area around each hole on ground plane side
- Bus and plane surfaces solder-coated for user convenience
- Capacity for mounting 34, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- To commit Wire Wrap pins to ground planes, use Vector T124 solder washers, available separately



### 4.5" x 6.5"

#### 4493: Voltage/Ground Plane

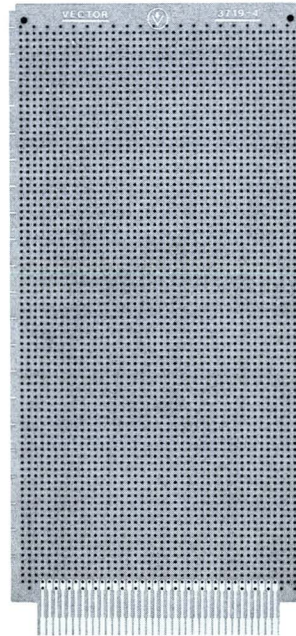
- 0.042" diameter holes on 0.1" grid
- Voltage/ground planes on opposite board sides
- 0.085" diameter clearance areas around holes, both sides
- Plane surfaces solder-coated for user convenience
- Circuit pattern provides for mounting of DIP IC or other devices with leads on 0.3", 0.4", 0.6" or 0.9" centers and for combining with other discrete components
- Capacity for mounting 42, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- To commit Wire Wrap pins to voltage and ground planes, use Vector T124 solder washers, available separately



### 4.5" by 9.6"

#### 3719-4: Contacts Only

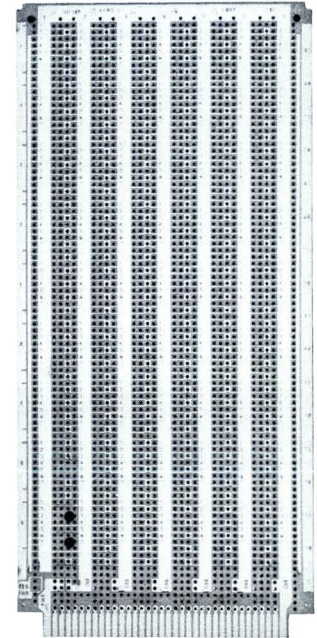
- 0.042" diameter holes on 0.1" grid
- Unrestricted component placement over entire board surface
- Capacity for mounting 90, 16-pin DIP IC devices
- Convenient, easy-to-read hole marking legend provided
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



### 4.5" by 9.6"

#### 4493-1: Voltage/Ground Plane

- 0.042" diameter holes on 0.1" grid
- Voltage/ground planes on opposite board sides
- 0.085" diameter clearance areas around holes, both sides
- Plane surfaces solder-coated for user convenience
- Capacity for mounting 63, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- To commit Wire Wrap pins to voltage and ground planes, use Vector T124 solder washers, available separately



Part No.	Width	Height	Contacts Spacing	Thick Number	Hole Dia.	16-Pin DIP Capacity	Material	Circuit Pattern	Solder Connector	Wire Wrap Connector	Wire Wrap Extender	Recommended Card Cage	Wire Wrap Terminals	Wire Wrap Socket Pins
4066-4	6.50	4.50	0.100	72	0.062	0.042	34 CEM-1 Epoxy Glass Composite	Ground Plane/Interleaved Buses	R636-2	R636-1	3690-4	Series 13	T125, T126	R32
4493	6.50	4.50	0.100	72	0.062	0.042	42 CEM-1 Epoxy Glass Composite	Voltage/Ground Planes	R636-2	R636-1	3690-4	Series 13	T125, T126	R32
3719-4	9.60	4.50	0.100	72	0.062	0.042	90 CEM-1 Epoxy Glass Composite	Contacts Only	R636-2	R636-1	3690-2	Series 14	T125, T126	R32
4493-1	9.60	4.50	0.100	72	0.062	0.042	63 CEM-1 Epoxy Glass Composite	Voltage/Ground Planes	R636-2	R636-1	3690-2	Series 14	T125, T126	R32

**VECTOR**  
ELECTRONIC COMPANY

12460 Gladstone Ave., Sylmar, CA 91342 Phone (818) 365-9661 Fax (818) 365-5718  
Inside CA (800) 426-4652 Outside CA (800) 423-5659

# Plugbord™ Prototyping Boards, General Purpose 80 Contacts

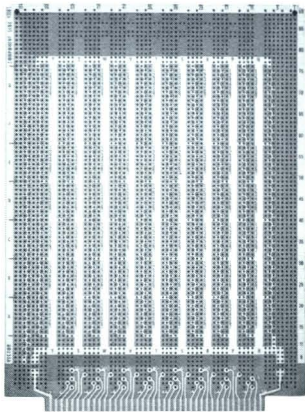
VECTORBORD®

General Purpose

## 7.0" x 9.6"

### 4350: Zig-Zag Buses

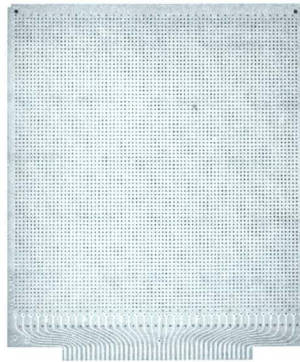
- 0.042" diameter holes on 0.1" grid
- 0.085" diameter clearance area around holes, both sides
- Voltage and ground buses on opposite board sides, solder-coated for user convenience
- Zig-zag buses: pins, terminals, or wires contact either voltage or ground at each hole
- Unclad, punched area for I/O connectors, test points and other devices
- Mount decoupling capacitors at any DIP position
- Capacity for mounting 63, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- To commit Wire Wrap pins to voltage and ground planes, use Vector T124 solder washers, available separately



## 8.0" x 9.6"

### 3673: Contacts Only

- 0.042" diameter holes on 0.1" grid
- Ideal size for applications requiring high component densities
- Unrestricted component placement over entire board surface
- Capacity for mounting 152, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



Part No.	Width	Height	Contacts Spacing	Thick Num-ber	Hole Dia.	16-Pin DIP Capacity	Material	Circuit Pattern	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	Wire Wrap Terminals	Wire Wrap Socket Pins
4350	9.60	7.00	0.125	80	0.062	63	CEM-1 Epoxy Glass Composite	Voltage/Ground Planes	R680-2	R680-1	3690-14	Series17	T125, T126	R32
3673	9.60	8.00	0.125	80	0.062	152	FR4 Epoxy Glass	Contacts Only	R680-2	R680	3690-14	Series17	T125, T126	R32



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# Plugbord™ Prototyping Boards, General Purpose

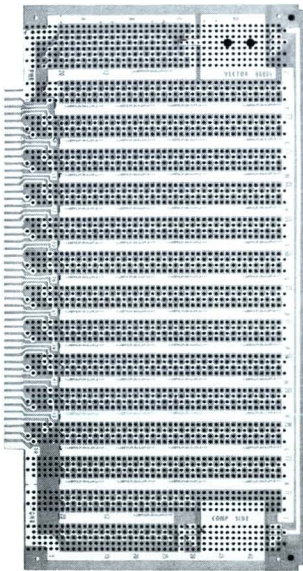
## 100 Contacts

VECTORBORD®

### 10.0" x 5.3"

#### 8800V: Voltage/Ground Planes

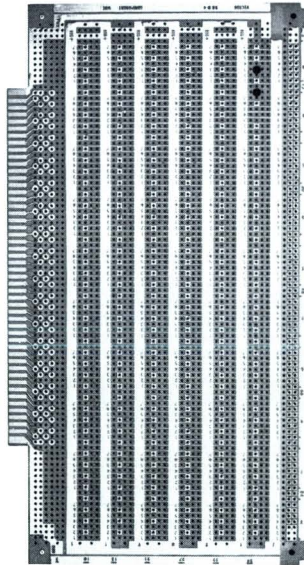
- 0.042" diameter holes on 0.1" grid
- 0.085" diameter clearance area around holes, both sides
- Full voltage and ground planes on opposite board sides
- Mounting holes for heat sink and voltage regulator provided
- Designed to S100 (IEEE 696 ) specifications
- Capacity for mounting 52, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- To commit Wire Wrap pins to voltage and ground planes, use Vector T124 solder washers, available separately



### 10.0" x 5.3"

#### 8804: Voltage/Ground Plane

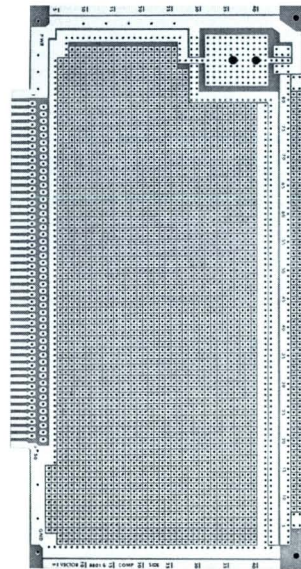
- 0.042" diameter holes on 0.1" grid
- 0.085" diameter clearance area around holes, both sides
- Full voltage and ground planes on opposite board sides
- Mounting holes for heat sink and voltage regulator provided
- Two rows of pads for ribbon wire I/O connectors
- Designed to S100 (IEEE 696 ) specifications
- Capacity for mounting 70, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- To commit Wire Wrap pins to voltage and ground planes, use Vector T124 solder washers, available separately



### 10.0" x 5.3"

#### 8801-6: Pad-Per-Hole

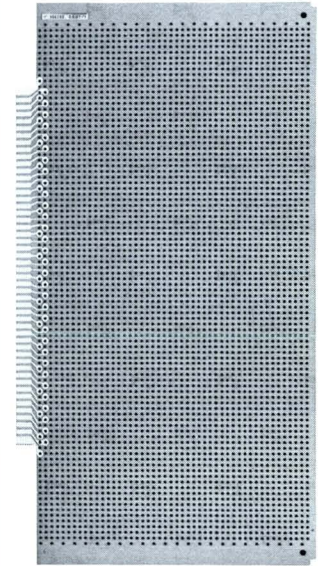
- 0.042" diameter holes on 0.1" grid
- Square solder pads around holes, both sides
- Capacity for mounting 80, 16-pin DIP IC devices
- Two rows of pads for ribbon wire I/O connectors
- Mounting holes for heat sink and voltage regulator provided
- Designed to S100 (IEEE 696 ) specifications
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



### 10.0" x 5.3"

#### 8801-1: Contacts Only

- 0.042" diameter holes on 0.1" grid
- Unrestricted component placement over entire board surface
- Mounts 100, 16-pin DIP IC devices
- Designed to S100 (IEEE 696 ) specifications
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately



Part No.	Width	Height	Contacts Spacing	Contacts Number	Thick	Hole Dia.	16-Pin DIP Capacity	Material	Circuit Pattern	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	Wire Wrap Terminals	Wire Wrap Socket Pins
8800V	5.30	10.00	0.125	100	0.062	0.042	52	FR4 Epoxy Glass	Voltage/Ground Planes	R681-3	R681-1, -2	3690-12	Series 100	T125, T126	R32
8804	5.30	10.00	0.125	100	0.062	0.042	70	CEM-1 Epoxy Glass Composite	Voltage/Ground Planes	R681-3	R681-1, -2	3690-12	Series 100	T125, T126	R32
8801-6	5.30	10.00	0.125	100	0.062	0.042	80	FR4 Epoxy Glass	Pad-Per-Hole	R681-3	R681-1, -2	3690-12	Series 100	T125, T126	R32
8801-1	5.30	10.00	0.125	100	0.062	0.042	80	CEM-1 Epoxy Glass Composite	Contacts Only	R681-3	R681-1, -2	3690-12	Series 100	T125, T126	R32

## Vectorbord® Metric Prototyping Boards—Available In Vectorbord® and Multilayer Vectorbord plus™ Patterns

Vectorbord Metric Prototyping® Boards feature precision-drilled holes and FR4 Epoxy Glass construction. Compatible with VME, Multibus II, Futurebus, and most common DIN-based applications; available in a wide range of sizes and circuit patterns.

Common features include:

- 0.042" or 0.055" diameter holes on 0.1" grids
- I/O areas for ribbon cable and other connectors
- Pin coordinate legends on board surfaces identify columns, rows, and connector assignments
- Bus connector areas for 96-pin DIN connectors
- Can be used for solder or Wire Wrap applications
- Solder and Wire Wrap terminals, card ejectors, and eyelets available separately
- Layout paper and instruction sheets included

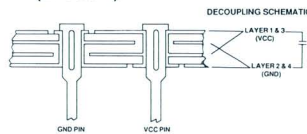
## Multilayer Vectorbord plus™ Metric Prototyping Boards

High-performance, multilayer design—an innovative approach to prototyping and small production runs. Multilayer Vectorbord plus™ boards are 0.125" thick with 0.062" milled edges and feature 0.055" diameter holes, precision-drilled, on 0.1" grid. 0.042" plated-thru holes at V/G locations. All holes are "on grid" to facilitate automated soldering, wiring, component placement, and other CAE/CAM applications. Large PGA and DIP mounting areas accommodate devices in most popular sizes.

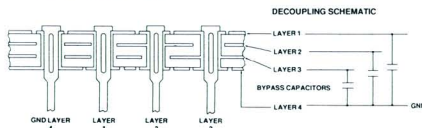
Factory-installed SMD decoupling capacitors of alternating values provide superior noise reduction; mounted on component side beneath DIP positions for unrestricted component placement and wiring.

Two versions available:

- Vectorbord plus™ Standard boards, for high-speed Schottky applications, provide redundant voltage and ground planes (2 each)



- Vectorbord plus™ Universal boards feature four uncommitted layers for superior performance for ECL logic and other applications requiring multiple power planes, or can be interconnected for Schottky applications



Vectorbord plus™ boards are supported by a complete line of prototyping and packaging products, including terminals and pins, backplanes, extenders, card cages, and system enclosures

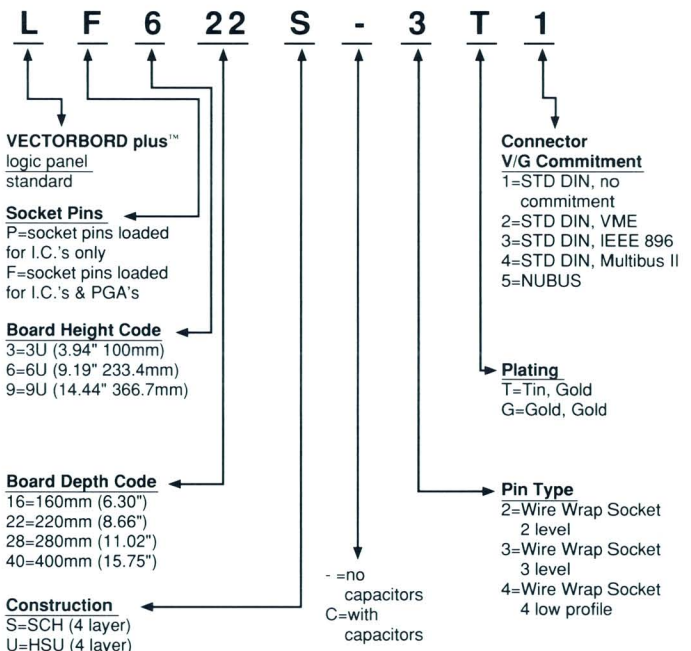
## Ordering Options For Special Requirements

Vectorbord plus™ boards are available in various configurations, on special order, to meet specialized needs. See the Ordering Table for information on special configurations. Available options include:

- Low profile socket pins for Stitch Wire applications
- Two or three level Wire Wrap socket pins

- Socket pins and SMD decoupling caps selectively loaded per user specifications
- Gold-plated socket pins
- Protective wiring shields installed
- Connectors committed to specified bus architectures

## ORDERING INFORMATION



## Logic Panel Sizes

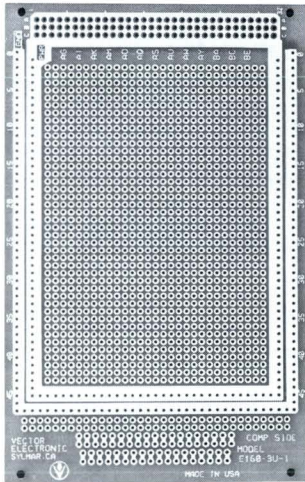
100mm (3.94")	233.4mm (9.19")	366.8mm (14.44")	
			400mm (15.75")
SINGLE FUTUREBUS	DUAL FUTUREBUS	TRIPLE IEEE 896 FUTUREBUS NUBUS	280mm (11.02")
SINGLE MULTIBUS II	DUAL MULTIBUS II		220mm (8.66")
SINGLE VME G-64 G-96	DUAL VME		160mm (6.30")

## 3U x 160MM

### E160-3U-1: Pad-Per-Hole

*With Precision-Drilled,  
Plated-Thru Holes*

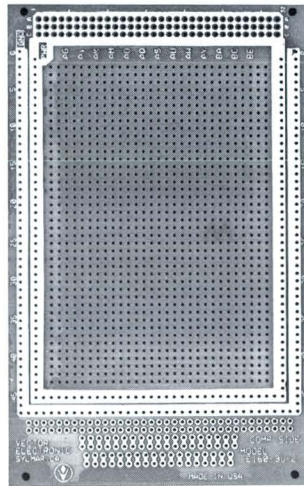
- 0.042" diameter holes on 0.1" grid with 0.080" diameter, isolated solder pad around each hole, both sides
- For solder, Wire Wrap, or mixed wiring methods
- Voltage and ground buses around board perimeter, both sides
- All pad and bus surfaces solder-coated for user convenience
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Capacity for mounting 35, 16-pin DIP IC devices; also accepts PGA and PLCC devices



## 3U x 160MM

### E160-3U-2: Peripheral Buses

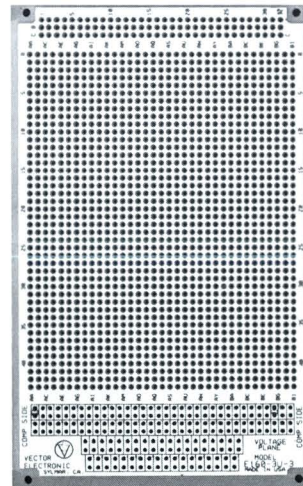
- 0.042" diameter precision-drilled holes on 0.1" grid
- Voltage and ground buses around board perimeter, both sides
- All bus surfaces solder-coated for user convenience
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- 29 x 41 grid unrestricted component placement area
- Capacity for mounting 35, 16-pin DIP IC devices; also accepts PGA and PLCC devices



## 3U x 160MM

### E160-3U-3: Voltage/Ground Plane

- 0.055" diameter precision-drilled holes with 0.085" diameter clearance areas around each hole, both sides
- Overall voltage and ground planes on opposite board sides provide excellent shielding and power and ground distribution
- Plane surfaces solder-coated
- Capacity for mounting 45, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part Nos. R52 and R53, available separately
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- To simulate plated-thru holes committed to voltage or ground planes, use Vector T123 eyelets, available separately (for use without pins)

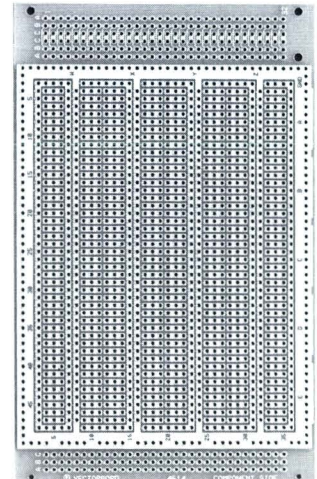


## 3U x 160MM

### 4614: 3-Hole Solder Pads

*With Precision-Drilled,  
Plated-Thru Holes*

- 0.042" diameter holes on 0.1" grid
- 3-hole solder pads (0.28" x 0.080") for interconnecting multiple component leads
- Interleaved buses on both sides, back-to-back
- Bus and pad surfaces solder-coated for user convenience
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Capacity for mounting 20, 16-pin DIP IC devices



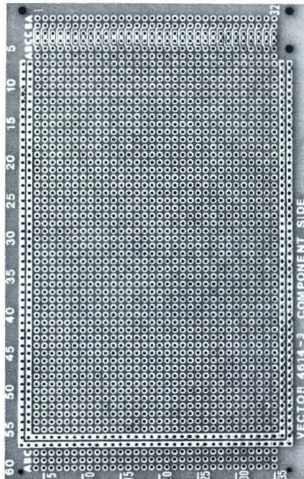
Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	96-Pin DIN Connector	Recommended Card Cage	Terminals	Wire Wrap Socket Pins
E160-3U-1	6.3	3.94	0.042	35	FR4 Epoxy Glass	RE96MWR	CCK160-3U	T125, T126	R32
E160-3U-2	6.3	3.94	0.042	35	FR4 Epoxy Glass	RE96MWR	CCK160-3U	T125, T126	R32
E160-3U-3	6.3	3.94	0.055	45	FR4 Epoxy Glass	RE96MWR	CCK160-3U	-	R50, R51, R52, R53
4614	6.3	3.94	0.042	20	FR4 Epoxy Glass	RE96MWR	CCK160-3U	T125, T126	R32

## 3U x 160MM

### 4614-3: Pad-Per-Hole

*With Precision-Drilled,  
Plated-Thru Holes*

- 0.042" diameter holes on 0.1" grid with 0.080" diameter, isolated solder pad around each hole, both sides
- Voltage and ground buses around board perimeter on both sides, back-to-back
- All pad and bus surfaces solder-coated for user convenience
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Capacity for mounting 40, 16-pin DIP IC devices; also accepts PGA and PLCC devices

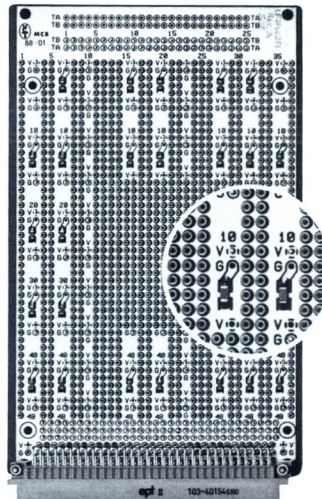


## 3U x 160MM

### LF316UC3T1: Vectorbord plus™, Universal Version

*High-Speed, Multilayer  
Wire Wrap Board With  
Socket Pins*

- 0.055" diameter precision-drilled holes on 0.1" grid
- Factory-installed, precision socket pins with gold contacts—four finger pins in DIP IC mounting areas and six finger pins (low insertion force) in PGA mounting areas
- Factory-installed SMD caps (49) of alternating values provide excellent noise reduction; mounted on component side beneath DIP positions for unrestricted component placement and wiring
- 20 x 20 hole PGA grid accommodates PGA and PLCC devices
- Capacity for mounting 49, 16-pin DIP IC devices; 12 additional DIPS can be mounted in PGA area
- Pin coordinate legend on board surface facilitates location and designation of wiring, components, and test fixtures
- I/O connector mounting area for ribbon cable connectors
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- Universal version: four uncommitted copper layers provide for multiple power planes, can be interconnected for Schottky applications



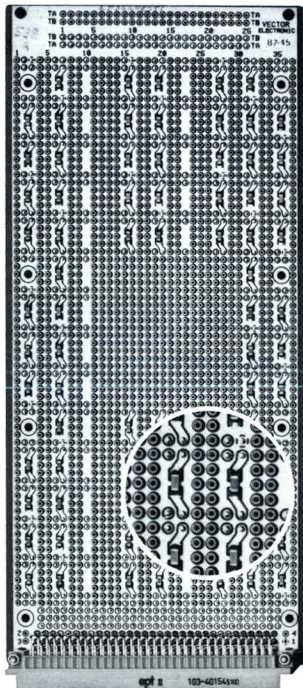
Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	96-Pin DIN Connector	Recommended Card Cage	Terminals	Wire Wrap	Socket Pins
4614-2	6.3	3.94	0.042	30	FR4 Epoxy Glass	RE96MWR	CCK160-3U	T125, T126		R32
4614-3	6.3	3.94	0.042	40	FR4 Epoxy Glass	RE96MWR	CCK160-3U	T125, T126		R32
LF316UC3T1	6.3	3.94	0.055	49	FR4 Epoxy Glass	Installed	CCK160-3U	Installed		Installed

**3U x 220MM**

**LF322SC3T1:  
Vectorbord plus™,  
Standard Version**

*High-Speed, Multilayer  
Wire Wrap Board With  
Socket Pins*

- 0.055" diameter precision-drilled holes on 0.1" grid
- Factory-installed precision socket pins with gold contacts—four finger pins in DIP IC mounting areas and six finger pins (low insertion force) in PGA mounting areas
- Factory-installed SMD caps (40 for Standard, 80 for Universal) of alternating values provide excellent noise reduction; mounted on component side beneath DIP positions for unrestricted component placement and wiring
- 20 x 20 hole PGA grid accommodates PGA and PLCC devices
- Capacity for mounting 81, 16-pin DIP IC devices; 12 additional DIPS can be mounted in PGA area
- Pin coordinate legend on board surface facilitates location and designation of wiring, components, and test fixtures
- I/O connector mounting area for ribbon cable connectors
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- Standard version: with redundant, copper power and ground layers for Schottky and other high-speed applications



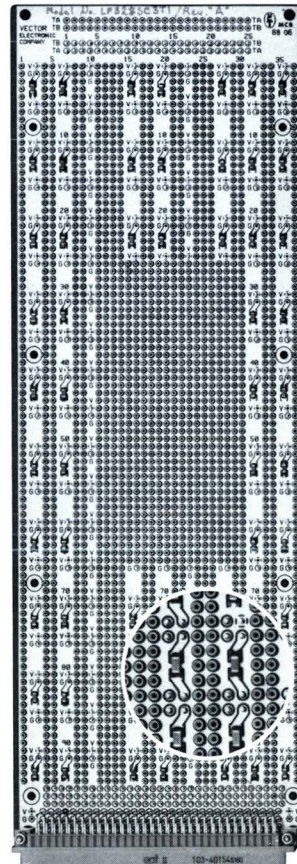
**3U x 280MM**

**LF328SC3T1:  
Vectorbord plus™,  
Standard Version**

**LF328UC3T1:  
Vectorbord plus™,  
Universal Version**

*High-Speed, Multilayer  
Wire Wrap Boards With  
Socket Pins*

- 0.055" diameter precision-drilled holes on 0.1" grid
- Factory-installed precision socket pins with gold contacts—four finger pins in DIP IC mounting areas and six finger pins (low insertion force) in PGA mounting area
- 20 x 40 hole PGA grid accommodates PGA and PLCC devices
- Factory-installed SMD caps (58 for Standard, 100 for Universal) of alternating values provide excellent noise reduction; mounted on component side beneath DIP positions for unrestricted component placement and wiring.
- Capacity for mounting 100, 16-pin DIP IC devices; 25 additional DIPS can be mounted in PGA area
- Pin coordinate legend on board surface facilitates location and designation of wiring, components, and test fixtures
- I/O connector mounting area for ribbon cable connectors
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- Standard version: with redundant, copper power and ground layers for Schottky and other high-speed applications
- Universal version: four uncommitted copper layers provide for multiple power planes, can be interconnected for Schottky applications



Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	96-Pin DIN Connector	Recommended Card Cage	Terminals	Wire Wrap Socket Pins
LF322SC3T1	8.66	3.94	0.055	81	FR4 Epoxy Glass	Installed	CCK220-3U	Installed	Installed
LF328SC3T1	11.02	3.94	0.055	100	FR4 Epoxy Glass	Installed	CCK280-6U	Installed	Installed
LF328UC3T1	11.02	3.94	0.055	100	FR4 Epoxy Glass	Installed	CCK280-6U	Installed	Installed



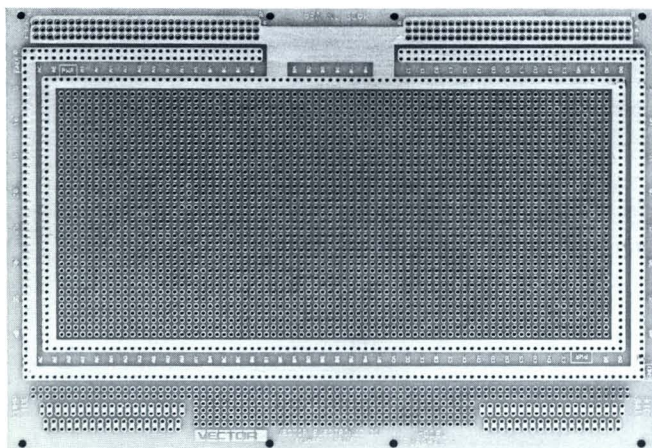
## 6U x 160MM

### E160-6U-1: Pad-Per-Hole

*With Precision-Drilled,  
Plated-Thru Holes*

- 0.042" diameter precision-drilled holes on 0.1" grid
- 0.080" diameter, isolated solder pad around each hole, both sides
- Voltage and ground buses around board perimeter, both sides

- Pad and bus surfaces solder-coated for user convenience
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Capacity for mounting 100, 16-pin DIP IC devices; also accepts PGA and PLCC devices

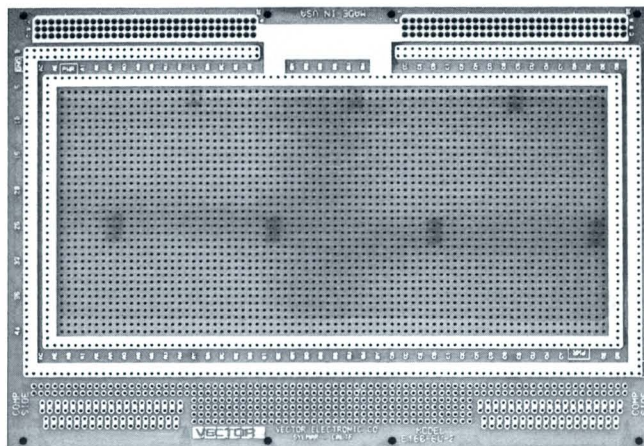


## 6U x 160MM

### E160-6U-2: Peripheral Buses

- 0.042" diameter precision-drilled holes on 0.1" grid
- Voltage and ground buses around board perimeter, both sides
- Bus surfaces solder-coated for user convenience

- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- 42 x 77 grid unrestricted component placement area
- Capacity for mounting 100, 16-pin DIP IC devices; also accepts PGA and PLCC devices

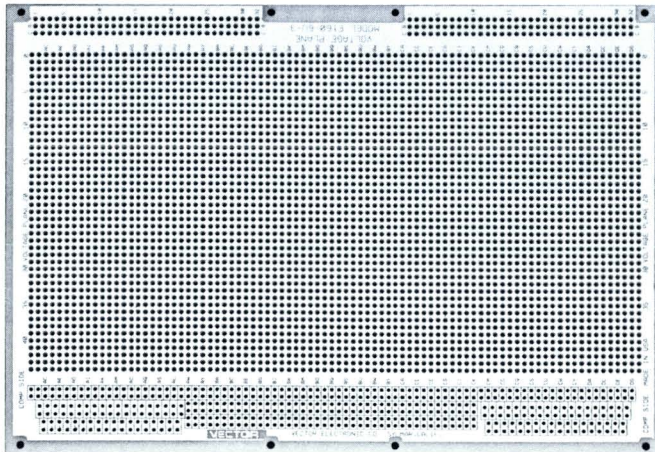


Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	96-Pin DIN Connector	Recommended Card Cage	Terminals	Wire Wrap Socket Pins
E160-6U-1	6.3	9.19	0.042	100	FR4 Epoxy Glass	RE96MWR	CCK160-6U	T125, T126	R32
E160-6U-2	6.3	9.19	0.042	100	FR4 Epoxy Glass	RE96MWR	CCK160-6U	T125, T126	R32

## 6U x 160MM

### E160-6U-3: Voltage/Ground Plane

- 0.055" diameter precision-drilled holes with 0.085" diameter clearance areas around each hole, both sides
- Overall voltage and ground planes on opposite board sides provide excellent shielding and power distribution
- Plane surfaces solder-coated for user convenience
- Capacity for mounting 105, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part Nos. R52 and R53, available separately
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- To simulate plated-thru holes committed to voltage or ground planes, use Vector T123 eyelets, available separately (for use without pins)

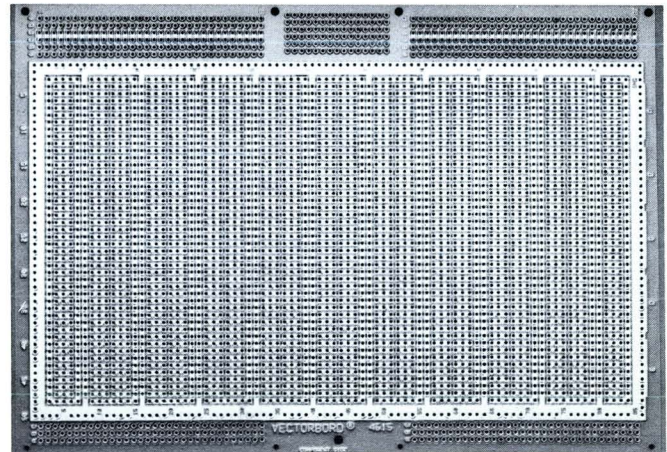


## 6U x 160MM

### 4615: 3-Hole Solder Pad

#### With Precision-Drilled, Plated-Thru Holes

- 0.042" diameter precision-drilled holes on 0.1" grid
- 3-hole solder pads (0.28" x 0.080") for interconnecting multiple component leads
- Interleaved buses on both sides, back-to-back
- Bus and pad surfaces solder-coated for user convenience
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Capacity for mounting 50, 16-pin DIP IC devices



Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	96-Pin DIN Connector	Recommended Card Cage	Terminals	Wire Wrap Socket Pins
E160-6U-3	6.3	9.19	0.055	105	FR4 Epoxy Glass	RE96MWR	CCK160-6U	-	R50,R51,R52,R53
4615	6.3	9.19	0.042	50	FR4 Epoxy Glass	RE96MWR	CCK160-6U	T125,T126	R32

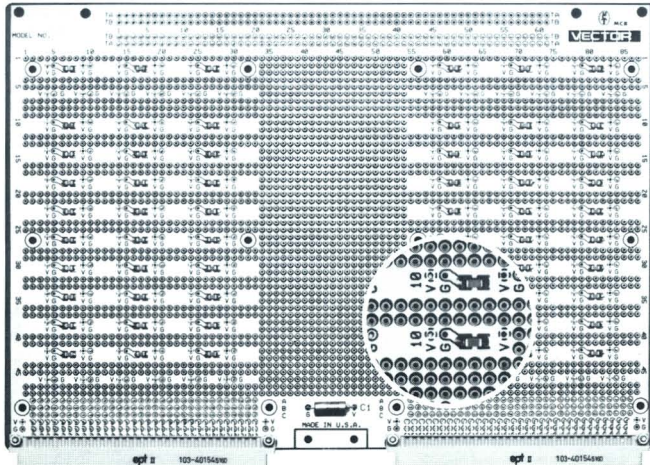
## 6U x 160MM

**LF616SC3T1:**  
Vectorbord plus™,  
Standard Version

**LF616UC3T1:**  
Vectorbord plus™,  
Universal Version

*High-Speed, Multilayer  
Wire Wrap Boards With  
Socket Pins*

- 0.055" diameter precision-drilled holes on 0.1" grid
- Factory-installed precision socket pins with gold contacts—four finger pins in DIP IC mounting areas and six finger pins (low insertion force) in PGA mounting area
- Factory-installed SMD caps (60 for Standard, 116 for Universal) of alternating values provide excellent noise reduction; mounted on component side beneath DIP positions for unrestricted component placement and wiring
- 21 x 48 hole PGA grid accommodates PGA and PLCC devices
- Capacity for mounting 120, 16-pin DIP IC devices; 30 additional DIPS can be mounted in PGA area
- Pin coordinate legend on board surface facilitates location and designation of wiring, components, and test fixtures
- I/O Connector mounting area for ribbon cable connectors
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- Standard version: with redundant, copper power and ground layers for Schottky and other high-speed applications
- Universal version: four uncommitted copper layers provide for multiple power planes, can be interconnected for Schottky applications

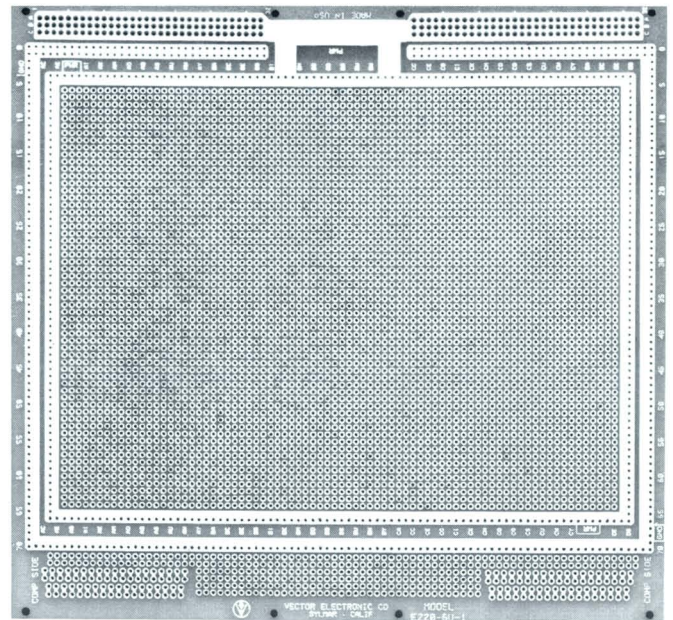


## 6U x 220MM

**E220-6U-1:**  
Pad-Per-Hole

*With Precision-Drilled,  
Plated-Thru Holes*

- 0.042" diameter precision-drilled holes on 0.1" grid
- 0.080" diameter, isolated solder pad around each hole, both sides
- Voltage and ground buses around board perimeter, both sides
- Pad and bus surfaces solder-coated for user convenience
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Capacity for mounting 140, 16-pin DIP IC devices; also accepts PGA and PLCC devices



Eurocards

Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	96-Pin DIN Connector	Recommended Card Cage	Terminals	Wire Wrap Socket Pins
LF616SC3T1	6.3	9.19	0.055	120	FR4 Epoxy Glass	Installed	CCK160-6U	Installed	Installed
LF616UC3T1	6.3	9.19	0.055	120	FR4 Epoxy Glass	Installed	CCK160-6U	Installed	Installed
E220-6U-1	8.66	9.19	0.042	140	FR4 Epoxy Glass	RE96MWR	CCK220-6U	T125, T126	R32

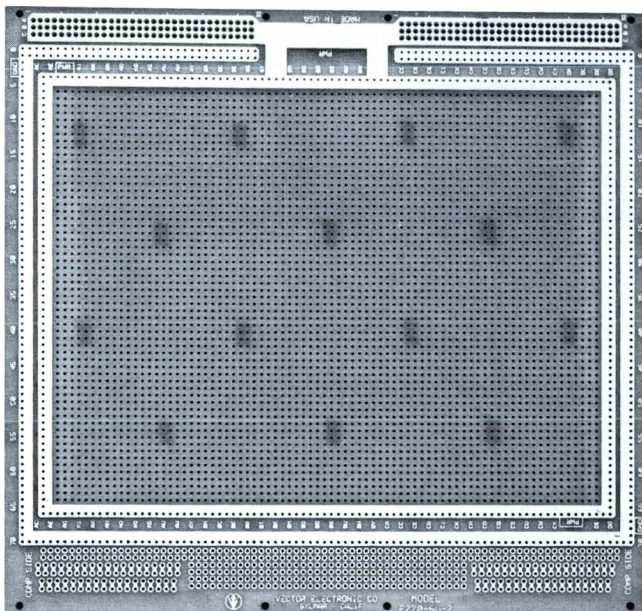


12460 Gladstone Ave., Sylmar, CA 91342 Phone (818) 365-9661 Fax (818) 365-5718  
Inside CA (800) 426-4652 Outside CA (800) 423-5659

## 6U x 220MM

### E220-6U-2: Peripheral Buses

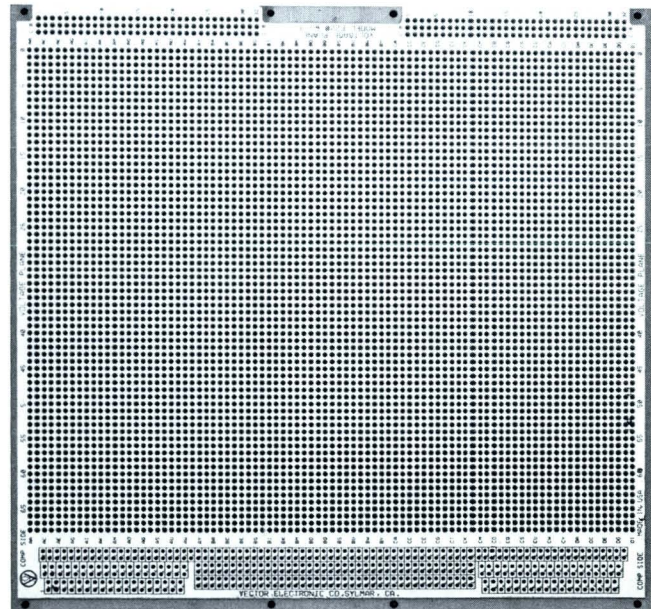
- 0.042" diameter precision-drilled holes on 0.1" grid
- Voltage and ground buses around board perimeter, both sides
- Bus surfaces solder-coated for user convenience
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- 58 x 78 grid unrestricted component placement area
- Capacity for mounting 140, 16-pin DIP IC devices; also accepts PGA and PLCC devices



## 6U x 220MM

### E220-6U-3: Voltage/Ground Plane

- 0.055" diameter precision-drilled holes with 0.085" diameter clearance areas around each hole, both sides
- Overall voltage and ground planes on opposite board sides provide excellent shielding and power distribution
- Plane surfaces solder-coated for user convenience
- Capacity for mounting 168, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part Nos. R52 and R53, available separately
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- To simulate plated-through holes committed to voltage or ground planes, use Vector T123 eyelets, available separately (for use without pins)



Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	96-Pin DIN Connector	Recommended Card Cage	Terminals	Wire Wrap Socket Pins
E220-6U-2	8.66	9.19	0.042	140	FR4 Epoxy Glass	RE96MWR	CCK220-6U	T125, T126	R32
E220-6U-3	8.66	9.19	0.055	168	FR4 Epoxy Glass	RE96MWR	CCK220-6U		R50, R51, R52, R53

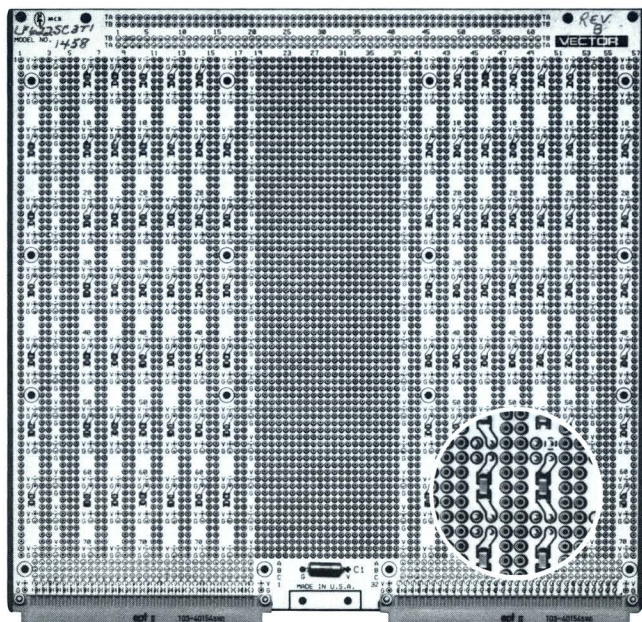
## 6U X 220MM

### LF622SC3T1: Vectorbord plus™, Standard Version

### LF622UC3T1: Vectorbord plus™, Universal Version

*High-Speed, Multilayer  
Wire Wrap Boards With  
Socket Pins*

- 0.055" diameter precision-drilled holes on 0.1" grid
- Factory-installed precision socket pins with gold contacts—four finger pins in DIP IC mounting areas and six finger pins (low insertion force) in PGA mounting areas
- Factory-installed SMD caps (94 for Standard, 184 for Universal) of alternating values provide excellent noise reduction; mounted on component side beneath DIP positions for unrestricted component placement and wiring
- 21 x 72 hole PGA grid accommodates PGA and PLCC devices
- Pin coordinate legend on board surface facilitates location and designation of wiring, components, and test fixtures
- I/O Connector mounting area for ribbon cable connectors
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- Standard version: with redundant, copper power and ground layers for Schottky and other high-speed applications
- Universal version: four uncommitted copper layers provide for multiple power planes, can be interconnected for Schottky applications



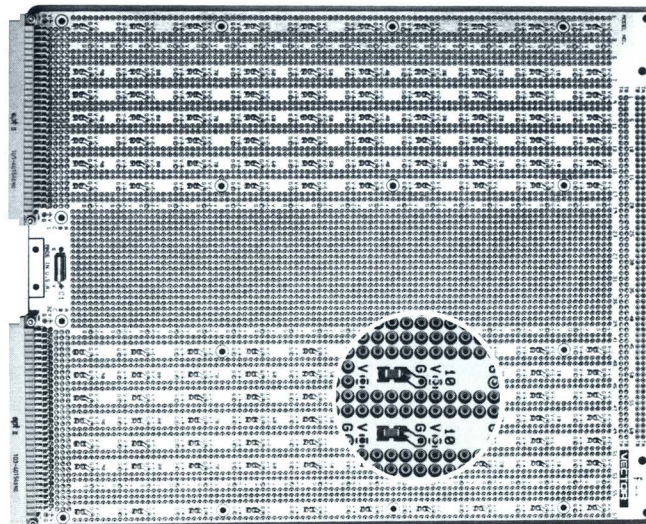
## 6U x 280MM

### LF628SC3T1: Vectorbord plus™, Standard Version

### LF628UC3T1: Vectorbord plus™, Universal Version

*High-Speed, Multilayer  
Wire Wrap Boards With  
Socket Pins*

- 0.055" diameter precision-drilled holes on 0.1" grid
- Factory-installed precision socket pins with gold contacts—four finger pins in DIP IC mounting areas and six finger pins (low insertion force) in PGA mounting areas
- Factory-installed SMD caps (126 for Standard, 240 for Universal) of alternating values provide excellent noise reduction; mounted on component side beneath DIP positions for unrestricted component placement and wiring
- 21 x 95 hole PGA grid accommodates PGA and PLCC devices
- Capacity for mounting 242, 16-pin DIP IC devices; 55 additional DIPs can be mounted in PGA area
- Pin coordinate legend on board surface facilitates location and designation of wiring, components, and test fixtures
- I/O Connector mounting area for ribbon cable connectors
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- Standard version: with redundant, copper power and ground layers for Schottky and other high-speed applications
- Universal version: four uncommitted copper layers provide for multiple power planes, can be interconnected for Schottky applications



Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	96-Pin DIN Connector	Recommended Card Cage	Terminals	Wire Wrap	Socket Pins
LF622SC3T1	8.66	9.19	0.055	198	FR4 Epoxy Glass	Installed	CCK220-6U	Installed	Installed	Installed
LF622UC3T1	8.66	9.19	0.055	198	FR4 Epoxy Glass	Installed	CCK220-6U	Installed	Installed	Installed
LF628SC3T1	11.02	9.19	0.055	242	FR4 Epoxy Glass	Installed	CCK280-6U	Installed	Installed	Installed
LF628UC3T1	11.02	9.19	0.055	242	FR4 Epoxy Glass	Installed	CCK280-6U	Installed	Installed	Installed

## 6U x 400MM

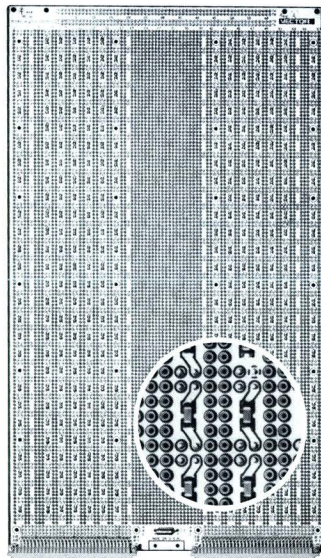
**LF640SC3T1:**  
Vectorbord plus™,  
Standard Version

**LF640UC3T1:**  
Vectorbord plus™,  
Universal Version

*High-Speed, Multilayer  
Wire Wrap Boards With  
Socket Pins*

- 0.055" diameter precision-drilled holes on 0.1" grid
- Factory-installed precision socket pins with gold contacts—four finger pins in DIP IC mounting areas and six finger pins (low insertion force) in PGA mounting area
- Factory-installed SMD caps (184 for Standard, 368 for Universal) of alternating values provide excellent noise reduction; mounted on component side beneath DIP positions for unrestricted component placement and wiring
- 21 x 143 hole PGA grid accommodates PGA and PLCC devices

- Capacity for mounting 374, 16-pin DIP IC devices; 85 additional DIPs can be mounted in PGA area
- Pin coordinate legend on board surface facilitates location and designation of wiring, components, and test fixtures
- I/O Connector mounting area for ribbon cable connectors
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- Standard version: with redundant, copper power and ground layers for Schottky and other high-speed applications
- Universal version: four uncommitted copper layers provide for multiple power planes, can be interconnected for Schottky applications



## 9U x 220MM

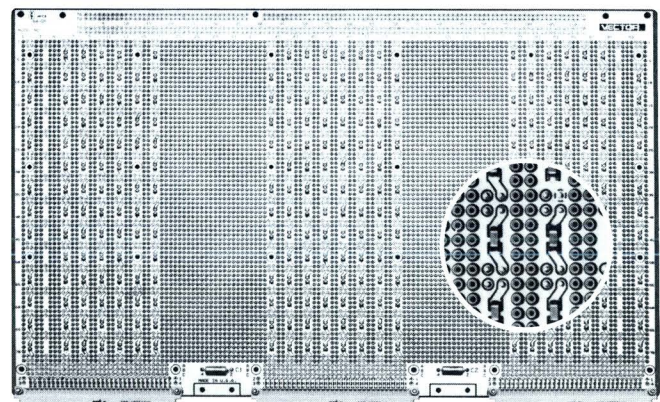
**LF922SC3T1:**  
Vectorbord plus™,  
Standard Version

**LF922UC3T1:**  
Vectorbord plus™,  
Universal Version

*High-Speed, Multilayer  
Wire Wrap Boards With  
Socket Pins*

- 0.055" diameter precision-drilled holes on 0.1" grid
- Factory-installed precision socket pins with gold contacts—four finger pins in DIP IC mounting areas and six finger pins (low insertion force) in PGA mounting areas
- Factory-installed SMD caps (148 for Standard, 280 for Universal) of alternating values provide excellent noise reduction; mounted on component side beneath DIP positions for unrestricted component placement and wiring
- Two, 24 x 72 hole PGA grids accommodate PGA and PLCC devices of any size

- Capacity for mounting 306, 16-pin DIP IC devices; 108 additional DIPs can be mounted in PGA areas
- Pin coordinate legend on board surface facilitates location and designation of wiring, components, and test fixtures
- I/O Connector mounting area for ribbon cable connectors
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- Standard version: with redundant, copper power and ground layers for Schottky and other high-speed applications
- Universal version: four uncommitted copper layers provide for multiple power planes, can be interconnected for Schottky applications



Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	96-Pin DIN Connector	Recommended Card Cage	Terminals	Wire Wrap Socket Pins
LF640SC3T1	15.75	9.19	0.055	374	FR4 Epoxy Glass	Installed	CCK400-6U	Installed	Installed
LF640UC3T1	15.75	9.19	0.055	374	FR4 Epoxy Glass	Installed	CCK400-6U	Installed	Installed
LF922UC3T1	8.66	14.44	0.055	306	FR4 Epoxy Glass	Installed	CCK220-9U	Installed	Installed
LF922SC3T1	8.66	14.44	0.055	306	FR4 Epoxy Glass	Installed	CCK220-9U	Installed	Installed

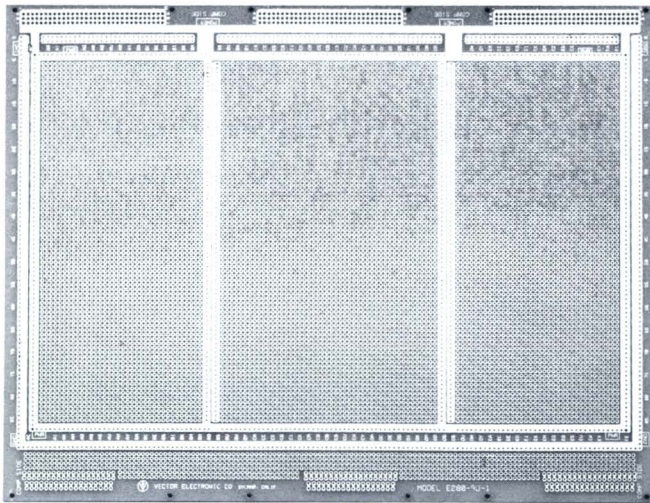
## 9U x 280MM

### E280-9U-1: Pad-Per-Hole

*With Precision-Drilled,  
Plated-Thru Holes*

- 0.042" diameter holes on 0.1" grid
- 0.080" diameter, isolated solder pad around each hole, both sides
- Voltage and ground buses around board perimeter on both sides

- Pad and bus surfaces solder-coated for user convenience
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Capacity for mounting 270, 16-pin DIP IC devices; also accepts PGA and PLCC devices
- Additional power and ground buses in signal area

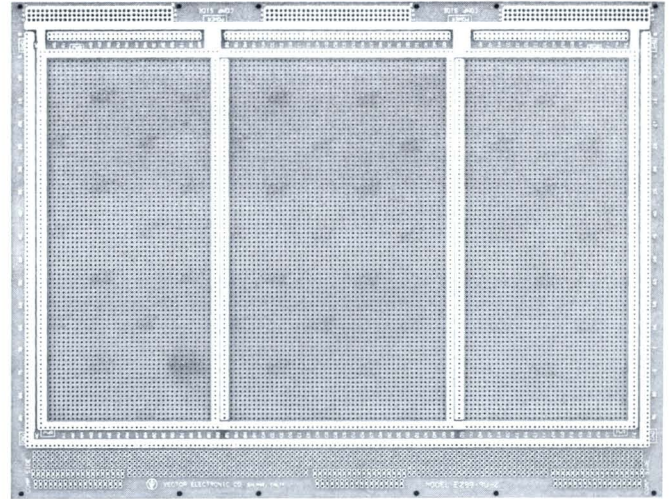


## 9U x 280MM

### E280-9U-2: Peripheral Buses

- 0.042" diameter precision-drilled holes on 0.1" grid
- Voltage and ground buses around board perimeter, both sides
- Additional power and ground buses in signal area

- Bus surfaces solder-coated for user convenience
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Three 79 x 36 grid unrestricted component placement areas
- Capacity for mounting 270, 16-pin DIP IC devices; also accepts PGA and PLCC devices

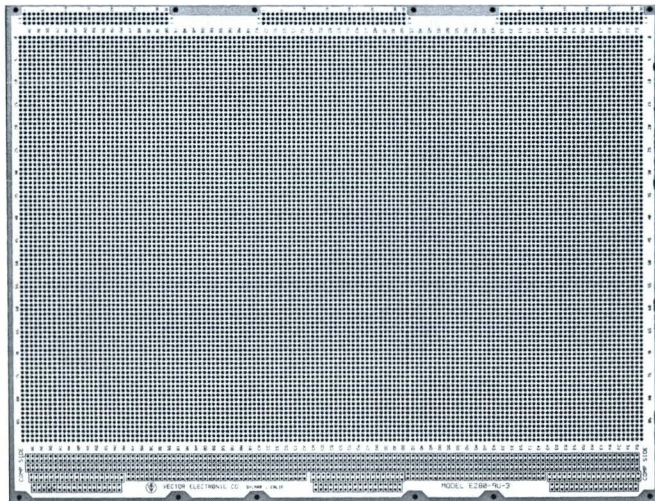


Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	96-Pin DIN Connector	Recommended Card Cage	Terminals	Wire Wrap Socket Pins
E280-9U-1	11.02	14.44	0.042	270	FR4 Epoxy Glass	RE96MWR	CCK280-9U	T125, T126	R32
E280-9U-2	11.02	14.44	0.042	270	FR4 Epoxy Glass	RE96MWR	CCK280-9U	T125, T126	R32

## 9U x 280MM

### E280-9U-3: Voltage/Ground Plane

- 0.055" diameter precision-drilled holes with 0.085" diameter clearance areas around each hole, both sides
- Overall voltage and ground planes on opposite board sides provide excellent shielding and power distribution
- Plane surfaces solder-coated for user convenience
- Capacity for mounting 348, 16-pin DIP IC devices
- Additional power and ground buses in signal area
- Accepts Wire Wrap socket pins, Vector Part Nos. R52 and R53, available separately
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- To simulate plated-thru holes committed to voltage or ground planes, use Vector T123 eyelets, available separately (for use without pins)



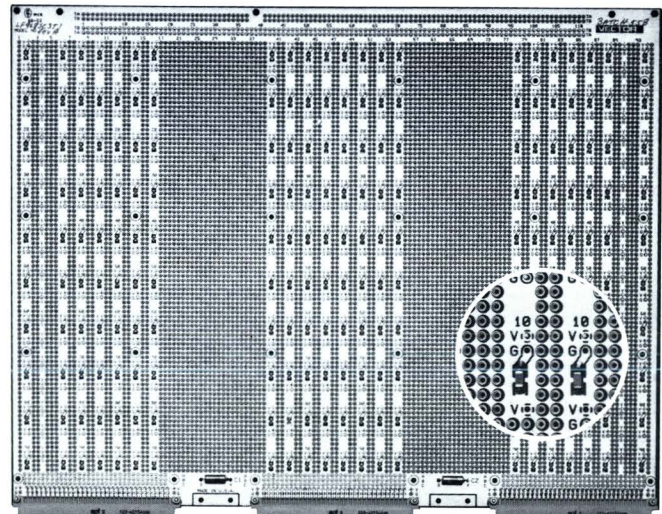
## 9U x 280MM

### LF928SC3T1: Vectorbord plus™, Standard Version

### LF928UC3T1: Vectorbord plus™, Universal Version

#### High-Speed, Multilayer Wire Wrap Boards With Socket Pins

- 0.055" diameter precision-drilled holes on 0.1" grid
- Factory-installed precision socket pins with gold contacts—four finger pins in DIP IC mounting areas and six finger pins (low insertion force) in PGA mounting areas
- Factory-installed SMD caps (198 for Standard, 400 for Universal) of alternating values provide excellent noise reduction; mounted on component side beneath DIP positions for unrestricted component placement and wiring
- I/O Connector mounting area for ribbon cable connectors
- Two, 24 x 95 hole PGA grids accommodate PGA and PLCC devices of any size
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- Standard version: with redundant, copper power and ground layers for Schottky and other high-speed applications
- Universal version: four uncommitted copper layers provide for multiple power planes, can be interconnected for Schottky applications



Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	96-Pin DIN Connector	Recommended Card Cage	Terminals	Wire Wrap Socket Pins
E280-9U-3	11.02	14.44	0.055	348	FR4 Epoxy Glass	RE96MWR	CCK280-9U	T125, T126	R50, R51, R52, R53
LF928SC3T1	11.02	14.44	0.055	400	FR4 Epoxy Glass	Installed	CCK280-9U	Installed	Installed
LF928UC3T1	11.02	14.44	0.055	400	FR4 Epoxy Glass	Installed	CCK280-9U	Installed	Installed



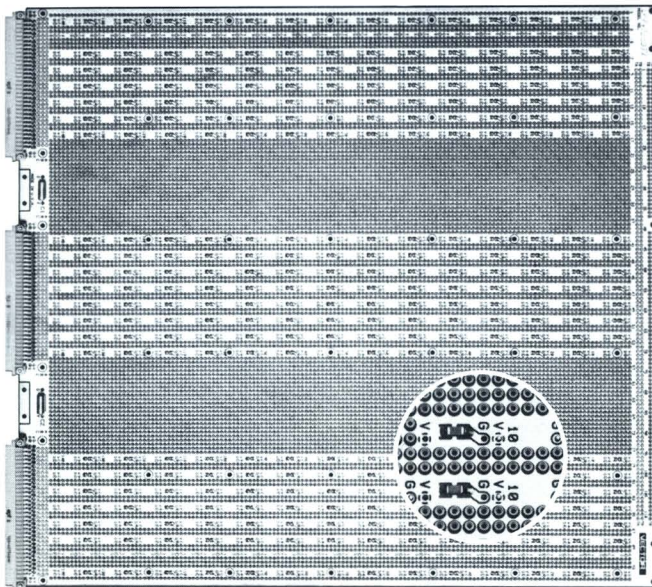
## 9U x 400MM

### LF940SC3T1: Vectorbord plus™, Standard Version

### LF940UC3T1: Vectorbord plus™, Universal Version

*High-Speed, Multilayer  
Wire Wrap Boards With  
Socket Pins*

- 0.055" diameter precision-drilled holes on 0.1" grid
- Factory-installed precision socket pins with gold contacts—four finger pins in DIP IC mounting areas and six finger pins (low insertion force) in PGA mounting areas
- Factory-installed SMD caps (296 for Standard, 580 for Universal) of alternating values provide excellent noise reduction; mounted on component side beneath DIP positions for unrestricted component placement and wiring
- Two, 24 x 143 hole PGA grids accommodate PGA and PLCC devices of any size
- Capacity for mounting 578, 16-pin DIP IC devices; 204 additional DIPs can be mounted in PGA areas
- Pin coordinate legend on board surface facilitates location and designation of wiring, components, and test fixtures
- I/O Connector mounting area for ribbon cable connectors
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- Standard version: with redundant, copper power and ground layers for Schottky and other high-speed applications
- Universal version: four uncommitted copper layers provide for multiple power planes, can be interconnected for Schottky applications

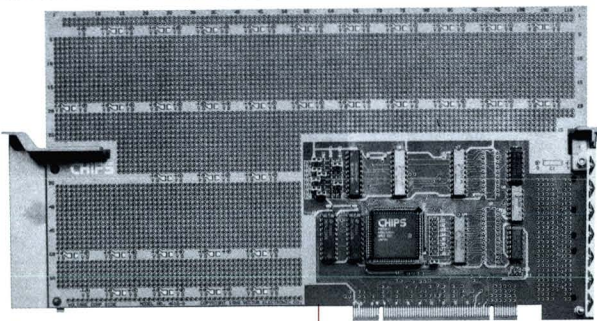


Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	96-Pin DIN Connector	Recommended Card Cage	Terminals	Wire Wrap	Socket Pins
LF940SC3T1	15.75	14.44	0.055	578	FR4 Epoxy Glass	Installed	CCK400-9U	Installed	Installed	Installed
LF940UC3T1	15.75	14.44	0.055	578	FR4 Epoxy Glass	Installed	CCK400-9U	Installed	Installed	Installed

# IBM PS/2 Active Interfacing Prototyping Board

## Featuring Vectorbord® Performance and MicroCHIPS™ Interface Chips

Introducing the Vectorbord® PS/2 Active Interface Prototyping Board. The product of an innovative collaboration between Vector Electronic Company and Chips and Technology, Inc. With this board, engineers can concentrate on "on-board" design rather than on the bus interface.



### Full Compatibility With Micro Channel Architecture

Full interface functions are provided by the MicroCHIPS™ (Micro Channel Interface Parts) from Chips and Technology, Inc., built onto the boards. These functions include command and status decoding, response signal generation, and full DMA slave arbitration and handshaking (82C612 only). In addition, all IBM timing and drive specifications are met. Based on VLSI technology, the MicroCHIPS interface can provide significant economies for IBM PS/2 development projects.

Two types of chips are included with each

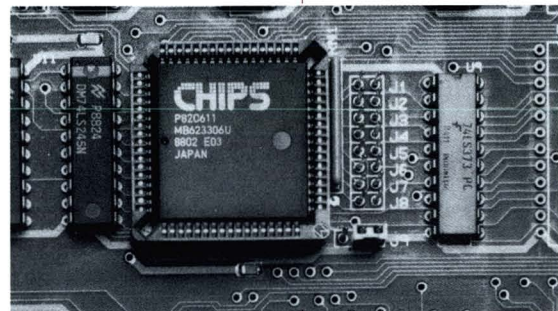
board. The 82C611 decodes both I/O and memory spaces, converts the Micro Channel "encoded commands" into IBM PC/AT-like decoded commands, supports the POS (programmable option select) system, and many other interface functions. The 82C612 supports controller-type adapters, and provides all DMA slave arbitration functions.

Support circuitry is provided for both interface chips, including: I/O memory address decode PAL sockets; data bus buffers (for 8- and/or 16-bit operation); address latch sockets for all 24 address lines; and ID driver for any 16-bit ID value. Technical lists, schematics, and layout paper are included.

## Precision Engineering, Superior Performance

The double-height board provides for prototype designs using classic Wire Wrap or solder techniques. Schematics for these designs then can be converted easily into single-height, three-layer production boards. Contact factory for more information.

The board pattern is based on 0.042" diameter precision-drilled, plated-thru holes with



0.080" diameter, isolated solder pads around holes on both sides. Overall voltage and ground planes on opposite sides provide excellent shielding and power distribution. In addition, positions are provided for surface-mount decoupling capacitors, which are included uninstalled. Mounted components can straddle cap positions for increased package densities and low board profiles. Voltage and ground holes at each cap position provide overall access to both planes.

## A Complete Selection of Support Products

The PS/2 Development Kit is supported by a full range of Vectorbord® socket pins and terminals for Wire Wrap and/or solder techniques, including: R32 socket pins; T49 trifurcated klipwrap terminals; T44 bifurcated miniwrap terminals; T46 press-in terminals; T125 and T126 Wire Wrap terminals; and T42 push-in terminals. All pins and

terminals are available separately. Extender cards, solder washers, solder eyelets, and wiring tools also are available separately.

**See page 36 for standard IBM PS/2 prototyping board.**

**Active Interface Board Also Available for IBM PC/XT (Part No. 4613-8). Contact Factory for Details.**

## Vectorbord® Prototyping Boards for the IBM PC—for Wire Wrap or solder applications.

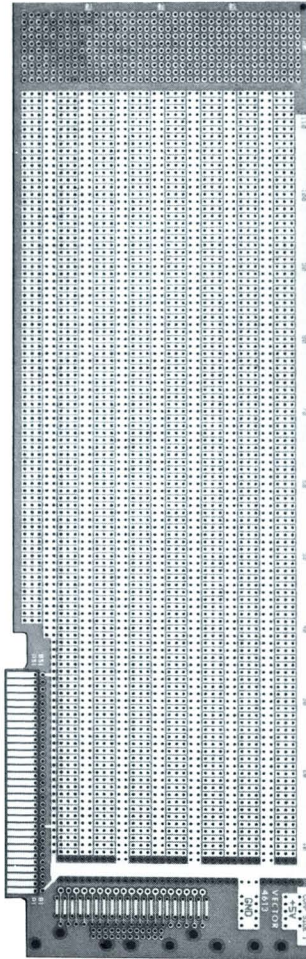
- Holes positioned on 0.1" grid
- Power and ground buses committed to connectors per bus specifications
- Gold plated edge contacts on 0.1" centers
- Identification legends for edge contacts and hole coordinates provided on board surfaces
- Layout paper and instructions included
- Constructed from 0.062" thick epoxy glass with two-ounce copper solder-plated circuit pattern surfaces
- Wire Wrap socket pins available separately for 0.042" and 0.055" holes
- Extender cards, backplanes, terminals, tools, and accessories also available separately

### IBM PC, XT

#### 4613: 3-Hole Solder Pad

*With Precision-Drilled, Plated-Thru Holes*

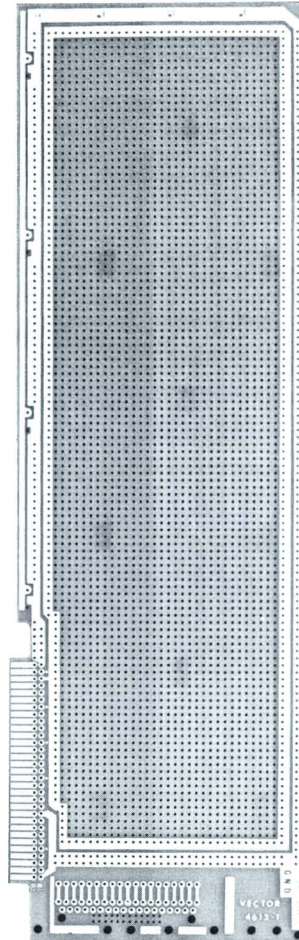
- 0.042" diameter holes on 0.1" grid
- Interleaved buses on both sides, back-to-back
- 3-hole solder pads (0.28" x 0.080") for interconnecting multiple component leads
- I/O mounting area for 37-pin D-subminiature and ribbon cable connectors
- Mounting bracket and hardware kit included



### IBM PC, XT

#### 4613-1: Peripheral Buses

- 0.042" diameter precision-drilled holes on 0.1" grid
- Voltage and ground buses around board perimeter, both sides
- Auxiliary bus line along lower edge of board, both sides
- I/O mounting area for 37-pin D-subminiature and ribbon cable connectors
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Mounting bracket and hardware kit included

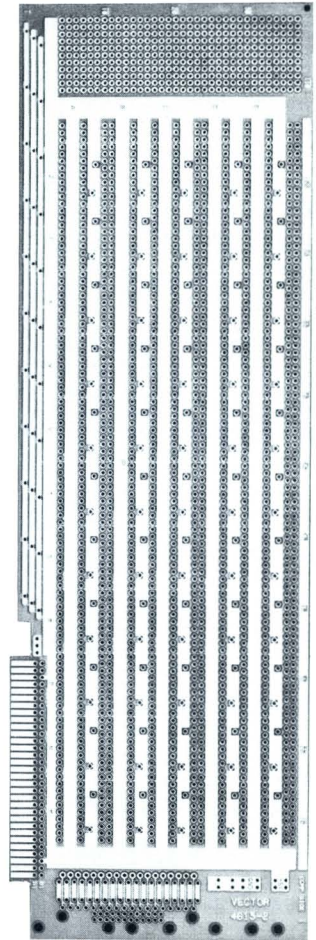


### IBM PC, XT

#### 4613-2: Voltage/Ground Planes

*With Precision-Drilled, Plated-Thru Holes*

- 0.042" diameter precision-drilled holes on 0.1" grid
- 0.085" diameter clearance area around holes, both sides
- Full voltage and ground planes on opposite sides
- Three auxiliary bus lines along edge of board
- 12 x 39 grid unrestricted component placement area with 0.080" diameter, isolated solder pads around holes



Bus Specific

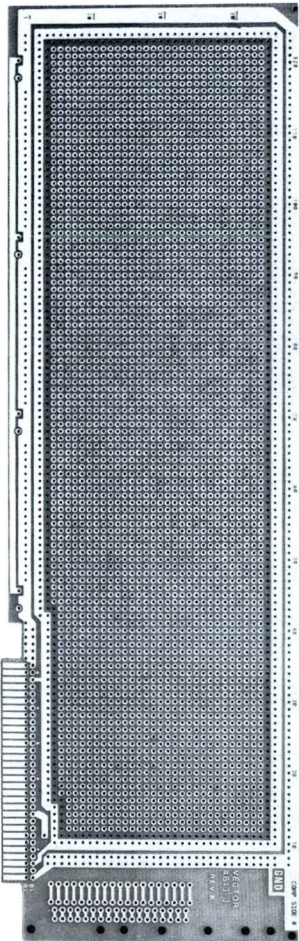
Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	V/G Terminals	Socket Pins
4613	13.25	4.2	0.042	44	FR4 Epoxy Glass	-	-	3690-22	-	T125, T126	R32
4613-1	13.25	4.2	0.042	93	FR4 Epoxy Glass	-	-	3690-22	-	T125, T126	R32
4613-2	13.25	4.2	0.042	154	FR4 Epoxy Glass	-	-	3690-22	-	T125, T126	R32

## IBM PC, XT

### 4613-3: Pad-Per-Hole

*With Precision-Drilled,  
Plated-Thru Holes*

- 0.042" diameter holes on 0.1" grid
- 0.080" diameter, isolated solder pad around each hole, both sides
- Voltage and ground buses around board perimeter
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- I/O mounting area for 37-pin D-subminiature and ribbon cable connectors

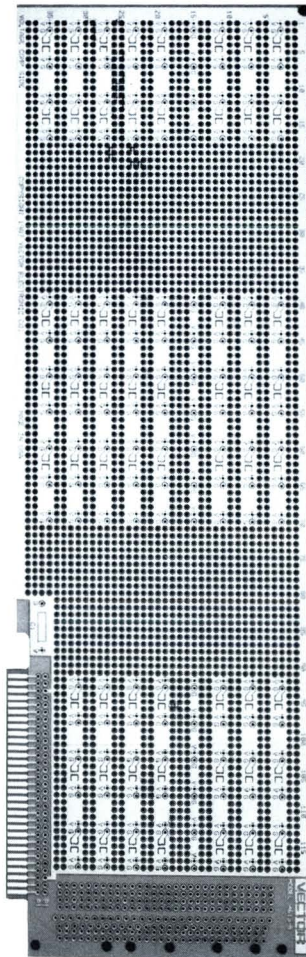


## IBM PC, XT

### 4613-5: Vectorbord plus™

*0.055" Diameter  
Precision-Drilled Holes  
On 0.1" Grid*

- High-speed board accepts socket pins, ideal for Wire Wrap applications
- Plane surfaces solder-coated for user convenience
- Two 21 x 33 grid unrestricted component placement areas
- Accepts Wire Wrap socket pins, Vector Part Nos. R50, R51, R52 and R53, available separately



- Capacity for mounting 120, 16-pin DIP IC devices; additional DIPs can be mounted in PGA areas
- Positions for mounting 61 SMD decoupling caps
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- To simulate plated-thru holes committed to voltage or ground planes, use Vector T123 eyelets, available separately (for use without pins)
- I/O area for mounting 37-pin D-subminiature and ribbon cable connectors
- Holes for V/G pins and I/O connectors are plated-thru, 0.042" diameter; can be committed to voltage or ground planes with pressfit pins, Vector Part Nos. T125, T126, available separately
- Mounting bracket and hardware kit included

### 4613C5LF: Vectorbord plus™

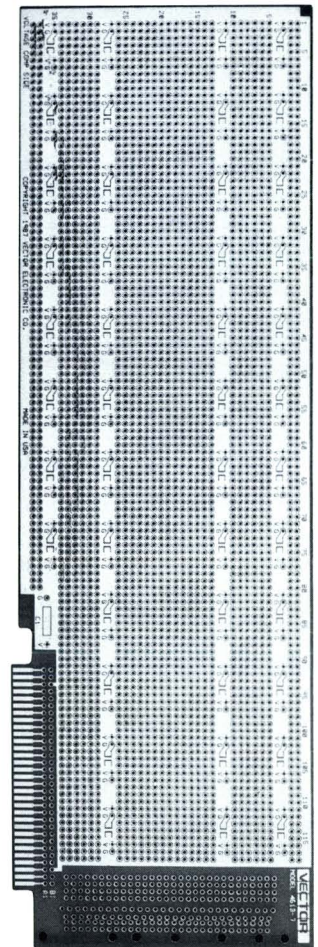
- Fully populated Wire Wrap board with factory-installed socket pins and terminal pins
- Factory-installed SMD caps of alternating values provide excellent noise reduction; mounted on component side beneath DIP positions for unrestricted component placement and wiring

## IBM PC, XT

### 4613-7: Pads & Planes™

*With Precision-Drilled,  
Plated-Thru Holes*

- 0.042" diameter holes on 0.1" grid
- 0.080" diameter, isolated solder pad around each hole, both sides
- Overall voltage and ground planes
- Large component mounting area (14 x 118 grid), unrestricted component placement for DIP IC, PGA, and PLCC devices



Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	V/G Terminals	Socket Pins
4613-3	13.25	4.2	0.042	154	FR4 Epoxy Glass	-	-	3690-22	-	T125, T126	R32
4613-5	13.25	4.2	0.055	120	FR4 Epoxy Glass	-	-	3690-22	-	T125, T126	R50, R51, R52, R53
4613C5LF	13.25	4.2	0.055	120	FR4 Epoxy Glass	-	-	3690-22	-	T125, T126	R50, R51, R52, R53
4613-7	13.25	4.2	0.042	120	FR4 Epoxy Glass	-	-	3690-22	-	T125, T126	R32

## Vectorbord® Prototyping Boards for the IBM AT family—for Wire Wrap or solder applications.

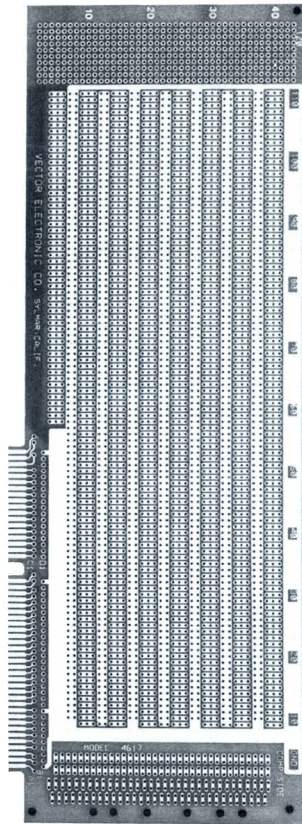
- Holes on 0.1" grid pattern
- Gold plated edge contacts on 0.1" centers
- Power and ground buses committed to connectors per bus specifications
- Identification legends for edge contacts and hole coordinates provided on board surfaces
- Constructed from 0.062" thick epoxy glass with two-ounce copper solder-plated circuit surfaces
- Layout paper and instructions included
- Wire Wrap socket pins available separately for 0.042" and 0.055" holes
- Extender cards, backplanes, terminals, tools, and accessories also available separately

### IBM AT

#### 4617: 3-Hole Solder Pad

*With Precision-Drilled, Plated-Thru Holes*

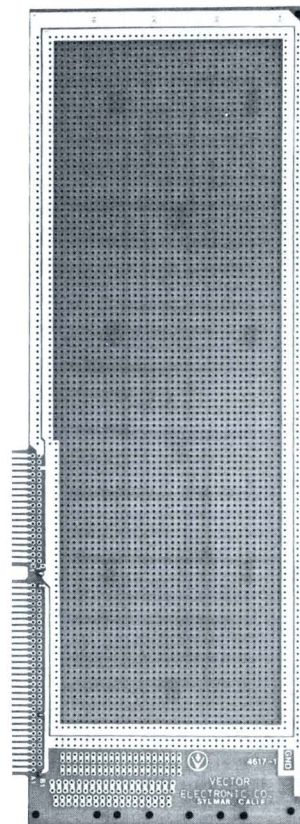
- 0.042" diameter holes on 0.1" grid
- Interleaved buses on both sides, back-to-back
- 3-hole solder pads (0.28" x 0.080") for interconnecting multiple component leads
- 10 x 42 grid unrestricted component placement area
- I/O mounting area for 37-pin D-subminiature and ribbon cable connectors
- Mounting bracket and hardware kit included



### IBM AT

#### 4617-1: Peripheral Buses

- 0.042" diameter precision-drilled holes on 0.1" grid
- Power and ground buses around board perimeter, both sides
- Bus surfaces solder-coated for user convenience
- Capacity for mounting 108, 16-pin DIP IC devices; also accepts PGA and PLCC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- I/O mounting area for 37-pin D-subminiature and ribbon cable connectors
- Mounting bracket and hardware kit included

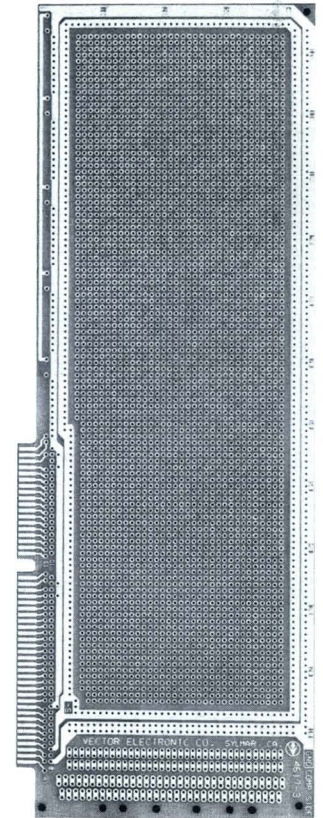


### IBM AT

#### 4617-3: Pad-Per-Hole

*With Precision-Drilled, Plated-Thru Holes*

- 0.042" diameter holes on 0.1" grid
- Voltage and ground buses around board perimeter
- Pad and bus surfaces solder-coated for user convenience
- Capacity for mounting 96, 16-pin DIP IC devices; also accepts PGA and PLCC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- I/O mounting area for 37-pin D-subminiature and ribbon cable connectors
- Mounting bracket and hardware kit included



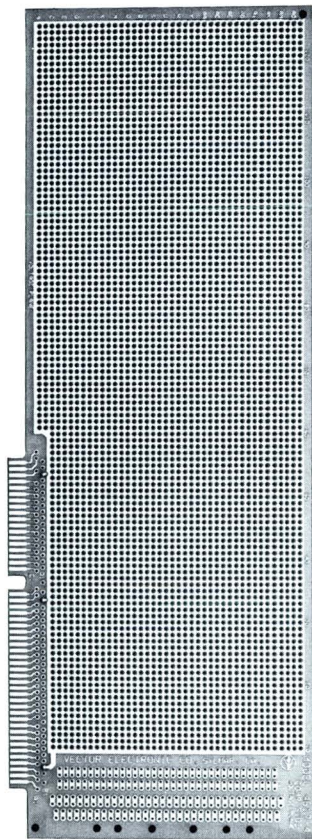
Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	V/G Terminals	Socket Pins
4617	13.25	4.8	0.042	32	FR4 Epoxy Glass	-	-	3690-26,-1	-	T125,T126	R32
4617-1	13.25	4.8	0.042	108	FR4 Epoxy Glass	-	-	3690-26,-1	-	T125,T126	R32
4617-3	13.25	4.8	0.042	96	FR4 Epoxy Glass	-	-	3690-26,-1	-	T125,T126	R32

## IBM AT

### 4617-4: Voltage/Ground Planes

0.055" Diameter  
Precision-Drilled Holes  
On 0.1" Grid

- Full voltage and ground planes on opposite board sides provide excellent shielding and power distribution
- 0.085" diameter clearance area around each hole, both sides
- Plane surfaces solder-coated for user convenience
- Capacity for mounting 130, 16-pin DIP IC devices; also accepts PGA and PLCC devices
- Accepts Wire Wrap socket pins, Vector Part Nos. R50, R51, R52 and R53, available separately
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- To simulate plated-thru holes committed to voltage or ground planes, use Vector T123 eyelets, available separately (for use without pins)
- I/O mounting area for 37-pin D-subminiature and ribbon cable connectors
- Mounting bracket and hardware kit included

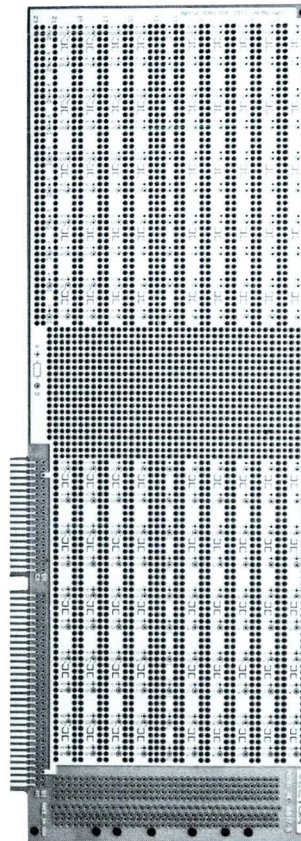


## IBM AT

### 4617-5: Vectorbord plus™

0.055" Diameter  
Precision-Drilled Holes  
On 0.1" Grid

- High speed board, designed for socket pins, ideal for Wire Wrap applications
- Two 21 x 33 grid unrestricted component placement areas
- Capacity for mounting 140, 16-pin DIP IC devices; additional DIPs can be mounted in PGA areas
- Positions for mounting 70 SMD caps
- Plane surfaces solder-coated for user convenience
- I/O mounting area for 50-pin D-subminiature and ribbon cable connectors
- Accepts Wire Wrap socket pins, Vector Part Nos. R50, R51, R52 and R53, available separately
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- To simulate plated-thru holes committed to voltage or ground planes, use Vector T123 eyelets, available separately (for use without pins)
- Holes for V/G pins and I/O connectors are plated-thru, 0.042" diameter; can be committed to voltage or ground planes with pressfit pins, Vector Part Nos. T125, T126, available separately
- Mounting bracket and hardware kit included



### 4617C5LF: Vectorbord plus™

- Fully populated Wire Wrap board with factory-installed socket pins and terminal pins
- Factory-installed SMD caps of alternating values provide excellent noise reduction; mounted on component side beneath DIP positions for unrestricted component placement and wiring

Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	V/G Terminals	Socket Pins
4617-4	13.25	4.8	0.055	140	FR4 Epoxy Glass	-	-	3690-26,-1	-	T125,T126	R50,R51,R52,R53
4617-5	13.25	4.8	0.055	140	FR4 Epoxy Glass	-	-	3690-26,-1	-	T125,T126	R50,R51,R52,R53
4617C5LF	13.25	4.8	0.055	140	FR4 Epoxy Glass	-	-	3690-26,-1	-	T125,T126	R50,R51,R52,R53

## High-performance prototyping boards for IBM PS/2 Models 50, 60, and 80.

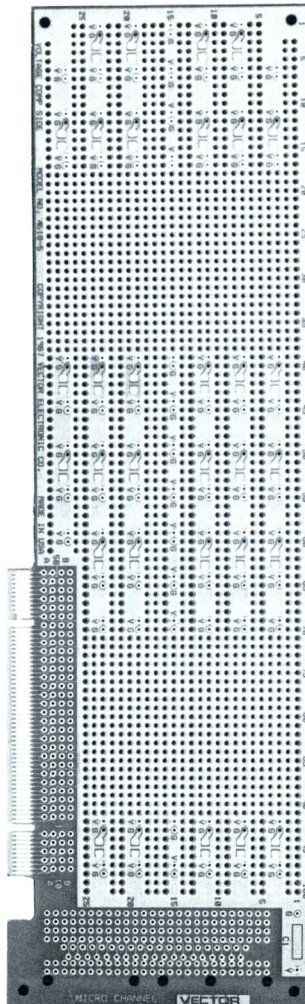
- Available in Vectorbord plus™ and Pads & Planes™ circuit patterns
- High density hole patterns based on 0.1" grids
- All holes are "on grid" to facilitate automatic wiring
- Unrestricted component placement, minimum wire paths
- Positions for SMD decoupling capacitors
- Low impedance, overall voltage and ground planes to ensure signal integrity, reduce crosstalk
- Layout paper and instructions included
- Extenders, socket pins, terminals, and accessories available separately

## IBM PS/2

### 4618-5: Vectorbord plus™

0.055" Diameter Precision-Drilled Holes On 0.1" Grid

- High-speed board, designed for socket pins, ideal for Wire Wrap applications
- Plane surfaces solder-coated for user convenience
- Two 21 x 25 grid unrestricted component placement areas



- Capacity for mounting 79, 16-pin DIP IC devices; additional DIPs can be mounted in PGA areas
- Positions for mounting 32 SMD decoupling capacitors
- Accepts Wire Wrap socket pins, Vector Part Nos. R50, R51, R52 and R53, available separately
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- To simulate plated-thru holes committed to voltage or ground planes, use Vector T123 eyelets, available separately (for use without pins)
- I/O area for mounting 37-pin D-subminiature and ribbon cable connectors
- Holes for V/G pins and I/O connectors are plated-thru, 0.042" diameter; can be committed to voltage or ground planes with pressfit pins, Vector Part Nos. T125, T126, available separately
- Mounting bracket and hardware kit included

### 4618C5LF: Vectorbord plus™

- Fully populated Wire Wrap board with factory-installed socket pins and terminal pins
- Factory-installed SMD caps of alternating values provide excellent noise reduction; mounted on component side beneath DIP positions for unrestricted component placement and wiring

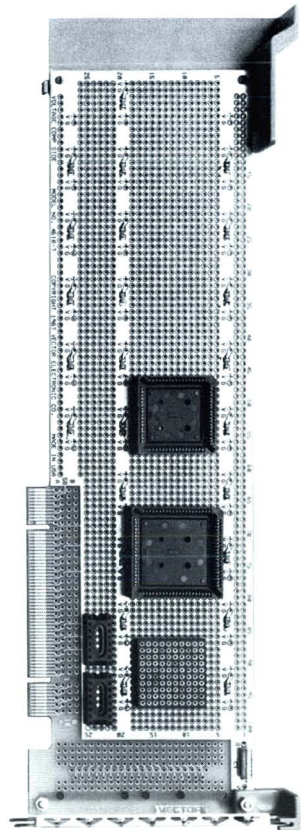
Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	V/G Terminals	Socket Pins
4618-5	11.5	3.48	0.055	79	FR4 Epoxy Glass	-	-	3690-30,31	-	T125,T126	R50,R51,R52,R53
4618C5LF	11.5	3.48	0.055	79	FR4 Epoxy Glass	-	-	3690-30,31	-	T125,T126	R50,R51,R52,R53

## IBM PS/2

### 4618-7: Pads & Planes

*With Precision-Drilled,  
Plated-Thru Holes*

- 0.042" diameter holes on 0.1" grid
- 0.080" diameter, isolated solder pad around each hole, both sides
- Overall voltage and ground planes provide excellent shielding and power distribution
- Pad and plane surfaces solder-coated for user convenience
- Large component mounting area (14 x 100 grid), unrestricted component placement for DIP IC, PGA, and PLCC devices
- Capacity for mounting 79, 16-pin DIP IC devices; also accepts PGA and PLCC devices
- Positions provided for 29 SMD decoupling capacitors
- Accepts Wire Wrap socket pins, Vector Part No. R32, and V/G terminal pins, Vector Part Nos. T125, T126; both pins available separately
- To commit Wire Wrap pins to voltage or ground planes, use Vector Part No. T124 solder washers, available separately
- I/O mounting area for 37-pin D-subminiature and ribbon cable connectors
- Mounting bracket and hardware kit included
- See page vi for PS/2 active interfacing prototyping board



## Vectorbord® prototyping boards for Apple Macintosh II and Macintosh SE computers.

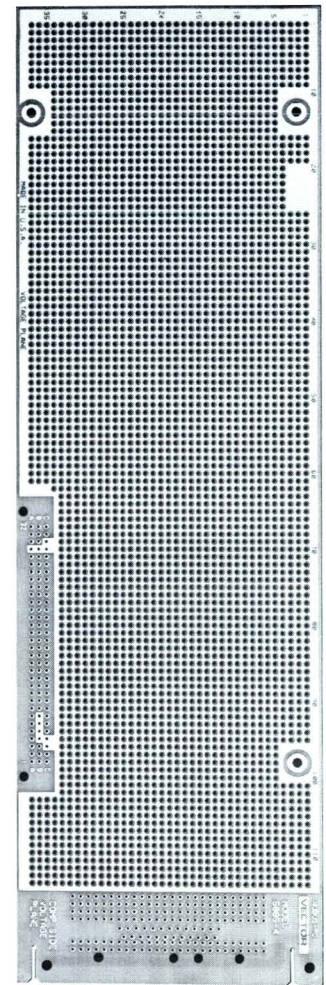
- **Featuring Vectorbord plus™ and Pads & Planes™ designs**
- **Macintosh II boards designed for Apple NuBus specifications**
- **Massive overall voltage and ground planes on opposite board sides, combines low inductance with high distributed capacitance**
- **Two-ounce copper ground planes, solder-plated**
- **96-pin male DIN connectors with right angle Wire Wrap tails and hardware**
- **Layout paper and instructions**
- **Mounting brackets, port expansion shields, and hardware included**
- **Complete selection of extender cards, Wire Wrap socket pins, terminals, accessories, and installation tools available separately**

## Macintosh II

### 5085-4: Voltage/Ground Planes

*0.055" Diameter  
Precision-Drilled Holes  
On 0.1" Grid*

- 0.085" diameter clearance pad around each hole, both sides
- Full voltage and ground planes on opposite sides
- I/O mounting area for 37-pin D-subminiature and ribbon cable connectors
- To simulate plated-thru holes committed to voltage or ground planes, use Vector T123 eyelets, available separately (for use without pins)



Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	V/G Terminals	Socket Pins
4618-7	11.5	3.48	0.042	79	FR4 Epoxy Glass	-	-	3690-30,31	-	T125,T126	R32
5085-4	4.0	12.86	0.055	115	FR4 Epoxy Glass	-	-	3690-27,28	-	T125,T126	R50,R51,R52,R53

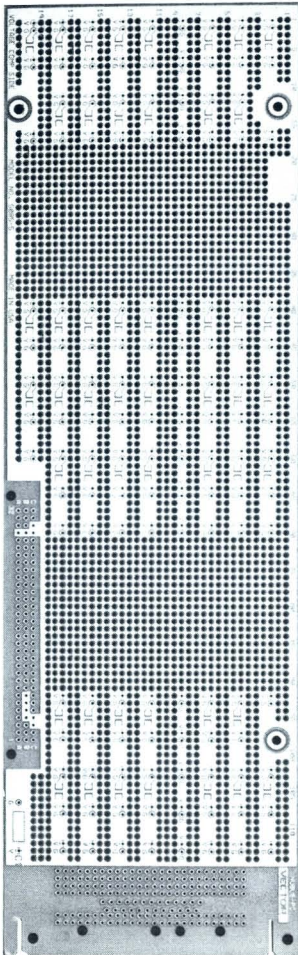


## Macintosh II

### 5085-5: Vectorbord plus™

0.055" Diameter  
Precision-Drilled Holes  
On 0.1" Grid

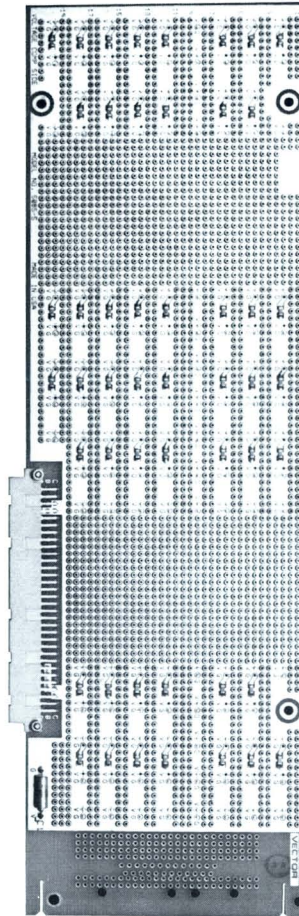
- Designed for socket pins—ideal for Wire Wrap, provides for high speed circuitry, high component density, and a variety of component sizes
- Pad and bus surfaces solder-coated for user convenience
- Two 21 x 32 grid unrestricted component placement areas



- Capacity for mounting 115, 16-pin DIP IC devices; additional DIPs can be mounted in PGA areas
- Positions for mounting 50 SMD decoupling caps
- 96-pin DIN right angle connector supplied
- Accepts Wire Wrap socket pins, Vector Part Nos. R50, R51, R52 and R53, available separately
- To commit Wire Wrap pins to voltage or ground planes, use Vector T124 solder washers, available separately
- To simulate plated-thru holes committed to voltage or ground planes, use Vector T123 eyelets, available separately (for use without pins)
- Holes for V/G pins and I/O connectors are plated-thru, can be committed to voltage or ground planes with pressfit pins, Vector Part Nos. T125, T126, available separately
- I/O area for mounting 37-pin D-subminiature and ribbon cable connectors

### 5085C5LF: Vectorbord plus™

- Fully populated Wire Wrap board with factory-installed socket pins and terminal pins
- Factory-installed SMD caps of alternating values provide excellent noise reduction; mounted on component side beneath DIP positions for unrestricted component placement and wiring

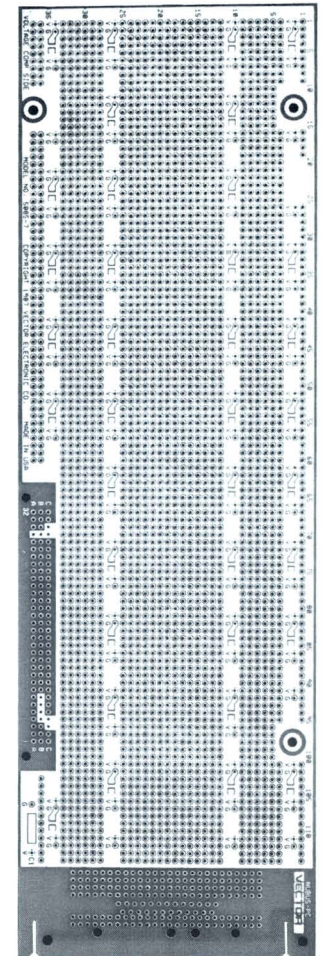


## Macintosh II

### 5085-7: Pads & Planes™

With Precision-Drilled,  
Plated-Thru Holes

- 0.042" diameter holes on 0.1" grid
- 0.080" diameter, isolated solder pad around each hole, both sides
- Positions for mounting 36 SMD decoupling caps
- I/O mounting area for 37-pin D-subminiature and ribbon cable connectors
- Chassis mounting bracket and 96-pin, right-angle DIN connector supplied



Bus Specific

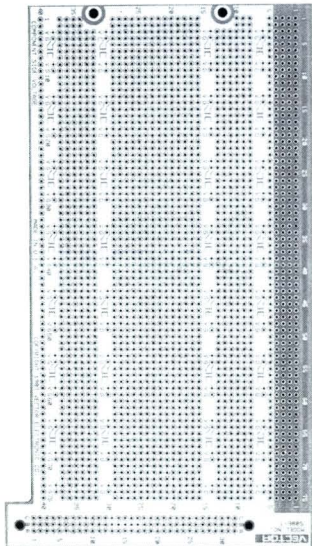
Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	V/G Terminals	Socket Pins
5085-5	4.0	12.85	0.055	115	FR4 Epoxy Glass	-	-	3690-27,28	-	T125, T126	R50, R51, R52, R53
5085C5LF	4.0	12.85	0.055	115	FR4 Epoxy Glass	-	-	3690-27,28	-	T125, T126	R50, R51, R52, R53
5085-7	4.0	12.85	0.042	115	FR4 Epoxy Glass	-	-	3690-27,28	-	T125, T126	R32

## Macintosh SE

### 5086-7: Pads & Planes™

*With Precision-Drilled,  
Plated-Thru Holes*

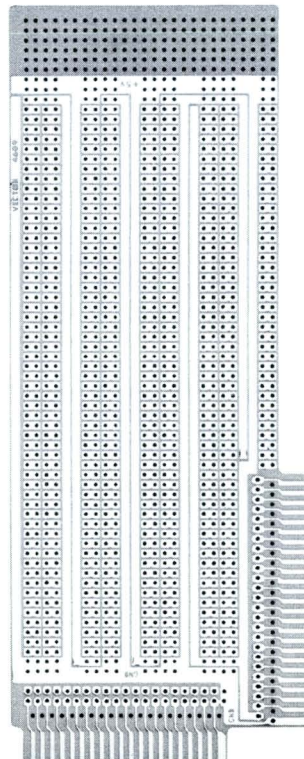
- 0.042" diameter holes on 0.1" grid
- 0.080" diameter, isolated solder pad around each hole, both sides
- Pad and plane surfaces solder-coated for user convenience
- Positions for mounting 28 SMD decoupling caps
- Capacity for mounting 81, 16-pin DIP IC devices; also accepts PGA and PLCC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, and V/G terminal pins, Vector Part Nos. T125, T126; both pins available separately
- I/O mounting area for 37-pin D-subminiature and ribbon cable connectors
- Chassis mounting bracket and 96-pin, right-angle DIN connector supplied



## Apple II, Ile

### 4609: 2-Hole Solder Pad

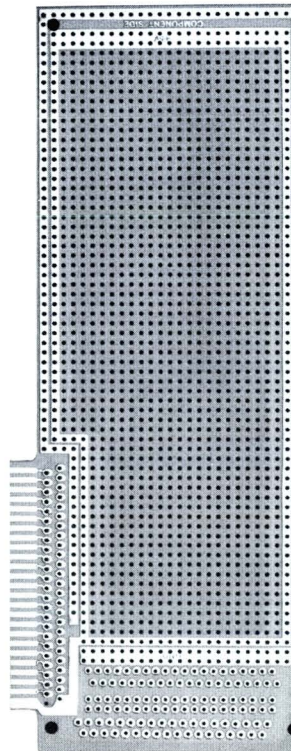
- 0.042" diameter precision-drilled holes on 0.1" grid
- For solder or Wire Wrap applications
- Interleaved buses on both sides, back-to-back
- In addition to standard 50-contact edge connector, 40-contact edge connector for I/O provided
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Mounting area for ribbon cable connector
- 6 x 26 unrestricted component placement area
- Capacity for mounting 22, 16-pin DIP IC devices; additional DIPs can be mounted in PGA area



## Apple II, Ile

### 4609-1: Peripheral Buses

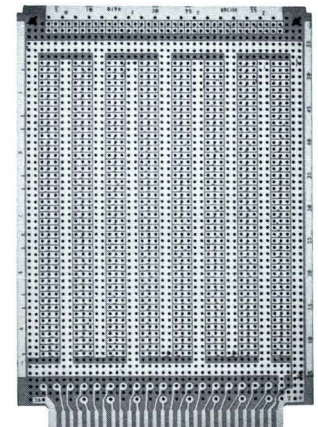
- 0.042" diameter precision-drilled holes on 0.1" grid
- Voltage and ground buses around board perimeter, both sides
- Bus surfaces solder-coated for user convenience
- Capacity for mounting 46, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- I/O mounting area for 37-pin D-subminiature and ribbon cable connectors



## STD Bus

### 4610: 3-Hole Solder Pad

- 0.042" diameter precision-drilled holes on 0.1" grid
- 3-hole solder pads (0.28" x 0.080") for interconnecting multiple component leads
- Solder pads and interleaved buses on wiring side; component side has contacts only
- Bus outlines traced on component side for user convenience
- Pad and bus surfaces solder-coated for user convenience
- I/O mounting area for ribbon cable connector
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Capacity for mounting 20, 16-pin DIP IC devices
- STD Bus standard: 5 volt bus terminates to pins 1 and 2; ground terminates to pins 3 and 4

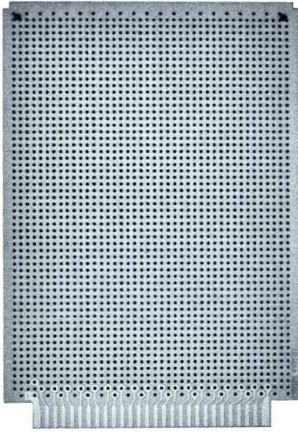


Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	V/G Terminals	Socket Pins
5086-7	4.7	8.4	0.042	81	FR4 Epoxy Glass	-	-	-	-	T125, T126	R32
4609	7.7	3.06	0.042	22	CEM-1 Epoxy Glass Composite	-	-	3690-24	-	T125, T126	R32
4609-1	7.7	3.06	0.042	46	CEM-1 Epoxy Glass Composite	-	-	3690-24	-	T125, T126	R32
4610	6.5	4.5	0.042	20	CEM-1 Epoxy Glass Composite	R656-1	R656	3690-16	Series 13	T125, T126	R32

## STD Bus

### 4610-1: Contacts Only

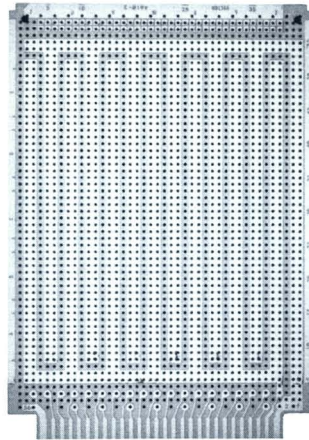
- 0.042" diameter precision-drilled holes on 0.1" grid
- Capacity for mounting 59, 16-pin DIP IC devices; also accepts PGA and PLCC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately.
- STD Bus standard: 5 volt bus terminates to pins 1 and 2; ground terminates to pins 3 and 4



## STD Bus

### 4610-2: Interleaved Buses

- 0.042" diameter precision-drilled holes on 0.1" grid
- Power and ground buses on wiring side only, component side has contacts only
- Bus surfaces solder-coated for user convenience
- Bus outlines traced on component side for user convenience
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- I/O mounting area for ribbon cable connector
- Capacity for mounting 35, 16-pin DIP IC devices
- STD Bus standard: 5 volt bus terminates to pins 1 and 2; ground terminates to pins 3 and 4

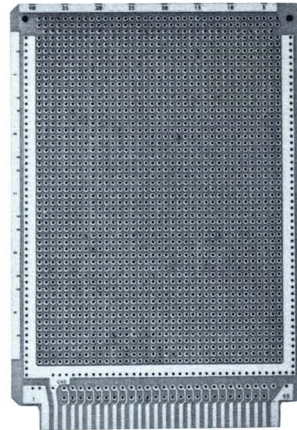


## STD Bus

### 4610-3: Pad-Per-Hole

*With Precision-Drilled, Plated-Thru Holes*

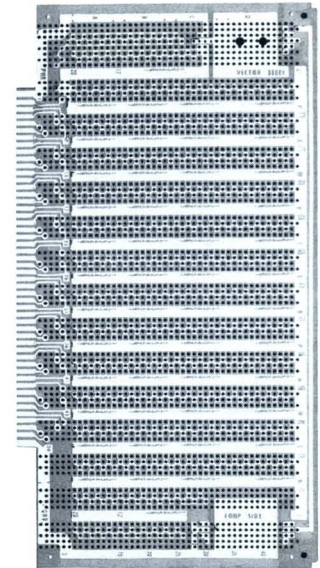
- 0.042" diameter holes on 0.1" grid
- 0.080" diameter, isolated solder pads around holes, both sides
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Capacity for mounting 52, 16-pin DIP IC devices; also accepts PGA and PLCC devices
- STD Bus standard: 5 volt bus terminates to pins 1 and 2; ground terminates to pins 3 and 4



## S-100

### 8800V: Voltage/Ground Buses

- 0.042" diameter precision-drilled holes on 0.1" grid
- Pin coordinate legend on board surface facilitates location and designation of wiring, components, and test fixtures
- Zig-zag buses: pins, terminals, or wires contact either voltage or ground at each hole along bus lines
- Power and ground buses uncommitted at DIP locations
- Plane surfaces solder-coated for user convenience
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Capacity for mounting 52, 16-pin DIP IC devices
- Pins 1 and 51 committed to power; pins 50 and 100 committed to ground per S-100 Bus specification



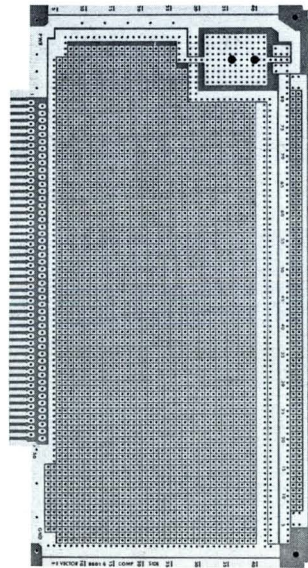
Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	V/G Terminals	Socket Pins
4610-1	6.5	4.5	0.042	59	CEM-1 Epoxy Glass Composite	R656-1	R656	3690-16	Series 13	T125, T126	R32
4610-2	6.5	4.5	0.042	35	CEM-1 Epoxy Glass Composite	R656-1	R656	3690-16	Series 13	T125, T126	R32
4610-3	6.5	4.5	0.042	52	FR4 Epoxy Glass	R656-1	R656	3690-16	Series 13	T125, T126	R32
8800V	10.0	5.3	0.042	52	CEM-1 Epoxy Glass Composite	R681-3	R681-2	3690-12	Series 100	T125, T126	R32

## S-100

### 8801-6: Pad-Per-Hole (replaces Vector Part No. 8801)

*With Precision-Drilled,  
Plated-Thru Holes*

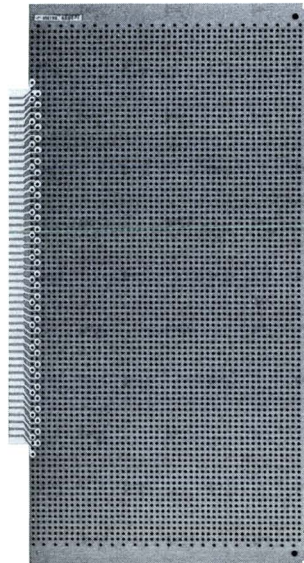
- 0.042" diameter holes on 0.1" grid
- Solder pads around holes are square, both sides
- Capacity for mounting 80, 16-pin DIP IC devices; also accepts PGA and PLCC devices
- Pin coordinate legend on board surface facilitates location and designation of wiring, components, and test fixtures
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- I/O mounting area for ribbon cable connectors
- Pins 1 and 51 committed to power; pins 50 and 100 committed to ground per S-100 Bus specification



## S-100

### 8801-1: Contacts Only

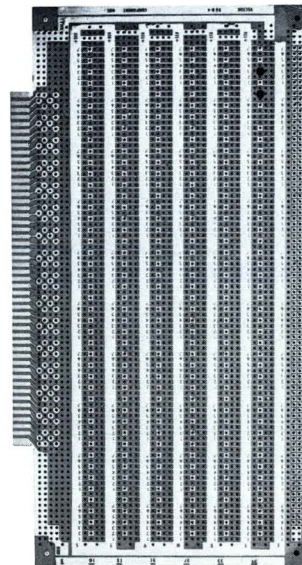
- 0.042" diameter precision-drilled holes on 0.1" grid
- Unrestricted component placement
- Capacity for mounting 110, 16-pin DIP IC devices; also accepts PGA and PLCC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Pins 1 and 51 committed to power; pins 50 and 100 committed to ground per S-100 Bus specification



## S-100

### 8804: Voltage/Ground Buses

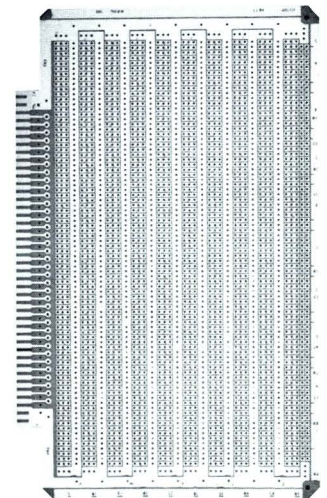
- 0.042" diameter precision-drilled holes on 0.1" grid
- 0.085" clearance area around holes, both sides
- Pin coordinate legend on board surface facilitates location and designation of wiring, components, and test fixtures
- Zig-zag buses: pins, terminals, or wires contact either voltage or ground at each hole along bus lines
- Plane surfaces solder-coated for user convenience
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- I/O mounting area for ribbon cable connector
- Capacity for mounting 70, 16-pin DIP IC devices
- Pins 1 and 51 committed to power; pins 50 and 100 committed to ground per S100 Bus specification



## Motorola Exorciser, Micromodule

### 4611: 3-Hole Solder Pad

- 0.042" diameter precision-drilled holes on 0.1" grid
- 3-hole solder pads (0.28" x 0.080") for interconnecting multiple component leads
- Solder pads and interleaved buses on wiring side; component side has contacts only
- Pad and bus surfaces solder-coated
- Bus outlines traced on component side for user convenience
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Capacity for mounting 45, 16-pin DIP IC devices
- Motorola standard: power bus terminates to pins 1,2,3, A,B,C; ground bus terminates to pins 41,42,43; w,x,y
- I/O mounting area for ribbon cable I/O connector

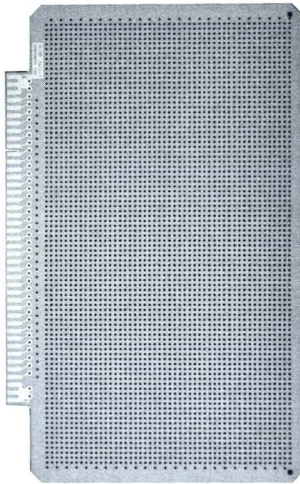


Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	V/G Terminals	Socket Pins
8801-6	10.0	5.3	0.042	80	FR4 Epoxy Glass	R681-3	R681-2	3690-12	Series 100	T125,T126	R32
8801-1	10.0	5.3	0.042	110	CEM-1 Epoxy Glass Composite	R681-3	R681-2	3690-12	Series 100	T125,T126	R32
8804	10.0	5.3	0.042	70	CEM-1 Epoxy Glass Composite	R681-3	R681-2	3690-12	Series 100	T125,T126	R32
4611	9.75	6.0	0.042	45	CEM-1 Epoxy Glass Composite	R685-2	-	3690-20	Series 100	T125,T126	R32

## Motorola Exorciser, Micromodule

### 4611-1: Contacts Only

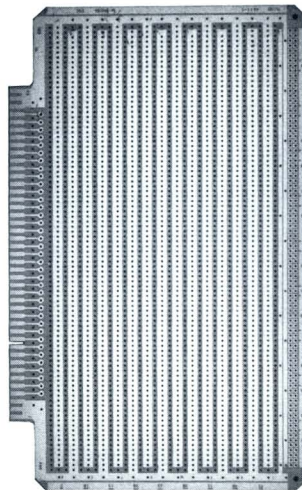
- 0.042" diameter precision-drilled holes on 0.1" grid
- Unrestricted component placement over entire board area
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Capacity for mounting 119, 16-pin DIP IC devices; also accepts PGA and PLCC devices
- Pins 1,2,3, A,B,C are common
- Pins 41,42,43 w,x,y are common



## Motorola Exorciser, Micromodule

### 4611-2: Interleaved Buses

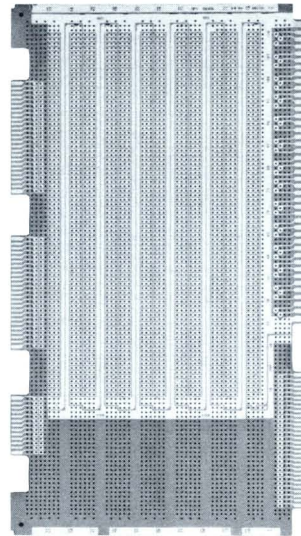
- 0.042" diameter precision-drilled holes on 0.1" grid
- Interleaved voltage and ground buses on wiring side; component side has contacts only
- Bus surfaces solder-coated
- Bus outlines traced on component side for user convenience
- Capacity for mounting 80, 16-pin DIP IC devices
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- I/O mounting area for ribbon cable connector
- Motorola standard: power bus terminates to pins 1,2,3, A,B,C; ground bus terminates to pins 41,42,43; w,x,y



## Multibus

### 4608: 3-Hole Solder Pad

- 0.042" diameter precision-drilled holes on 0.1" grid
- Interleaved buses on both sides, back-to-back
- 3-hole solder pads (0.28" x 0.080") on wiring side for interconnecting multiple component leads
- Pad and bus surfaces solder-coated for user convenience
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- 23 x 49 grid unrestricted component placement area
- Capacity for mounting 54, 16-pin DIP IC devices; additional DIPs can be mounted in PGA area
- Two sets of edge contacts: 43/86 on 0.156" centers, and 30/60 on 0.1" centers
- 3 sets of I/O edge connectors at top of board: two sets are 25/50 contacts on 0.1" centers; one set is 13/26 contacts on 0.1" centers

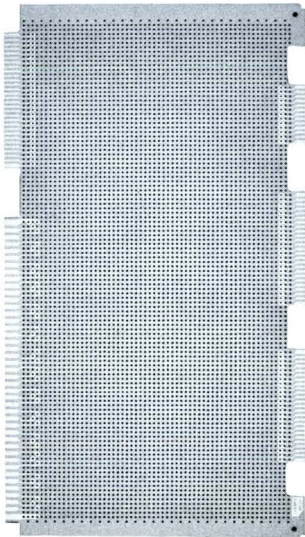


Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	V/G Terminals	Socket Pins
4611-1	9.75	6.0	0.042	119	CEM-1 Epoxy Glass Composite	R685-2	-	3690-20	Series 100	T125, T126	R32
4611-2	9.75	6.0	0.042	80	CEM-1 Epoxy Glass Composite	R685-2	-	3690-20	Series 100	T125, T126	R32
4608	12.0	6.75	0.042	54	CEM-1 Epoxy Glass Composite	R683-1, R685-1	-	3690-18	Series 18	T125, T126	R32

## Multibus

### 4608-1: Contacts Only

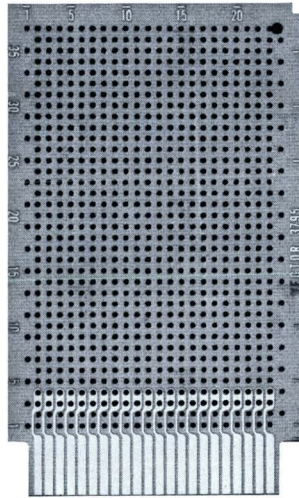
- 0.042" diameter precision-drilled holes on 0.1" grid
- Unrestricted component placement
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Capacity for mounting 144, 16-pin DIP IC devices; also accepts PGA and PLCC devices
- Two sets of edge contacts: 43/86 on 0.156" centers, and 30/60 on 0.1" centers
- 3 sets of I/O edge connectors at top of board: two sets are 25/50 contacts on 0.1" centers; one set is 13/26 contacts on 0.1" centers



## Commodore 64

### 3795: Contacts Only

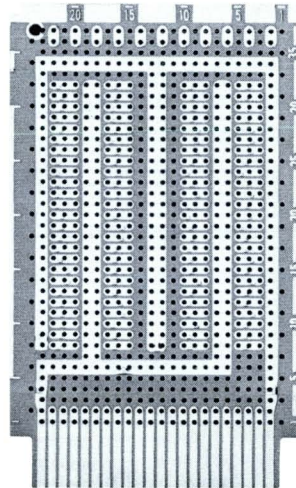
- 0.042" diameter precision-drilled holes on 0.1" grid
- Edge contacts: 44 pins, 22 each side on 0.1" centers
- Unrestricted component placement
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Capacity for mounting 15, 16-pin DIP IC devices; also accepts PGA and PLCC devices



## Commodore 64

### 3795-1: 3-Hole Solder Pad

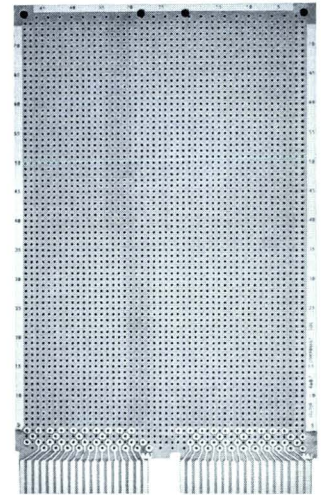
- 0.042" diameter precision-drilled holes on 0.1" grid
- 3-hole solder pads (0.28" x 0.080") for interconnecting multiple component leads
- Solder pads and interleaved buses on wiring side; component side has contacts only
- Pad and bus surfaces solder-coated for user convenience
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Capacity for mounting 4, 16-pin DIP IC devices



## DEC LSI-11, PDP-8, PDP-11

### 4607: Contacts Only

- 0.042" diameter precision-drilled holes on 0.1" grid
- Unrestricted component placement over entire board area
- Board supplied with two sets of edge contacts—each set is 36 contacts, 18 each side on 0.125" centers
- Accepts Wire Wrap socket pins, Vector Part No. R32, available separately
- Capacity for mounting 85, 16-pin DIP IC devices; also accepts PGA and PLCC devices



Part No.	Width	Height	Hole Dia.	16-pin DIP Capacity	Material	Solder Connector	Wire Wrap Connector	Extender	Recommended Card Cage	V/G Terminals	Socket Pins
4608-1	12.0	6.75	0.042	144	CEM-1 Epoxy Glass Composite	R683-1, R685-1	-	3690-18	Series 18	T125, T126	R32
3795	4.5	2.73	0.042	15	CEM-1 Epoxy Glass Composite	-	R644-2	3690-8	Series 12	T125, T126	R32
3795-1	4.5	2.73	0.042	4	CEM-1 Epoxy Glass Composite	-	R644-2	3690-8	Series 12	T125, T126	R32
4607	8.43	5.20	0.042	85	FR4 Epoxy Glass	-	-	-	-	T125, T126	R32

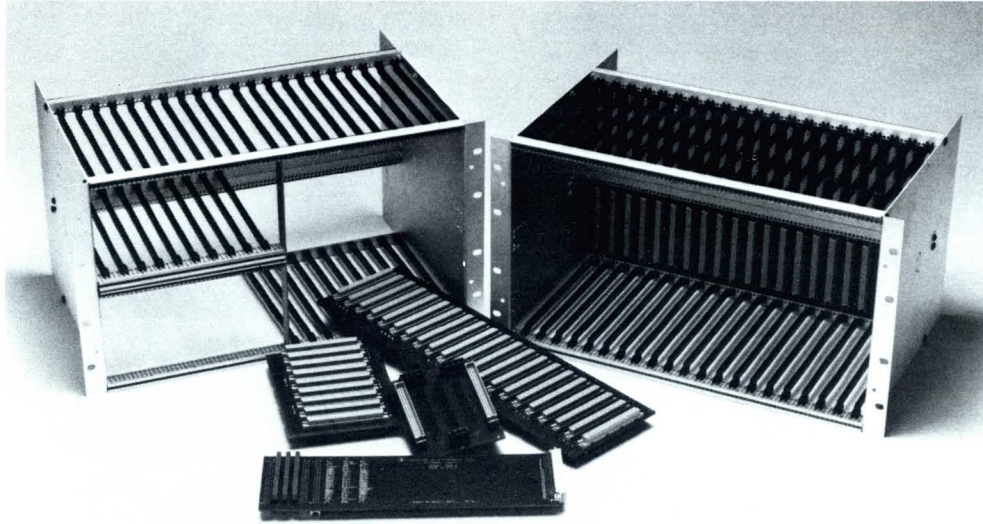
Packaging products from Vector cover a wide range of standard and specialized requirements. From complete, board-ready systems to "Lumber Yard" piece parts, Vector provides the solutions—for

general purpose applications and for many bus architectures, including VME, STD, Multibus, and others.

All products, including specials, are built using a "modular" approach.

Design engineers are provided a wide range of opportunity for adjusting, substituting, interchanging, and modifying standard components and piece parts to meet specific needs. With this approach even

special-order products from Vector provide cost-efficient, quick turnaround solutions for packaging.



Vector Europackaging Card Cages

Part No.	Ass'y Kit	Dimensions			Card Size		Card Guides		Backplane
		Width	Height	Depth	Height	Width	Type	Number	
CCK160-3U	K	19	5.21	9.27	3U	160MM	Noryl, press-in		
CCA160-3U	A	19	5.21	9.27	3U	160MM	Noryl, press-in		
CCB160-3U2	A	19	5.21	9.27	3U	160MM	Noryl, press-in	24	12-slot J1
CCB160-3U1	A	19	5.21	9.27	3U	160MM	Noryl, press-in	42	21-slot J1
CCK220-3U	A	19	5.21	11.63	3U	220MM	Noryl, press-in		
CCA220-3U	A	19	5.21	11.63	3U	220MM	Noryl, press-in		
CCK160-6U	K	19	10.46	9.27	6U	160MM	Noryl, press-in		
CCK160-6UQ	K	4.36	10.46	9.39	6U	160MM	Noryl, press-in		
CCK160-6UH	K	8.36	10.46	9.39	6U	160MM	Noryl, press-in		
CCA160-6U	A	19	5.21	9.27	6U	160MM	Noryl, press-in		
CCB160-6U2	A	19	10.46	9.27	6U	160MM	Noryl, press-in	24	12-slot J1
CCD160-6U2	A	19	10.46	9.27	6U	160MM	Noryl, press-in	24	12-slot J1, J2
CCP160-6U2	A	19	10.46	9.27	6U	160MM	Noryl, press-in	24	12-slot J1/J2 Monolithic
CCP160-6U1	A	19	10.46	9.27	6U	160MM	Noryl, press-in	42	21-slot J1, J2
CCK220-6U	K	19	10.46	11.63	6U	220MM	Noryl, press-in		
CCA220-6U	A	19	10.46	11.63	6U	220MM	Noryl, press-in		
CCK280-6U	K	19	10.46	14.0	6U	280MM	Noryl, press-in		
CCA280-6U	A	19	10.46	14.0	6U	280MM	Noryl, press-in		
CCK340-6U	K	19	10.46	16.36	6U	340MM	Noryl, press-in		
CCA340-6U	A	19	10.46	16.36	6U	340MM	Noryl, press-in		
CCK400-6U	K	19	10.46	18.72	6U	400MM	Noryl, press-in		
CCA400-6U	A	19	10.46	18.72	6U	400MM	Noryl, press-in		
CCK220-9U	K	19	15.71	11.63	6U	220MM	Noryl, press-in		
CCA220-9U	A	19	15.71	11.63	9U	220MM	Noryl, press-in		
CCA280-9U	A	19	15.71	14.0	9U	280MM	Noryl, press-in		
CCK280-9U	K	19	15.71	14.0	9U	280MM	Noryl, press-in		
CCK340-9U	K	19	15.71	16.36	9U	340MM	Noryl, press-in		
CCA340-9U	A	19	15.71	16.36	9U	340MM	Noryl, press-in		
CCK400-9U	K	19	15.71	18.72	9U	400MM	Noryl, press-in		
CCA400-9U	A	19	15.71	18.72	9U	400MM	Noryl, press-in		

Packaging

## Special/Custom Subrack Assemblies

In this section, representative examples of special-order systems are given. Most of these examples are variations on Vector's standard product line. Standard system assemblies include power supplies, cooling fans, AC filters, on/off switches, backplanes and card guides. All manufactured products are built using the latest automated equipment and techniques, all feature industry-standard precision and reliability. The Vector product line also is designed for flexibility and interchangeability because standards often must be modified to solve real problems. Vector provides complete engineering and manufacturing services for cost-effective, rapid turn-around development projects. For custom system assemblies, card cages, and backplanes—built to your specifications—Vector provides the technology, the flexibility, the solutions.

## Custom Integrated Subrack Enclosure

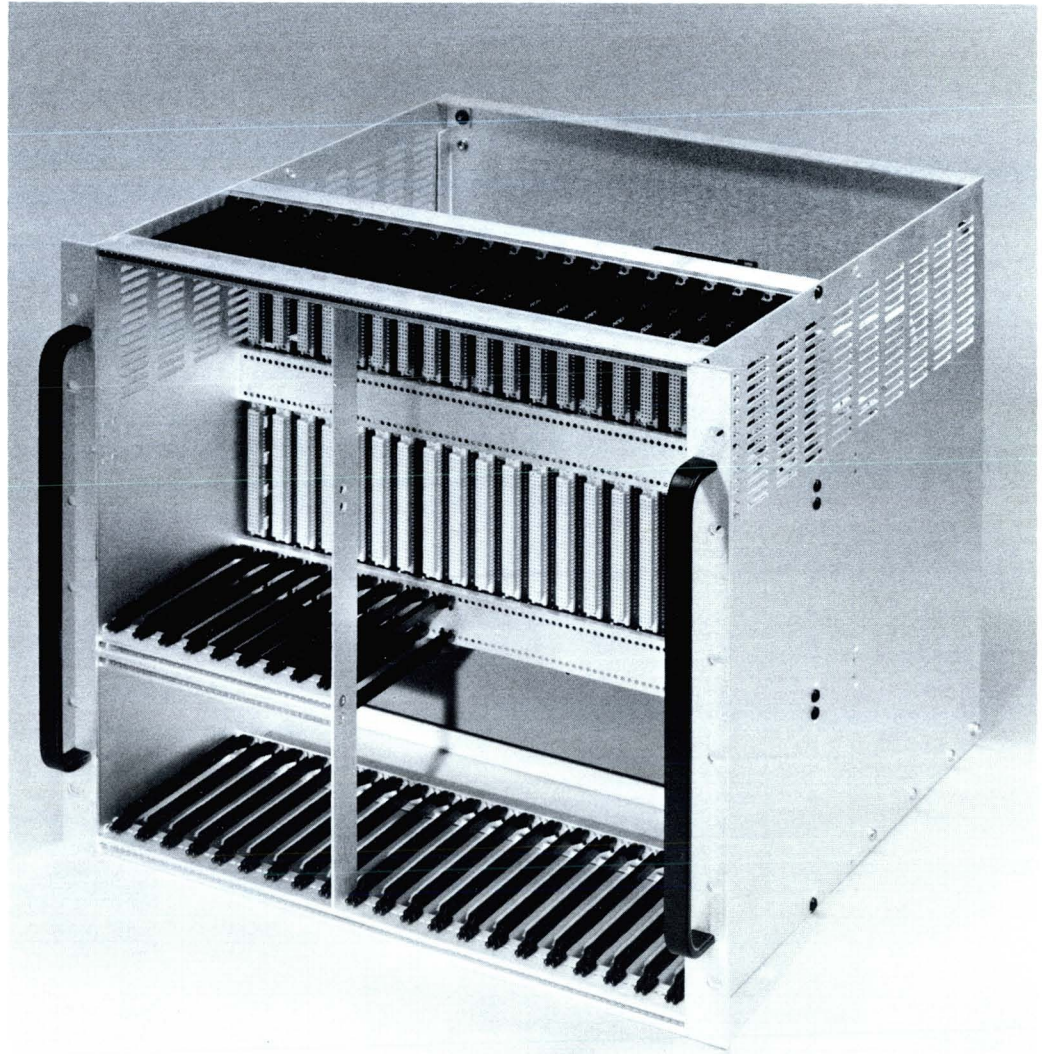
### SE21122C-1

For large systems, 11U enclosure accepts 9U card cage. Features two 1U fan trays: 3 fans per tray, each fan is rated at 115V AC and delivers 115 cubic feet/minute. 500

watt power supply provides 5V at 100 amps, + or -12V at 10 amps, with overload protection and sense lines.

Card cage includes 21 slot, J1 and J2 Monolithic Backplane with massive power bus bar. 115V power entry module at rear of cage includes fuse, filter, and on/off switch. Card cage

and fan trays can be mounted in standard 19" equipment cabinet racks.





### Shielded System Enclosure

#### SE2822DH-1

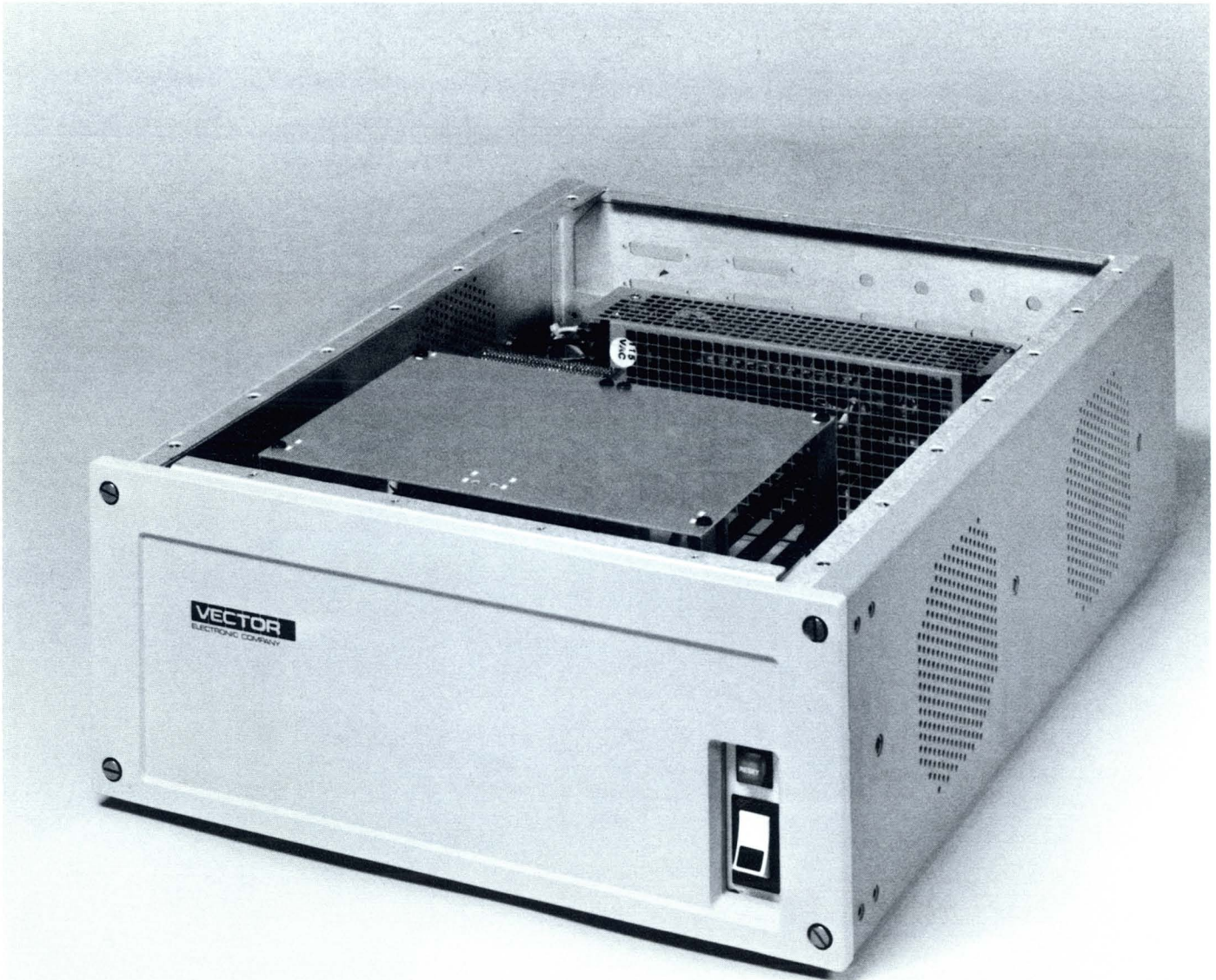
Fully enclosed system provides excellent RF attenuation. Features all-metal construction; all seals are metal-to-metal. Includes ample space for hard disk drive or other components.

Card cage includes 7-slot, J1 and/or J2 backplane, and guides for seven 6U X 160MM boards, mounted horizontally. Power supply is rated at 225 watts and provides 5V at 30 amps, 12V at 4 amps, -12V at 2 amps. Front panel has mounting positions for lighted power and reset switches; rear panel includes custom cutouts

for I/O connectors and a 115V power entry module which includes filter and fuse. AC power cord also included.

The SE2822DH-1 is a custom unit built from Vector's standard shielded system enclosure (Vector Part No. SE2822), available separately. A wide selection of components—backplanes, power sup-

plies, and fans—is available for configuring systems to special needs. Other modifications, such as special cutouts in the rear panel, also can be made.



### Custom Integrated Subrack System

#### SE2822BR-1

8U enclosure assembly accepts up to 21, 6U X

160MM cards. Features fully assembled, 21-slot backplane: one J1 and one J2 with shrouds. Card guides included for all slots. The 1U Fan tray includes three 12V DC fans rated at 60 cubic feet/

minute. 1000 watt AC to DC power supply delivers 5V DC at 150 amps, +12V DC at 10 amps, and -12V DC at 5 amps. Also includes 120V AC power distribution filter and circuit breaker with on/off switch.

The SE2822BR-1 is designed to work with the SU1822BR-1 Mass Storage Unit.



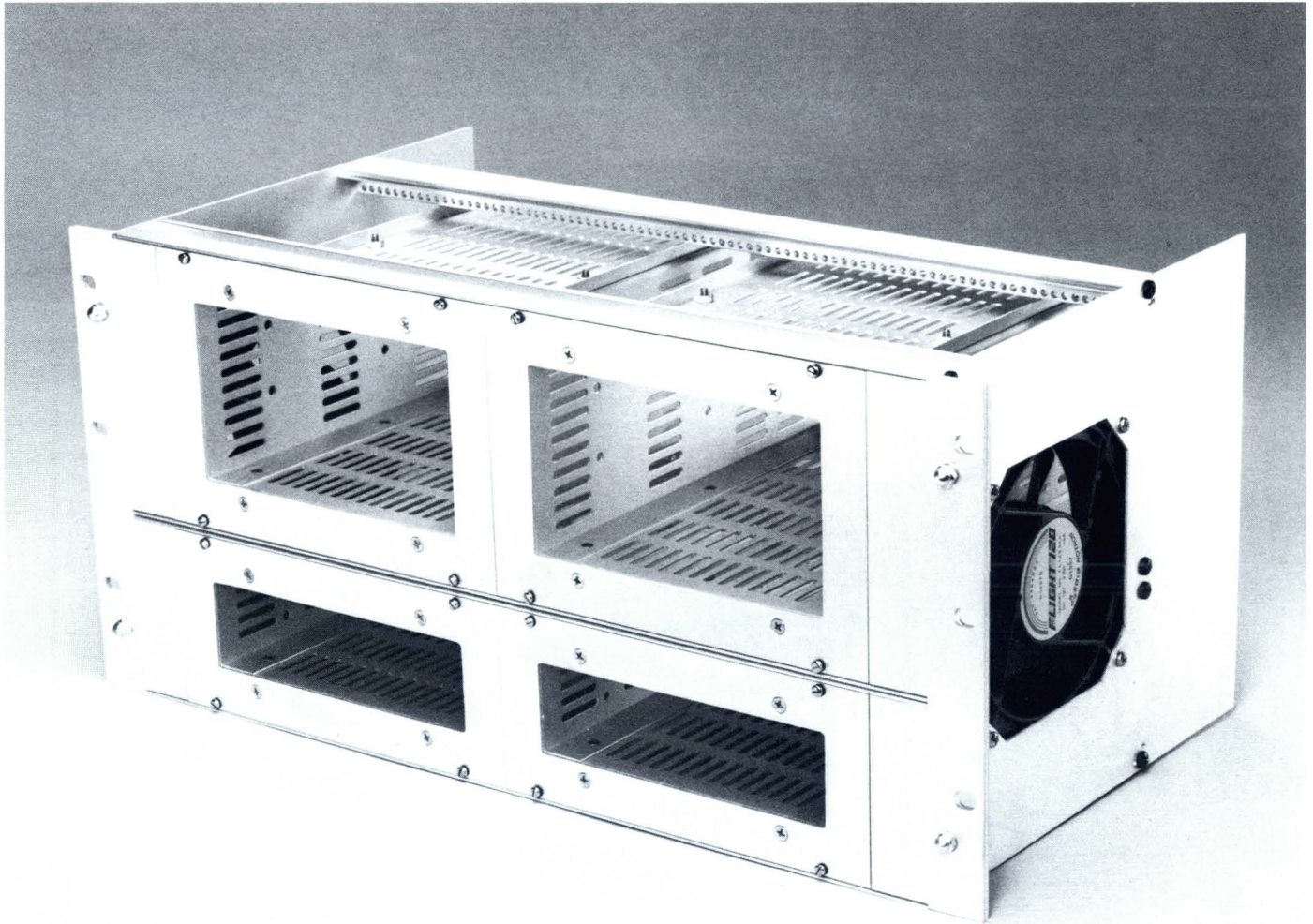
**Custom Subrack for Mass Storage**

**SU1822BR-1**

Mass storage unit, designed to work with SE2822BR-1,

includes peripheral bays for 2 full- and 2 half-height drive devices. Two 12V DC cooling fans rated at 60 cubic feet/minute are side mounted for maximum efficiency. The SU1822BR-1 is equipped with cable

assemblies (installed by user), including: power distribution wiring harness, floppy drive data/control cable, Winchester drive control cable, Winchester drive data cable, and tape drive data/control cable.



Packaging

**Custom Subrack Enclosure for Telecommunications**

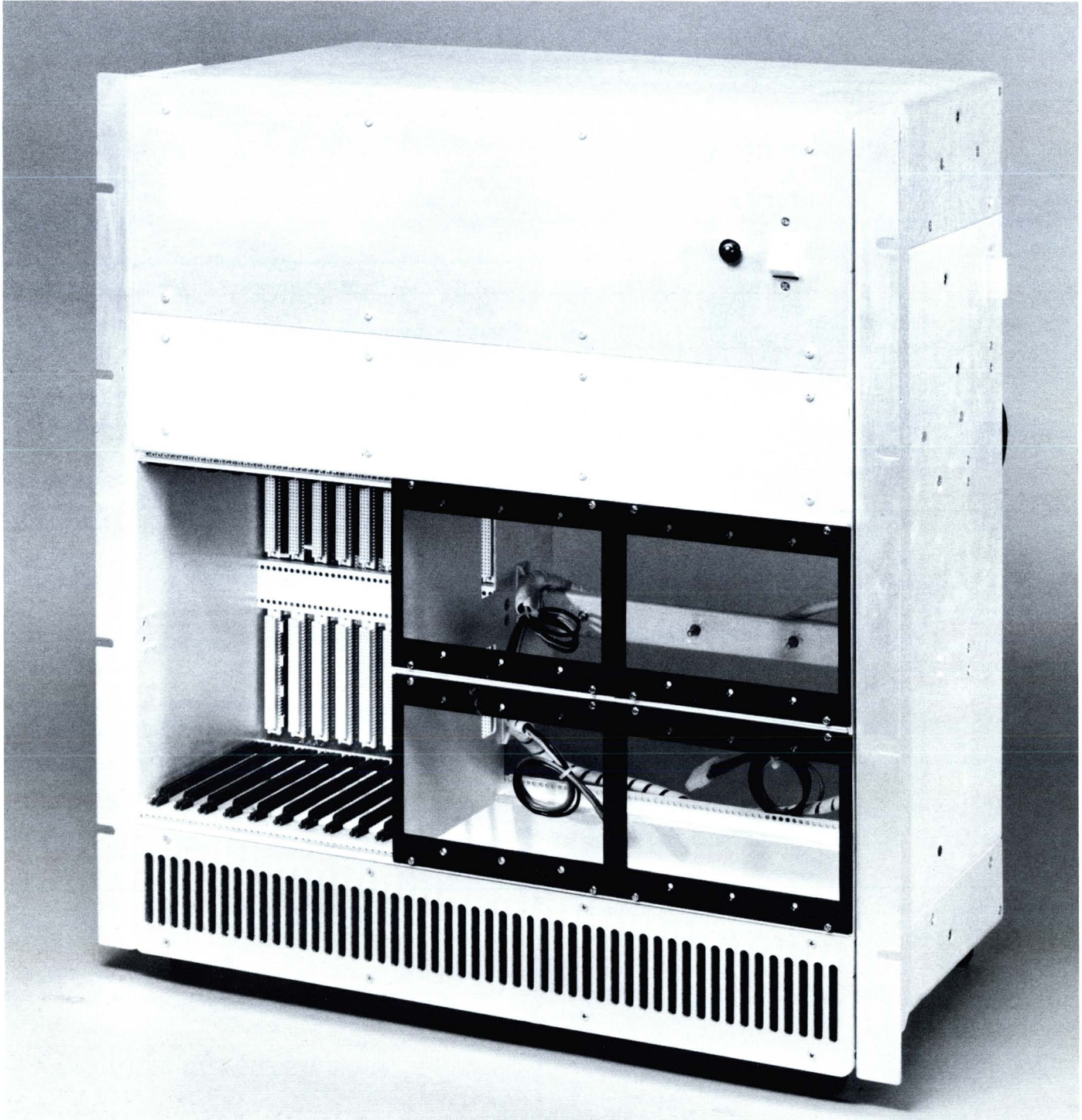
**SE3022**

Designed to fit standard 24" telecommunications

racks. 6U X 160MM card cage designed to VME specifications. Card cage is built around a 10-slot, monolithic (J1 and J2), pressfit-pin backplane. 10 pairs of plastic card guides are installed. System enclosure features: ple-

num with air filter and fan tray with four fans; 12V DC, 60 cubic feet/minute each; four peripheral bays for hard drives; and a DC to DC, 48V switching power supply which delivers 350W, 5V at 50 amps, +12V at 10 amps, and

12V at 9 amps. I/O boards may be mounted in plenum or rear panel.



**All System Assemblies Are Based On Standard Europackaging Subracks and Enclosures— Virtually Any Part or Component Can Be Modified to Meet Special Needs**

**Ruggedly handsome, sturdily built Vector System Subrack Assemblies are equally appropriate on work tables and desktops. Based on standard parts, enclosure assemblies can be configured to meet a wide range of special needs. Call factory for information.**

**Standard Subrack Enclosures are supplied fully assembled; most units include power supply, subrack, fans, and backplane(s). Several backplane options: eight-layer monolithic backplane with on-board termination (combines J1 and J2), six-layer J1, and four-layer J2. J1 and J2 backplanes provide off board termination. Power supplies are matched to system requirements, filtered air flow design provides optimum thermal efficiency. Backplanes and card cages are completely removable for service. System enclosures are available in grey/grey or burgundy/grey finishes.**

## SE2322

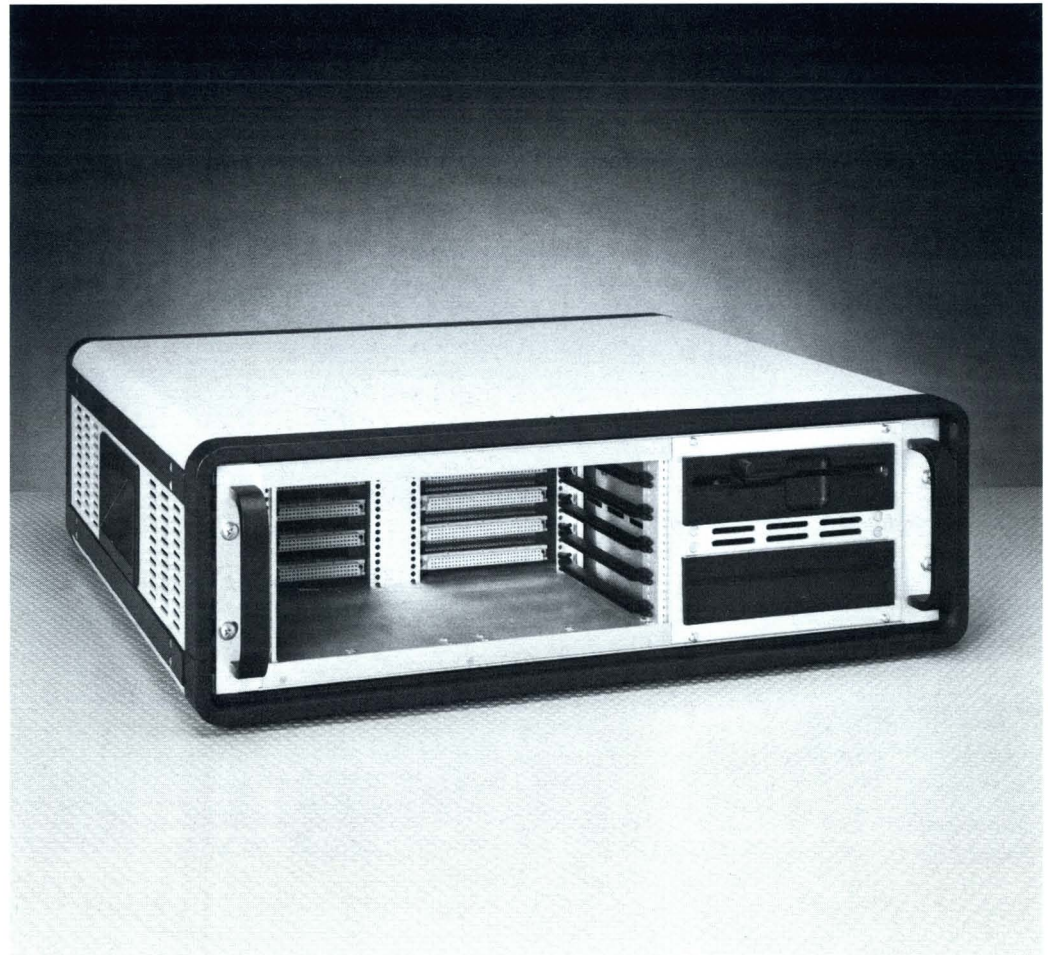
- Low-profile subrack system (3U height) with card guides and high-speed, five slot J1 and J2 backplanes installed horizontally
- Fully assembled, wired, and tested at factory
- Peripheral bay for mounting two half-height, 5 1/4" drives
- Capacity for mounting five, 6U X 160MM cards horizontally
- 175 watt switching power supply
- All electronic components mount within subrack
- Engineered for thermal efficiency: 12V DC fan with air filter and fan guard is mounted to sidewall
- Subrack system fits Vector Enclosure SE1322, available separately

## SE2322A-01

- Integrated Subrack Enclosure System: Vector SE2322 subrack assembly installed in attractive burgundy/grey enclosure (Vector Part No. SE1322A)
- Subrack is easily removable for servicing
- Perforated sidewalls provide excellent heat dispersion

## SE2322B-01

- Integrated Subrack Enclosure System: Vector SE2322 subrack assembly installed in attractive grey/grey enclosure (Vector Part No. SE1322B)
- Subrack is easily removable for servicing
- Perforated sidewalls provide excellent heat dispersion



SE2322A-01 SHOWN

### SE2722

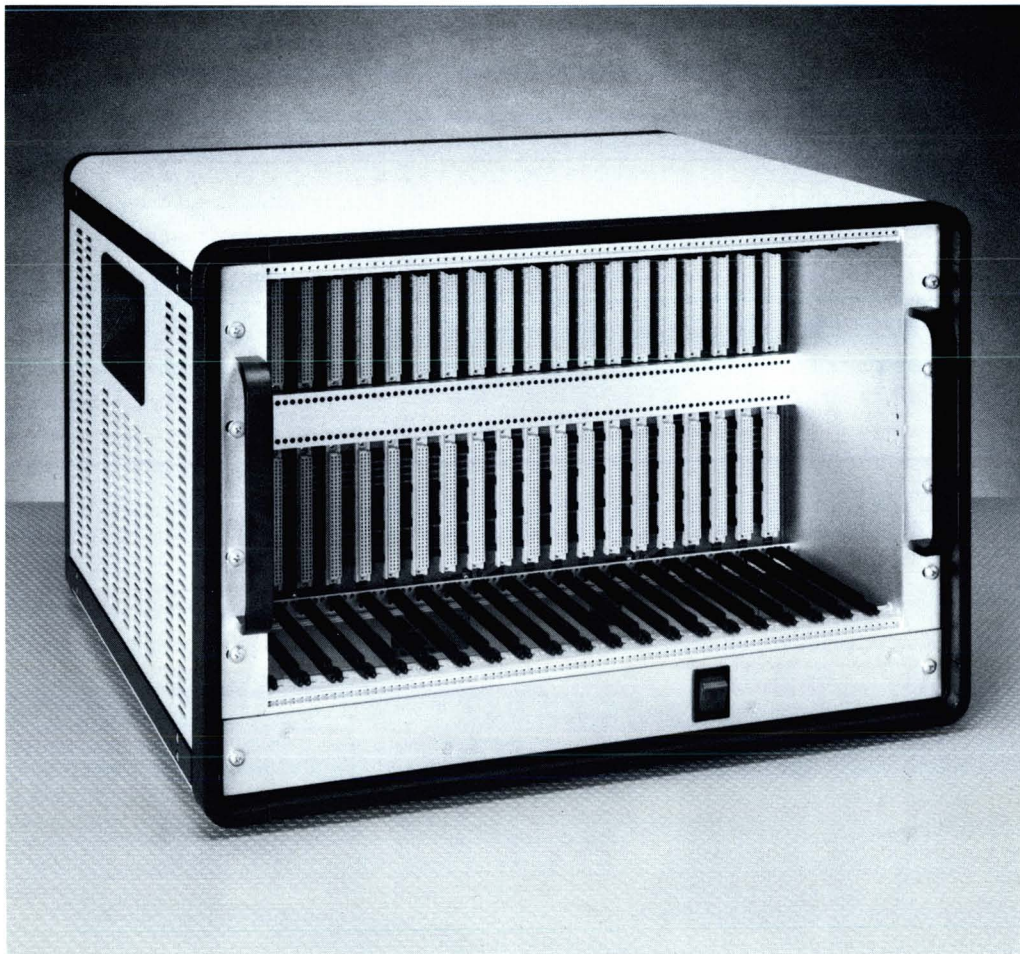
- 6U subrack system—fully assembled, wired, and tested at factory
- High-performance, 21-slot VME Monolithic Backplane (J1 and J2) and Power Bus Bar are factory-installed
- Capacity for mounting 21, 6U X 160MM cards—plastic card guides are installed
- 500 watt power supply
- Subrack system fits Vector Enclosure SE1722, available separately

### SE2722A-01

- Integrated Subrack Enclosure System—Vector SE2722 subrack assembly installed in attractive burgundy/grey enclosure (Vector Part No. SE1722A)
- Engineered for thermal efficiency: perforated side-walls provide excellent heat dispersion, installed 1U fan tray has three 12V DC fan units for optimum circulation

### SE2722B-01

- Integrated Subrack Enclosure System—Vector SE2722 subrack assembly with attractive grey/grey enclosure (Vector Part No. SE1722B)
- Engineered for thermal efficiency: perforated side-walls provide excellent heat dispersion, installed 1U fan tray has three 12V DC fan units for optimum circulation



SE2722A-01 SHOWN

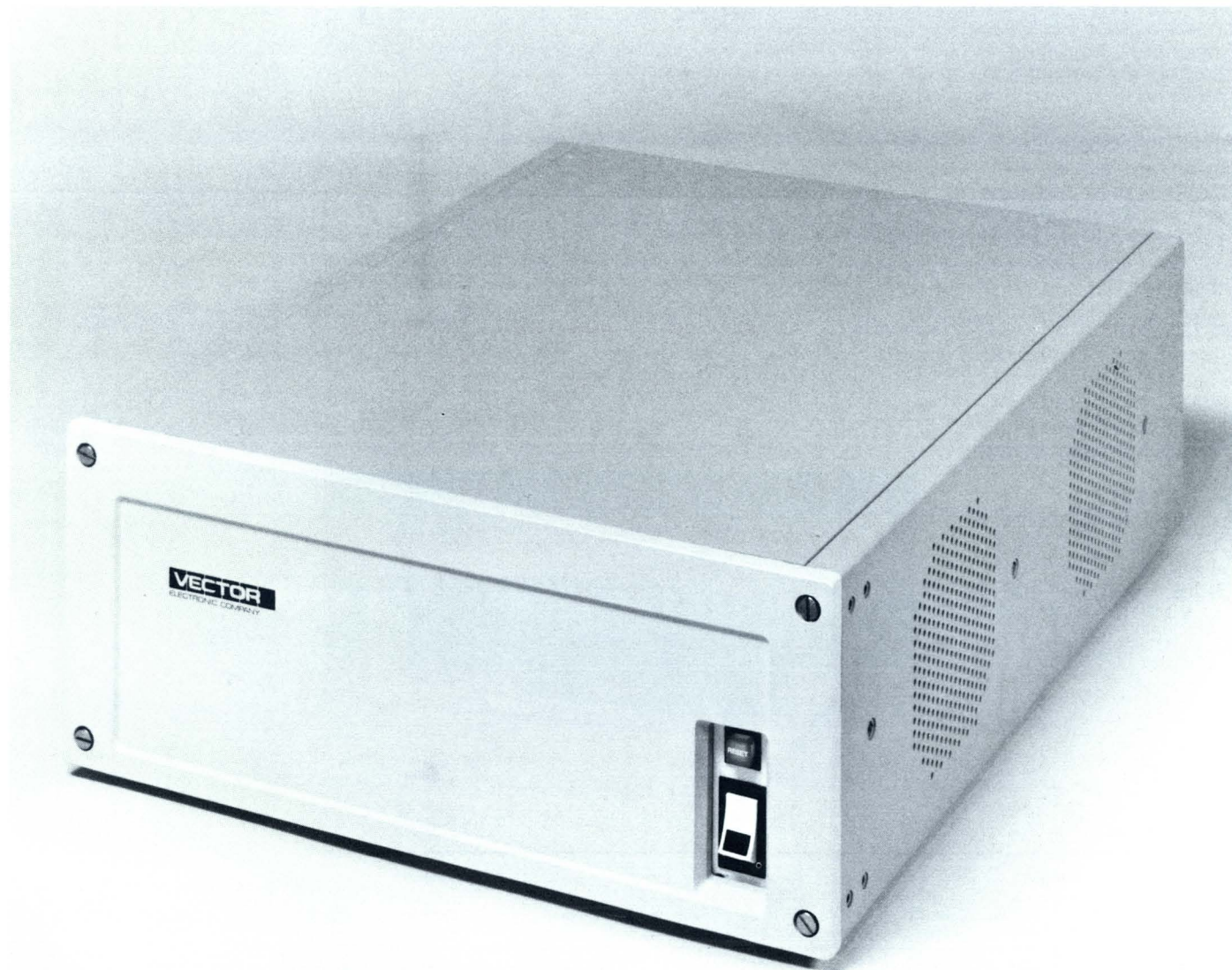
## Shielded Enclosure Rack Dimensions: 16.88" x 6.75" x 21.75"

### SE2822:

16.88" Wide by 6.75" High by 21.75" Deep. All metal, fully enclosed system enclosure. All seals are metal-to-metal for excellent RF attenuation. Ideal

for prototyping and limited production applications. This enclosure can be used to configure systems from standard Vector components —backplanes, power supplies, and cooling systems —for maximum flexibility and cost-effectiveness. Enclosure can be modified to accommodate I/O ports and to meet special re-

quirements. Fully assembled enclosure includes top, bottom, front, rear, and side panels. Mounting hardware also included. See Vector Part No. SE2822DH-1 for a representative example of a custom system built around the SE2822 enclosure.



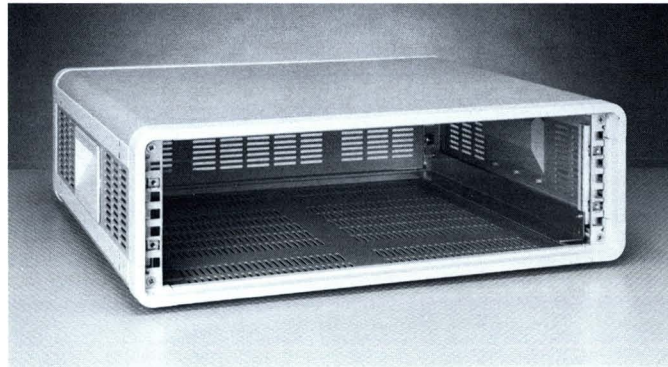
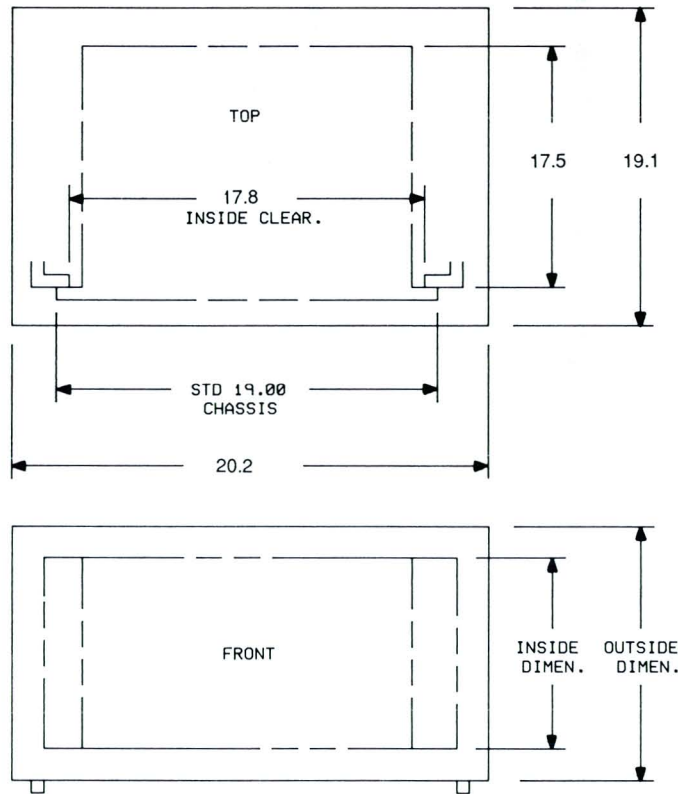
Packaging

Subrack Enclosures

Vector Subrack Enclosures for 19" card cages are equally appropriate on desktop or worktable. Fully assembled, featuring recessed, side mount handles and lightweight aluminum construction. Cooling holes in side, rear, and bottom panels for maximum heat dispersion. Fans are mounted on sidewalls in SE1322 Enclosures. Mounting brackets are provided for mounting fan trays along top or bottom of cage in SE1722 enclosures. Enclosures available in burgundy/grey and grey/grey. Protective rubber feet and hardware for mounting card cages included.

**SE1322A,B:**  
Europackaging subracks CC Series 160-3U thru 340-3U and Card Cage Series 12, 13, and 14 (Except half width cages)

**SE1722A,B:**  
Europackaging subracks CC Series 160-6U thru 340-6U and Card Cage Series 17, 18, and 100



Part Number	Height		Width		Depth		Color	Subrack
	Inside Dimension	Outside Dimension	Inside Dimension	Outside Dimension	Inside Dimension	Outside Dimension		
SE1322A	5.2"	6.4"	17.8"	20.2"	17.5"	19.1"	Burg/Grey	CC Series 160-3U thru 340-3U
SE1322B	5.2"	6.4"	17.8"	20.2"	17.5"	19.1"	Grey/Grey	
SE1722A	12.2"	13.4"	17.8"	20.2"	17.5"	19.1"	Burg/Grey	CC Series 160-6U thru 340-6U
SE1722B	12.2"	13.4"	17.8"	20.2"	17.5"	19.1"	Grey/Grey	

For custom versions, consult factory



### Vector DIN-Based Europackaging Subracks Are Versatile Prototyping And Production Tools

All products are designed in accordance with DIN 41914 specifications. Subracks are available in standard 19" widths or in 40 HP (8.36") and 20 HP (4.36") widths. Glass-filled Noryl card guides provide rigidity and lock in securely, yet can be installed and removed without special tools. Card guide mounting holes are positioned at each HP (0.2" centers) on T-struts. Other outstanding features include:

- All side panels deeper than 160MM include mounting holes for positioning front extrusions at 60MM increments
- Brushed aluminum construction
- 84 HP adapter strip allows mixing backplanes and DIN connectors
- DIN connectors, dress panels, cage handles, and decorative enclosures available separately
- Subrack assemblies and kits can be configured to custom specifications—call factory for information

### A Word About Part Numbers:

In this section, there are five basic types of subracks:

**CCK = Card cage frame kit**—easy assembly kits with hardware and instructions. Card guides and backplanes available separately.

**CCA = Card cage assembly**—factory-assembled version of CCK.

**CCB = Card cage assembly**—factory-assembled version of CCK with J1 or J2 backplane and card guides.

**CCD = Card cage assembly**—factory-assembled version of CCK with J1 and J2 backplanes and card guides.

**CCP = Card cage assembly**—factory-assembled version of CCK with monolithic backplane (J1 and J2) and card guides.

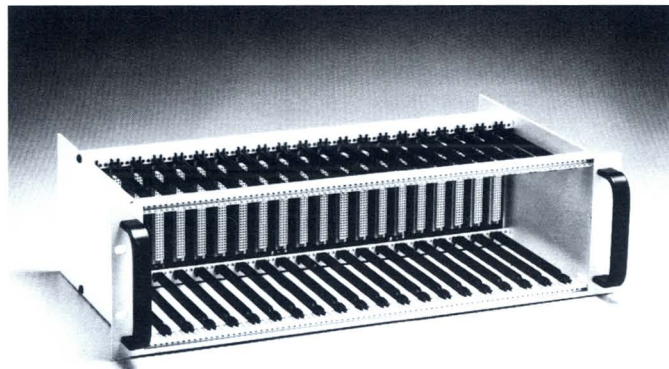
### 3U X 160MM Rack Dimensions: 19" x 5.21" x 9.44"

#### CCK160-3U

- Easy assembly subrack frame kit
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-160, available separately
- Guide positions are variable at 0.2" increments

#### CCA160-3U

- Factory-assembled version of CCK160-3U
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-160, available separately
- Guide positions are variable at 0.2" increments



CCA 160-3U SHOWN (Backplane, dress panels, and handles not included)

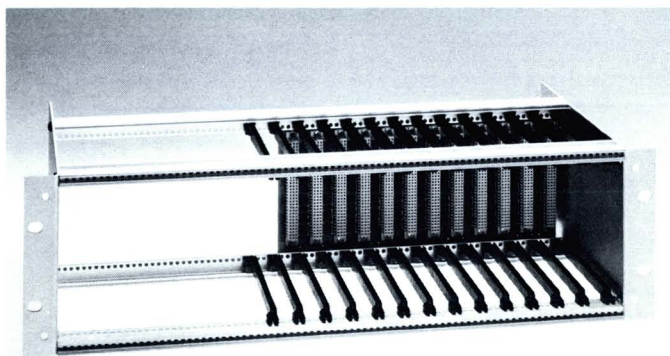
**3U X 160MM  
Rack Dimensions:  
19" x 5.21" x 9.27"**

**CCB160-3U2  
(replaces C316EAA28)**

- Factory-assembled version of CCK160-3U
- 12-slot J1 backplane installed
- 12 pairs of glass-filled Noryl card guides (Part No. CG1-160) are installed
- Guide positions are variable at 0.2" increments

**CCB160-3U1  
(replaces C316BAA42)**

- Factory-assembled subrack version of CCK160-3U
- 21-slot J1 backplane installed
- 21 pairs of glass-filled Noryl card guides (Part No. CG1-160) are installed
- Guide positions are variable at 0.2" increments



CCB160-3U2 SHOWN

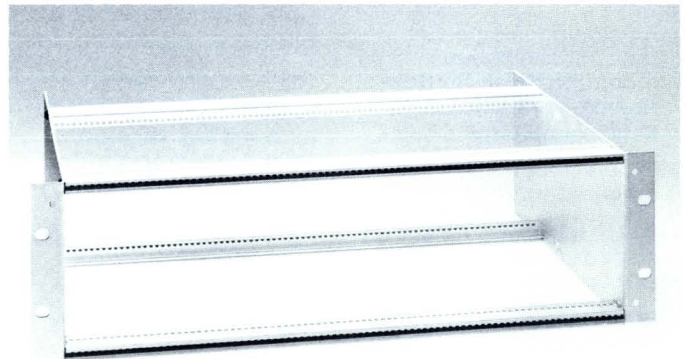
**3U X 220 MM  
Rack Dimensions:  
19" x 5.21" x 11.63"**

**CCK220-3U**

- Easy assembly subrack frame kit
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-220, available separately
- Guide positions are variable at 0.2" increments

**CCA220-3U**

- Factory-assembled version of CCK220-3U
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-220, available separately
- Guide positions are variable at 0.2" increments



CCK220-3U SHOWN

**6U X 160 MM  
Rack Dimensions:  
19" x 10.46" x 9.27"**

**CCK160-6U**

- Easy assembly subrack frame kit
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-160, available separately
- Guide positions are variable at 0.2" increments

**CCK160-6UQ  
(formerly C160A6U5N)**

- Easy assembly subrack frame kit, narrow-width version CCK160-6U
- Dimensions: 4.36" X 10.46" X 9.39"
- Accepts Vector 5-slot backplanes: Part Nos. VMEBP5J1 and VMEBP5J2, available separately
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-160, available separately
- Guide positions are variable at 0.2" increments

**CCK160-6UH  
(formerly C160A6U10N)**

- Easy assembly subrack kit, half-width version of CCK160-6U
- Dimensions: 8.36" X 10.46" X 9.39"
- Accepts Vector 10-slot VME backplanes: Part Nos. VMEBP10J1 and VMEBP10J2, available separately

- Accepts Vector glass-filled Noryl card guides, Part No. CG1-160, available separately
- Guide positions are variable at 0.2" increments

**CCA160-6U**

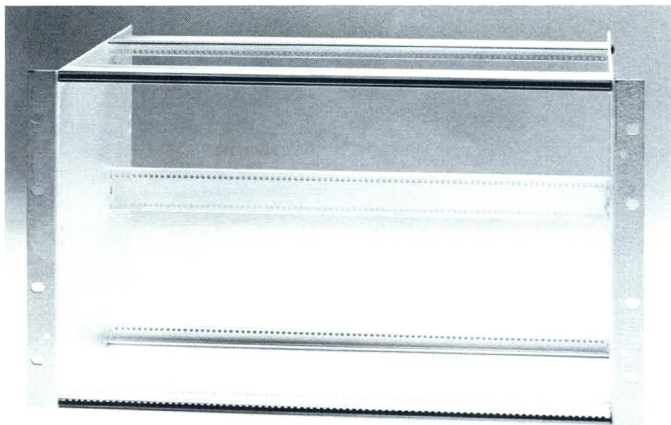
- Factory-assembled version of CCK160-6U
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-160, available separately
- Guide positions are variable at 0.2" increments

**CCB160-6U2  
(replaces C616EAA28)**

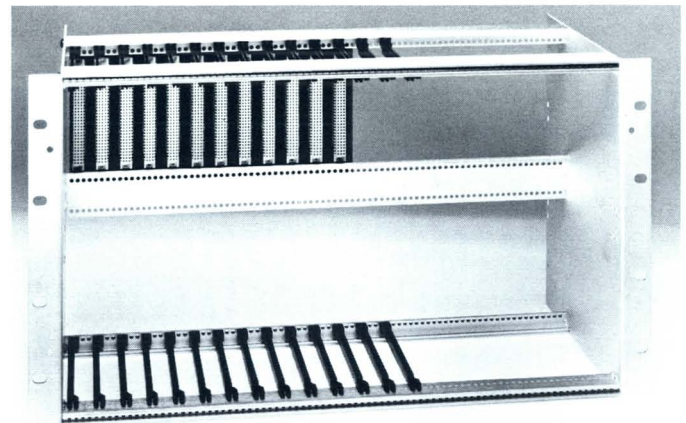
- Factory-assembled version of CCK160-6U
- 12-slot J1 backplane installed
- 12 pairs of glass-filled Noryl card guides installed
- Guide positions are variable at 0.2" increments

**CCD160-6U2  
(replaces C616EEA28)**

- Factory-assembled version of CCK160-6U
- 12-slot J1 and J2 backplanes are installed
- 12 pairs of glass-filled Noryl card guides installed
- Guide positions are variable at 0.2" increments



CCA160-6U SHOWN



CCB160-6U2 SHOWN

Packaging

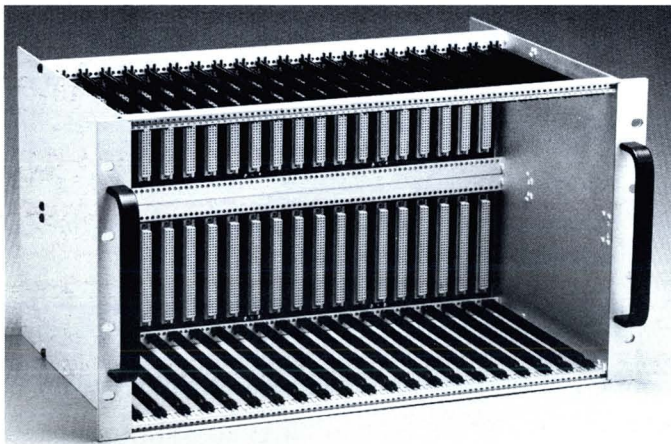
**6U X 160MM  
Rack Dimensions:  
19" x 10.46" x 9.27"**

**CCP160-6U2  
(replaces C616PAA28)**

- Factory-assembled version of CCK160-6U
- High-performance, 12-slot monolithic backplane (J1 and J2) installed
- 12 pairs of glass-filled Noryl card guides are installed
- Guide positions are variable at 0.2" increments

**CCP160-6U1  
(formerly C616PAA42)**

- Factory-assembled version of CCK160-6U
- High-performance, 21-slot monolithic backplane (J1 and J2) installed
- 21 pairs of glass-filled Noryl card guides installed
- Guide positions are variable at 0.2" increments



CCP160-6U1 SHOWN (Handles and dress panels not included)

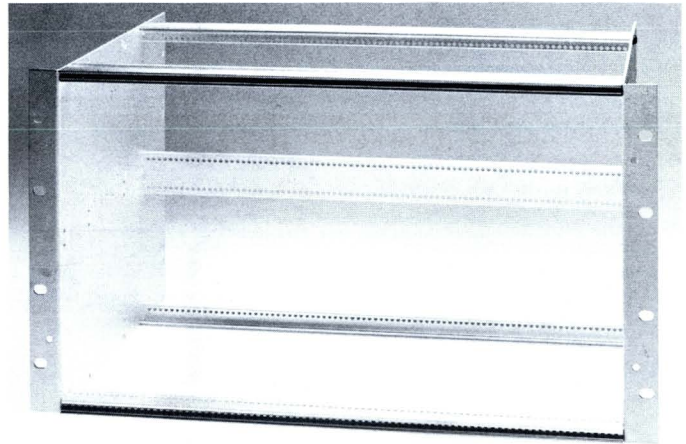
**6U X 220MM  
Rack Dimensions:  
19" x 10.46" x 11.63"**

**CCK220-6U**

- Easy assembly subrack frame kit
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-220, available separately
- Guide positions are variable at 0.2" increments

**CCA220-6U**

- Factory-assembled version of CCK220-6U
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-220, available separately
- Guide positions are variable at 0.2" increments



CCA220-6U SHOWN

**6U X 280MM**  
**Rack Dimensions:**  
**19" x 10.46" x 14.00"**

**CCK280-6U**

- Easy assembly subrack frame kit
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-280, available separately
- Guide positions are variable at 0.2" increments

**CCA280-6U**

- Factory-assembled version of CCK280-6U
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-280, available separately
- Guide positions are variable at 0.2" increments

**6U X 340MM**  
**Rack Dimensions:**  
**19" x 10.46" x 16.36"**

**CCK340-6U**

- Easy assembly subrack frame kit
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-340, available separately
- Guide positions are variable at 0.2" increments

**CCA340-6U**

- Factory-assembled version of CCK340-6U
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-340, available separately
- Guide positions are variable at 0.2" increments

**6U X 400MM**  
**Rack Dimensions:**  
**19" x 10.46" x 18.72"**

**CCK400-6U**

- Easy assembly subrack frame kit
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-400, available separately
- Guide positions are variable at 0.2" increments

**CCA400-6U**

- Factory-assembled version of CCK400-6U
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-400, available separately
- Guide positions are variable at 0.2" increments

**9U X 220MM**  
**Rack Dimensions:**  
**19" x 15.71" x 11.63"**

**CCK220-9U**

- Easy assembly subrack frame kit
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-220, available separately
- Guide positions are variable at 0.2" increments

**CCA220-9U**

- Factory-assembled version of CCK220-9U
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-220, available separately
- Guide positions are variable at 0.2" increments

**9U X 280MM**  
**Rack Dimensions:**  
**19" x 15.71" x 14.00"**

**CCK280-9U**

- Easy assembly subrack frame kit
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-280, available separately
- Guide positions are variable at 0.2" increments

**CCA280-9U**

- Factory-assembled version of CCK280-9U
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-280, available separately
- Guide positions are variable at 0.2" increments

**9U X 340MM**  
**Rack Dimensions:**  
**19" x 15.71" x 16.36"**

**CCK340-9U**

- Easy assembly subrack frame kit
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-340, available separately
- Guide positions are variable at 0.2" increments

**CCA340-9U**

- Factory-assembled version of CCK340-9U
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-340, available separately
- Guide positions are variable at 0.2" increments

**9U X 400MM**  
**Rack Dimensions:**  
**19" x 15.71" x 18.72"**

**CCK400-9U**

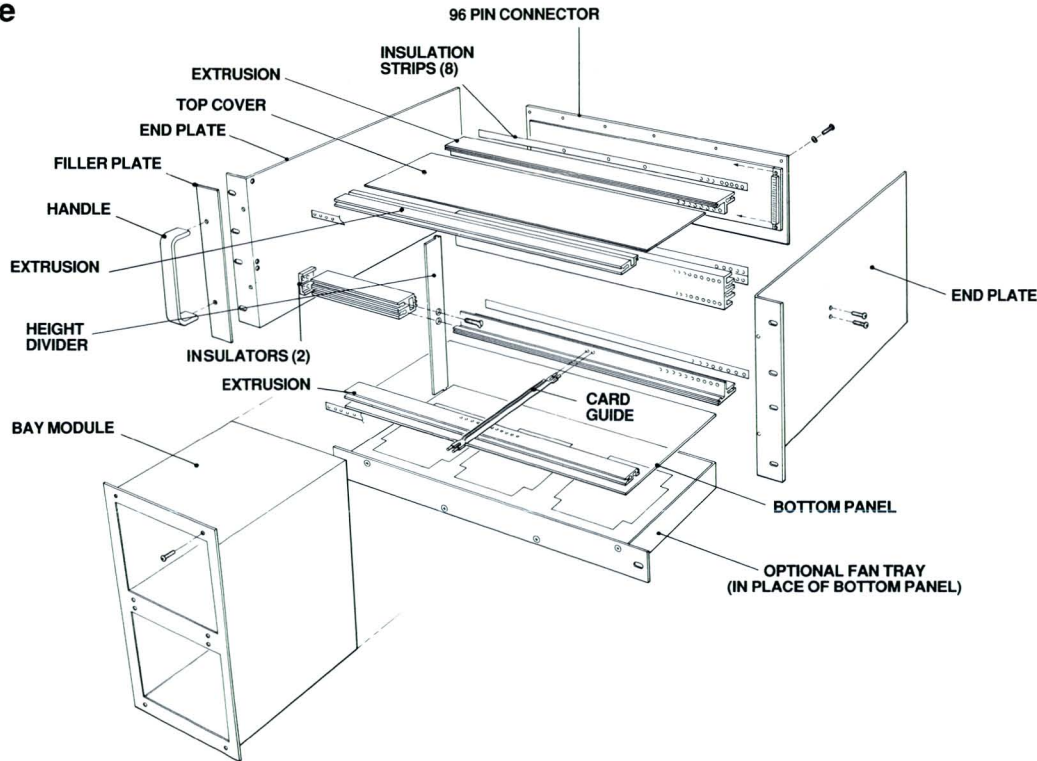
- Easy assembly subrack frame kit
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-400, available separately
- Guide positions are variable at 0.2" increments

**CCA400-9U**

- Factory-assembled version of CCK400-9U
- Accepts Vector glass-filled Noryl card guides, Part No. CG1-400, available separately
- Guide positions are variable at 0.2" increments

**Packaging**

Parts Guide



Fan Trays

Vector Fan Trays, with 12V DC fans, are fully assembled, factory-tested, and fit into all standard 19" racks. Highly reliable fans supply airflow at 60 cubic feet/minute. All fan trays feature solid state, brushless fan motors, and include DC mating connector housing and pins. All electrical components and finger-guard covers are UL approved or UL recognized. Flame retardant construction. Instructions included. 12V DC fans, supplying airflow at 90 cubic feet/minute, are available per special order.

**FT1U-1:**  
One fan,  
19" x 1.71" x 7.75"

**FT1U-2:**  
Two fans,  
19" x 1.71" x 7.75"

**FT1U-3:**  
Three fans,  
19" 1.71" x 7.75"

**FT1U-4:**  
Four fans,  
19" x 1.71" x 12.95"

**FT1U-5:**  
Five fans,  
19" x 1.71" x 12.95"

**FT1U-6:**  
Six fans,  
19" x 1.71" x 12.95"

Peripheral Bay Modules

Easy assembly Vector Peripheral Bay Module Kits for 3 1/2" and 5 1/4" hard disk drives, floppy drives, and tape drives. Brushed aluminum finish. Designed for mounting with standard Vector card guides. Assembly and mounting hardware included.

**PB160-3U-1**

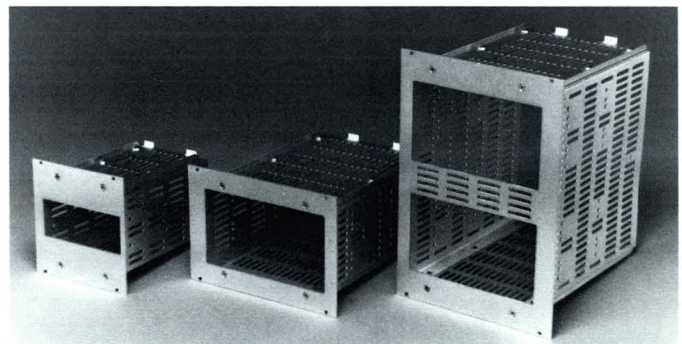
- Fits CC Series 160-3U card cages—accepts 3 1/2" drives

**PB220-3U-1**

- Fits CC Series 220-3U card cages—accepts 5 1/4" drives

**PB220-6U-1**

- Fits CC Series 220-6U card cages—accepts 5 1/4" drives



**Card Guides**

Specially designed card guides provide easy installation, repositioning, and removal of cards without special tools, and without damage to cards. Constructed from glass-filled Noryl material.

- For 160MM and 220MM sizes, guides are one piece
- For card sizes greater than 220MM, card guides and end pieces are supplied separately
- Packages of 4
- For non-metric card guides, see Vector-Pak Card Guides (CG2 series), for other sizes see Lumber Yard Extrusion Parts

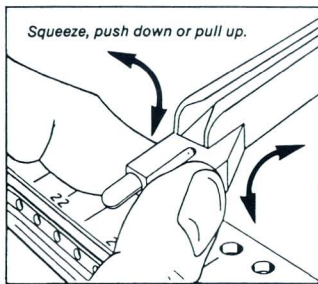
**CG1-160:**  
160MM Card Guide

**CG1-220:**  
220MM Card Guide

**CG1-280U:**  
280MM Card Guide

**CG1-340U:**  
340MM Card Guide

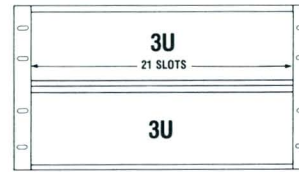
**CG1-400U:**  
400MM Card Guide



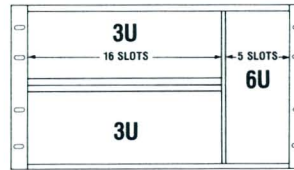
**Dividers**

Vector Divider Kits provide a unique method for mixing cards of different heights or depths within the same card cage. Height divider kits are related to backplane slots, not horizontal pitch, all backplane slots remain functional. For example, a DK16R height divider kit partitions a 6U card cage into three card sections: two 16-slot, 3U sections on the right side and one 5-slot, 6U section on the left. Height dividers may be oriented to right or left side of card cage. Depth dividers also are related to backplane slots, no slot is lost. For example, a DK280-5L depth divider kit in a 9U X 280MM card cages partitions the cage into two card sections: one 5-slot 280MM section on the left and one 16-slot 160MM or 220MM section on the right. Vector Dividers are available in kit form or as separate panels. Mounting hardware provided with kits.

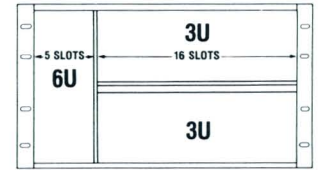
**HEIGHT DIVIDERS**



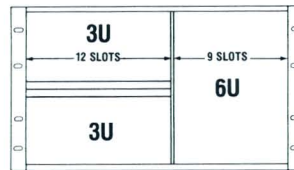
**DK 21**  
21 SLOT FULL DIVIDER



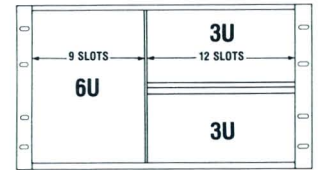
**DK 16R**  
16 SLOT (65 HP) DIVIDER/ RIGHT



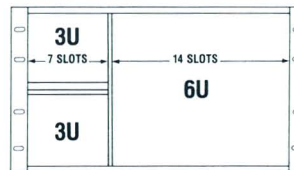
**DK 16L**  
16 SLOT (64 HP) DIVIDER/ LEFT



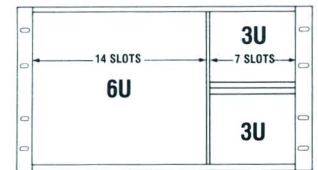
**DK 12R**  
12 SLOT (49 HP) DIVIDER/ RIGHT



**DK 12L**  
12 SLOT (48 HP) DIVIDER/ LEFT



**DK 7R**  
7 SLOT (29 HP) DIVIDER/ RIGHT

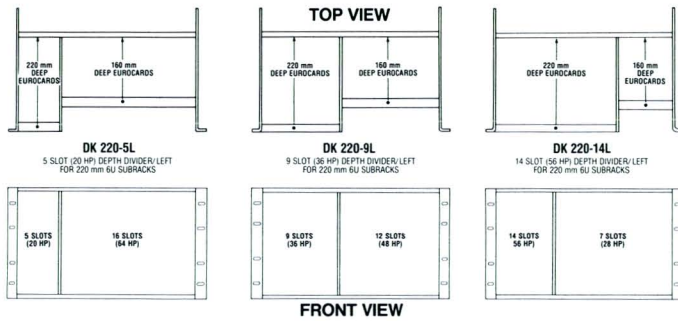


**DK 7L**  
7 SLOT (28 HP) DIVIDER/ LEFT

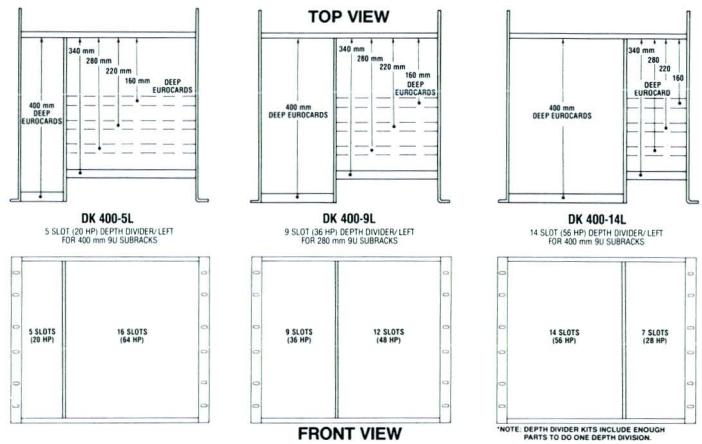
**Height Dividers**

Part No.	Description	Applicable Subrack
DK21	Full Divider	CC Series 160-6U, 220-6U, 280-9U, 400-9U
DK16R	16 Slot Divider/Right	CC Series 160-6U, 220-6U
DK16L	6 Slot Divider/Left	
DK12R	12 Slot Divider/Right	
DK12L	12 Slot Divider/Left	
DK7R	7 Slot Divider/Right	
DK7L	7 Slot Divider/Left	

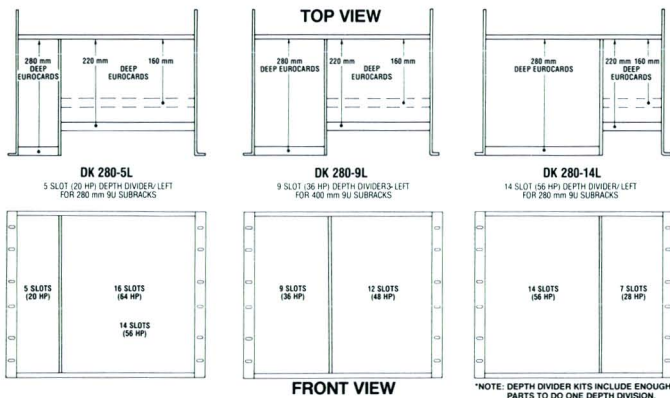
## DEPTH DIVIDERS FOR 220 mm DEEP SUBRACKS



## DEPTH DIVIDERS FOR 400 mm DEEP SUBRACKS



## DEPTH DIVIDERS FOR 280 mm DEEP SUBRACKS



\*NOTE: DEPTH DIVIDER KITS INCLUDE ENOUGH PARTS TO DO ONE DEPTH DIVISION.

\*NOTE: DEPTH DIVIDER KITS INCLUDE ENOUGH PARTS TO DO ONE DEPTH DIVISION.

### Depth Dividers

Part No.	Description	Applicable Subrack
DK220-5L	5 Slot, 220mm, 6U Left	CC Series 220-6U
DK220-9L	9 Slot, 220mm, 6U Left	
DK220-14L	14 Slot, 220mm, 6U Left	
DK280-5L	5 Slot, 280mm, 9U Left	CC Series 280-9U
DK280-9L	9 Slot, 280mm, 9U Left	
DK280-14L	14 Slot, 280mm, 9U Left	
DK400-5L	5 Slot, 400mm, 9U Left	CC Series 400-9U
DK400-9L	9 Slot, 400mm, 9U Left	
DK400-14L	14 Slot, 400mm, 9U Left	

### Divider Panels

Part No.	Description
5260258	6U x 160mm Depth Divider Panel
5250231	6U x 220mm Depth Divider Panel
5260256	6U x 280mm Depth Divider Panel
5260241	6U x 340mm Depth Divider Panel
5260244	6U x 400mm Depth Divider Panel
5260259	9U x 160mm Depth Divider Panel
5260257	9U x 220mm Depth Divider Panel
5260293	9U x 280mm Depth Divider Panel
5260242	9U x 340mm Depth Divider Panel
5260296	9U x 400mm Depth Divider Panel

### Width Dividers

Part No.	Description
5260232	6U Width Divider Panel
5260263	9U Width Divider Panel



**Front Panels for Printed Circuit Boards**  
FP04, FP08

Screw-mounted front panel kits include handle and identification panel. Ideal for mounting I/O connectors, LEDs, and other components to front of subrack. Can be used to cover empty card slots. Available in 3U, 6U, and 9U heights and in two widths: 4HP (0.788") and 8HP (1.588"). All mounting hardware, including board mounting support bracket and hardware, also included. Brushed aluminum panel with clear chem film plating matches standard Vector packaging products.

Front Panels for Printed Circuit Boards

Part No.	Width	Height
FP04-3U	0.788"	5.06"
FP08-3U	1.588"	5.06"
FP04-6U	0.788"	10.31"
FP08-6U	1.588"	10.31"
FP04-9U	0.788"	15.56"
FP08-9U	1.588"	15.56"

**Filler Panels**  
FP-3U, FP-6U, FP-9U

Filler panels mount over subrack flanges to provide a "finished" look to subracks and cage front panels. .388" width, available in 3U, 6U, and 9U heights. Brushed aluminum with clear chem film finish matches standard Vector packaging products. Mounting hardware included.

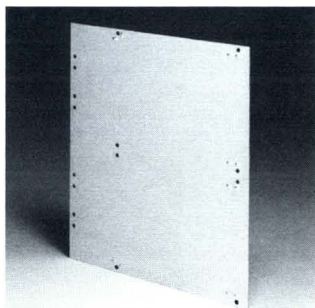
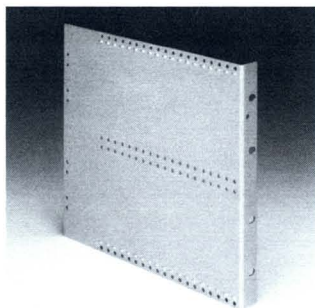
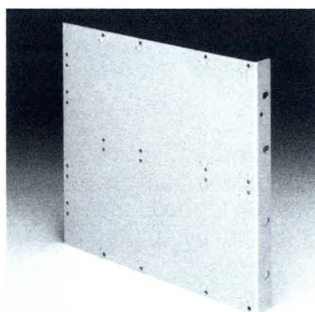
**Side Panels**

Vector Europackaging Side Panels feature brushed aluminum construction with clear chem film finish. Sizes from 3U x 160mm to 9U x 400mm, in three versions:

**With Flanges:** Provides front mounting surface

**Universal:** Versatile side-wall with flanges—strut mounting holes positioned on 12mm centers for maximum flexibility.

**Flangeless:** For maximum economy of space.



**3U X 160**

- 5260475: Flangeless
- 5260251: With Flanges

**3U X 220**

- 5260476: Flangeless
- 5260252: With Flanges

**3U X 280**

- 5260477: Flangeless
- 5260264: With Flanges

**6U X 160**

- 5260267: Flangeless
- 5260204: With Flanges

**6U X 220**

- 5260266: Flangeless
- 5260312: Universal
- 5260212: With Flanges

**6U X 280**

- 5260472: Flangeless
- 5260289: Universal
- 5260247: With Flanges

**6U X 340**

- 5260473: Flangeless
- 5260239: With Flanges

**6U X 400**

- 5260474: Flangeless
- 5260309: Universal
- 5260243: With Flanges

**9U X 160**

- 5260467: Flangeless
- 5260249: With Flanges

**9U X 220**

- 5260468: Flangeless
- 5260311: Universal
- 5260248: With Flanges

**9U X 280**

- 5260469: Flangeless
- 5260291: Universal
- 5260294: With Flanges

**9U X 340**

- 5260470: Flangeless
- 5260240: With Flanges

**9U X 400**

- 5260471: Flangeless
- 5260308: Universal
- 5260299: With Flanges

Packaging

**Top/Bottom Covers**  
**AC160, AC220, AC280,**  
**AC340, AC400**

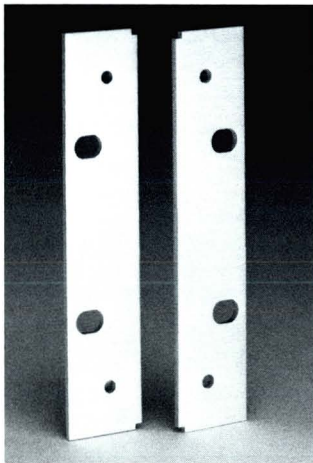
Top and Bottom Panels provide maximum protection for card cage interiors. Perforated to ensure proper ventilation, constructed from 0.062" aluminum, satin finish with clear chem film plating. Covers slide into T-Strut grooves, no mounting hardware required.

**Top/Bottom Covers**

Part No.	Width	Height
AC160-84-1	16.98"	4.93"
AC220-84-1	16.98"	7.29"
AC280-84-1	16.98"	9.65"
AC340-84-1	16.98"	12.01"
AC400-84-1	16.98"	14.37"

**Dress Panels**  
**DP**

Dress Panels provide an attractive, finished look for Vector Card Cages. Mounting hardware included.



**Dress Panels**

DP-3U	For 3U Subrack 5.21" high x 1.10" wide
DP-6U	For 6U Subrack 10.45" high x 1.10" wide
DP-9U	For 9U Subrack 15.70" high x 1.10" wide

**Accessories**

**Handles**  
**HA19**

Functional and attractive, card cage handles mount easily, securely. Mounting hardware included.

**Handle**

HA19-3U	Handle for 3U subrack - 4" mounting centers, 8-32 tapped holes
HA19-6U	Handle for 6U - 6" mounting centers, 8-32 tapped holes
HA19-9U	Handle for 9U subrack - 11" mounting centers, 8-32 tapped holes

**Hardware**

Vector provides a wide selection of hardware and accessories for performing modifications and meeting special requirements.

**Subrack Hardware**

80880107	Screw, 8-32 x .625, Pan Head
88000106	Screw, 2.5mm x .45mm x 10mm, Pan Head
84004006	Washer, Flat, DIN # 125
5700209	ID Strip, Adhesive Backed Mylar
5210218	Spacer, Extrusion Front
5210208	Strip, Insulation

**Nut Strips**

An extremely functional packaging tool. Threaded mounting holes spaced at 0.2" centers slide into strut grooves, can be used to anchor panels, cards, or other components. Use on front or rear struts for any Europackaging subrack.

5700202	85HP Nut Strip, 17" Wide
5250268-63	63HP Nut Strip, 12.8" Wide
5250268-42	42HP Nut Strip, 8.6" Wide
525068-21	21HP Nut Strip, 4.4" Wide

**Adapter Strip**  
**AS1/2**

Adapter strip for mounting DIN connectors on subrack with 84 tapped holes (2.5mm x 4.5mm pitch). Pkg 2

The Vector-Pak® line of subracks for non-metric packaging requirements—a complete selection of subracks for prototyping and short production runs

Designed for mounting in 19" racks, these units are equally appropriate on desktop or worktable. Available factory-assembled or as easy assembly kits. All Vector-Pak® subracks are constructed from sturdy, brushed anodized or chem filmed aluminum and feature:

- Extruded aluminum struts, adjustable four ways (up, down, forward, back)
- Marker strips for quick card positioning and identification
- Three card mounting methods:  
**FIXED:** Zinc, aluminum or plastic guides installed, usually on 0.75" centers

**CONTINUOUS:** Aluminum card guide plates with guide slots on 0.15" centers

**VARIABLE:** Snap-in card guides are mounted into holes positioned at 0.25" centers

- Complete selection of accessories available: including front and rear panels, covers, enclosures, and handles

## A Word About Part Numbers:

In this section, part numbers indicate the basic categories of subracks:

**CCK** = Card Cage Kit—easy assembly, hardware provided.

**CCA** = Card Cage Assembly—factory assembled version of CCK.

CCA and CCK subracks are available in several configurations: frame kits; kits and assemblies with fixed, continuous, or variable position card guides; and kits and assemblies with backplane and card guides.

**CCM** = Assembled card cage designed for cards at 1" spacing intervals or for Cardmount Modules. These cages use standard (0.062") card guides spaced at intervals of 1". Cardmount modules provide shielding, especially from heat, and rigidity for printed circuit cards. Front panel can be used for cutouts and labeling, or for switches and other components.

**CMA** = Factory-assembled card cage, designed for EFP modules, with module mounting guides. EFP modules provide excellent shielding; and slots within modules can be used for mounting printed circuit cards. Front and rear panels provide for mounting instruments and components.

The number that follows these three-letter designations indicates the size of card for which the subrack has been designed:

**Series 12** = For 4.5" height cards with nominal widths of 4.5". Maximum recommended card width is 5".

**Series 13** = For 4.5" height cards with nominal widths of 6.5". Maximum recommended card width is 7".

**Series 14** = For 4.5" height cards with nominal widths of 9.6". Maximum recommended card width is 10".

**Series 15** = For 6.25" height cards with nominal widths of 9.6". Maximum recommended card width is 10".

**Series 17** = For 8" height cards with nominal widths of 9.6". Maximum recommended card width is 10".

**Series 18** = For 9.75" height cards with nominal widths of 13.5". Maximum recommended card width is 14".

**Series 100** = For 10" height cards with nominal widths of 5.3" (designed for S100). Maximum recommended card width is 8.5".

Vector-Pak® Non-metric Card Cages

Part No.	Ass'y Kit	Dimensions			Card Size		Card Guides		Backplane
		Width	Height	Depth	Height	Width	Type	Number	
CCK12S	K	19	5.25	9	4.5	3.0 to 5.0	Nylon, press-in	42	
CCK12S-H	K	10.25	5.25	9	4.5	3.0 to 5.0	Nylon, press-in	22	
CCK13F	K	19	5.25	9	4.5	5.5 to 7.0			
CCK13S	K	19	5.25	9	4.5	5.5 to 7.0	Nylon, press-in	42	
CCK13S-16	K	19	5.25	9	4.5	5.5 to 7.0	Nylon, press-in	42	16-slot STD
CCA13S	A	19	5.25	9	4.5	5.5 to 7.0	Nylon, press-in	42	
CCA13M	A	19	5.25	9	4.5	5.5 to 7.0	Zinc, riveted	42	
CCA13C	A	19	5.25	9	4.5	5.5 to 7.0	Aluminum, continuous		
CCM13S	A	19	5.25	9	4.5	5.5 to 7.0	Nylon, press-in	32	
CMA13-16	A	19	5.25	9	4.5	7.0	EFP module, fixed 1.6"	20	
CMA13-20	A	19	5.25	9	4.5	7.0	EFP module, fixed 2.0"	16	
CCK13S-H	K	10.25	5.25	9	4.5	5.5 to 7.0	Nylon, press-in	22	
CCK13S-HT	K	8.12	5.25	8.12	4.5	5.5 to 7.0	Nylon, press-in	20	
CCK13S-HT8	K	8.12	5.25	8.12	4.5	5.5 to 7.0	Nylon, press-in	20	8-slot STD
CCK14F	K	19	5.25	12	4.5	8.6 to 10.1			
CCA14S	A	19	5.25	12	4.5	8.6 to 10.1	Plastic, riveted	42	
CCM14S	A	19	5.25	12	4.5	8.6 to 10.1	Nylon, press-in	32	
CMA14-16	A	19	5.25	12	4.5	10.0	EFP module, fixed 1.6"	32	
CMA14-20	A	19	5.25	12	4.5	10.0	EFP module, fixed 2.0"	16	
CMA14-30	A	19	5.25	12	4.5	10.0	EFP module, fixed 3.0"	10	
CCK15F	K	19	7	12	6.25	8.6 to 10.1			
CCM15S	A	19	7	12	6.25	8.6 to 10.1	Nylon, press-in	32	
CCK17F	K	19	8.75	12	8.0	8.6 to 10.1			
CCA17S	A	19	8.75	12	8.0	8.6 to 10.1	Nylon, press-in	42	
CCK18F	K	19	10.50	15.75	9.75	11.0 to 13.5			
CCK100S	K	19	12.25	9	10.0	4.0 to 8.5	Nylon, press-in	42	

## For 4.5" High Cards

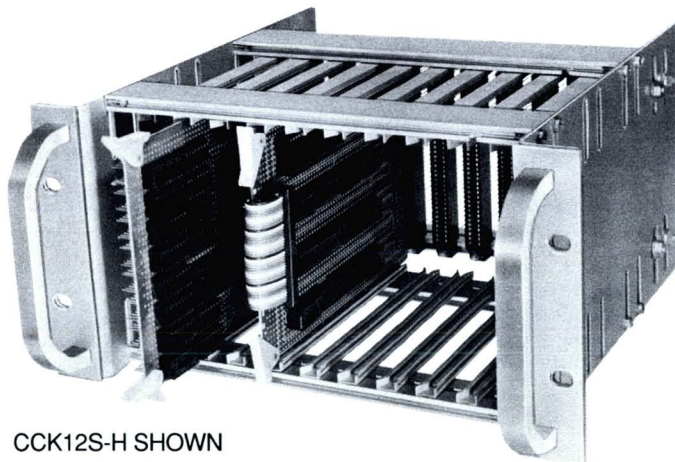
**4.5" Nominal Width  
For Cards  
Up to 5" Wide  
Rack Dimensions:  
19" x 5.25" x 9"**

### **CCK12S (formerly CCK13AS)**

- Easy assembly subrack kit
- 21 pairs of nylon, snap-in card guides
- Guide positions are variable at 0.25" increments

### **CCK12S-H (formerly CCK135AS)**

- Dimensions: 10.25" x 5.25" x 9"
- Easy assembly subrack kit, narrow-width version of CCK12S
- 11 pairs of nylon, snap-in card guides included
- Guide positions are variable at 0.25" increments



CCK12S-H SHOWN

## For 4.5" High Cards

**6.5" Nominal Width  
For Cards  
Up to 7" Wide  
Rack Dimensions:  
19" x 5.25" x 9"**

### **CCK13F (formerly CA52HP89)**

- Easy assembly subrack frame kit
- Slotted sidewalls provide horizontal and vertical adjustability for struts
- Accepts snap-in card guides (CG2-65S), available separately, which provide guide positioning at 0.25" increments
- Also accepts screw-mount (CG2-65M, CG2-65P) card guides, available separately; guide positions variable along entire length of strut
- Accepts Cardmount Modules (CM45A65 series), available separately

### **CCK13S**

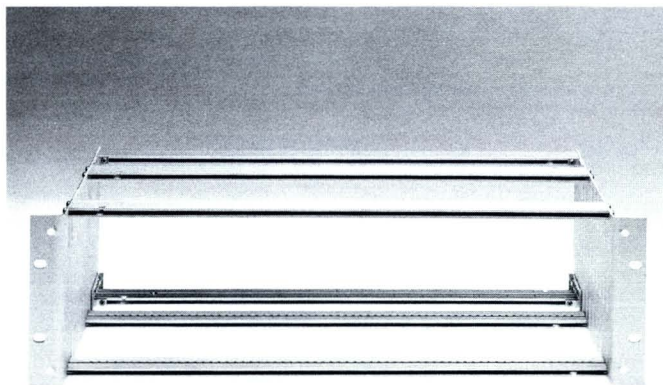
- Same as CCK13F
- 21 pairs of nylon, snap-in card guides included
- Guide positions are variable at 0.25" increments

### **CCK13S-16 (formerly CCK13SMB16)**

- Same as CCK13F
- Factory-assembled, 16-slot STD Bus backplane and 21 pairs of nylon, snap-in card guides included
- Guide positions are variable at 0.25" increments

### **CCA13S (replaces CCK13P, now available as special-order CCA13P)**

- Factory-assembled version of CCK13F
- 21 pairs of nylon, snap-in card guides installed on 0.075" centers
- Guide positions are variable at 0.25" increments



CCK13F SHOWN ASSEMBLED

## For 4.5" High Cards

### 6.5" Nominal Width For Cards Up To 7" Wide Rack Dimension: 19" x 5.25" x 9"

#### CCA13M (formerly CCK13)

- Factory-assembled version of CCK13F
- 21 pairs of fixed-position, zinc card guides installed on 0.75" centers
- Zinc card guides provide excellent card retention and security

#### CCA13C (formerly CCK3)

- Factory-assembled version of CCK13F
- Continuous card guide installed, allows placement of cards on continuous 0.15" centers

#### CCM13S (replaces CCM14A, now available as special-order CCM14P)

- Factory-assembled version of CCK13F
- Designed for Cardmount Modules (Part No. CM45A65), which provide for mounting cards of any thickness, and for miscellaneous component mounting
- 16 pairs of nylon, snap-in card guides installed at 1" intervals
- Guide positions are variable at 0.25" increments

#### CMA13-16 (formerly CMA3A16)

- Factory-assembled version of CCK13F, designed for mounting EFP modules (Part No. EFP164A66)
- 10 pairs of fixed-position, aluminum module guides spaced at 1.6" centers installed

#### CMA13-20 (formerly CMA3A20)

- Factory-assembled version of CCK13F, designed for mounting EFP modules (Part No. EFP204A66)
- 8 pairs of fixed-position, aluminum module guides spaced at 2" centers installed

#### CCK13S-H (formerly CCK135S)

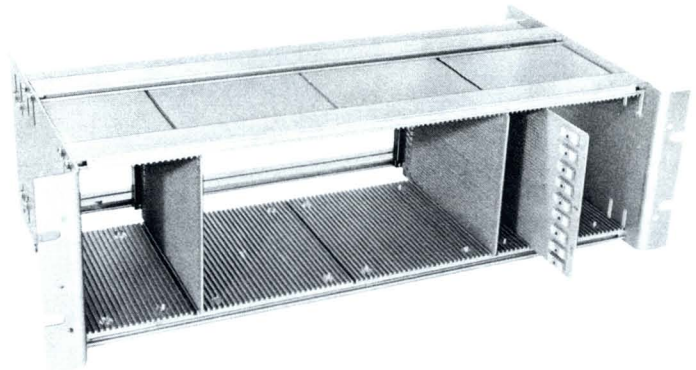
- Dimensions: 10.25" x 5.25" x 9"
- Easy assembly subrack kit, narrow-width version of CCK13F
- 11 pairs of nylon, snap-in card guides included
- Guide positions are variable at 0.25" increments

#### CCK13S-HT (formerly CCK19S)

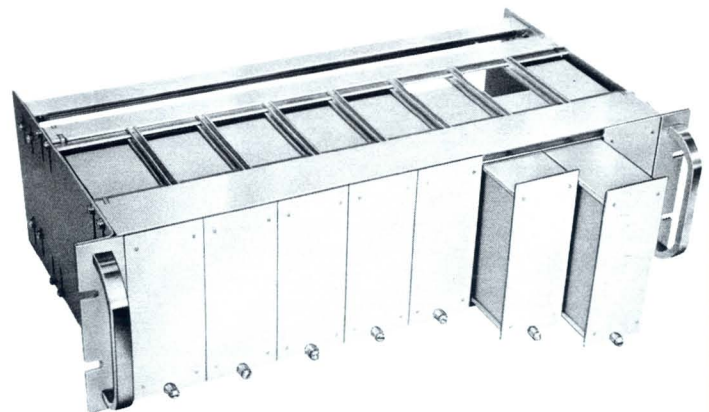
- Dimensions: 8.12" x 5.25" x 8.12"
- Easy assembly, narrow-width version of CCK13F with flangeless sidewalls
- Ideal for STD Bus applications, but can be used for any 4.5" x 6.5" cards
- 10 pairs of nylon, snap-in card guides included
- Guide positions are variable at 0.25" increments

#### CCK13S-HT8 (formerly CCK19SMB8)

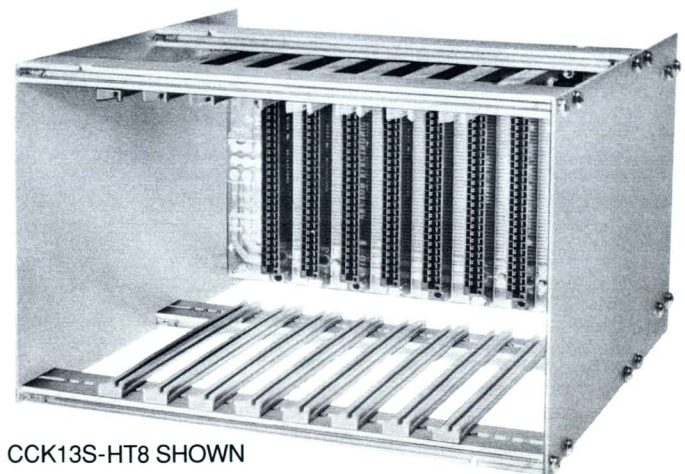
- Dimensions: 8.12" x 5.25" x 8.12"
- Same as CCK13S-HT
- Factory-assembled, 8-slot STD Bus backplane and 10 pairs of nylon, snap-in card guides included
- Guide positions are variable at 0.25" increments



CCA13C SHOWN



CMA13-16 SHOWN



CCK13S-HT8 SHOWN

Packaging

## For 4.5" High Cards

### 9.6" Nominal Width For Cards Up to 10" Wide Rack Dimensions: 19" x 5.25" x 12"

#### CCK14F (formerly CA52HP119)

- Easy assembly subrack frame kit
- Slotted sidewalls provide horizontal and vertical adjustability for struts
- Accepts snap-in card guides (CG2-80S, CG2-95S), available separately, which provide guide positioning at 0.25" increments
- Also accepts screw-mount (CG2-80M, CG2-80P, CG2-95P) card guides, available separately; guide positions are variable along entire length of strut
- Accepts Cardmount Modules (CM45B95 series) available separately

#### CCA14S (replaces CCK14P, now available as special-order CCA14P)

- Factory-assembled version of CCK14F
- 21 pairs of nylon, snap-in card guides installed on 0.075" centers
- Guide positions are variable at 0.25" increments

#### CCM14S (replaces CCM14B, now available as special-order CCM14P)

- Factory-assembled version of CCK14F
- Designed for Cardmount Modules (CMA45B95-1), which provide for mounting cards of any thickness, and for miscellaneous component mounting
- 16 pairs of nylon, snap-in card guides installed at 1" intervals
- Guide positions are variable at 0.25" increments

#### CMA14-16 (formerly CMA4A16)

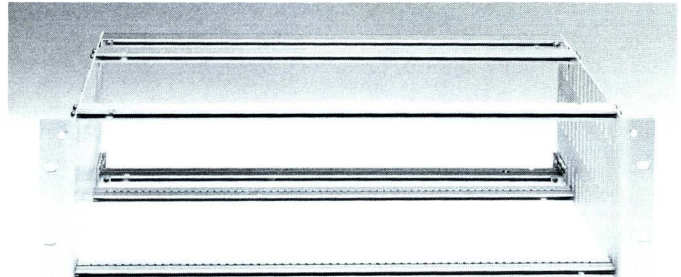
- Factory-assembled version of CCK14F, designed for mounting EFP modules (EFP164A97)
- 10 pairs of fixed-position, aluminum module mounting guides spaced at 1.6" centers installed

#### CMA14-20 (formerly CMA4A20)

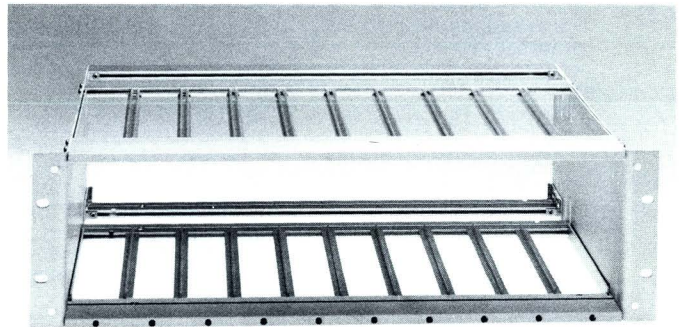
- Factory-assembled version of CCK14F, designed for mounting EFP modules (EFP204A97)
- 8 pairs of fixed-position, aluminum module mounting guides spaced at 2" intervals installed

#### CMA14-30 (formerly CMA4A30)

- Factory-assembled version of CCK14F, designed for mounting EFP modules (EFP304A97)
- 5 pairs of fixed-position, aluminum module mounting guides spaced at 3" intervals installed



CCK14F SHOWN ASSEMBLED



CMA14-16 SHOWN

## For 6.25" High Cards

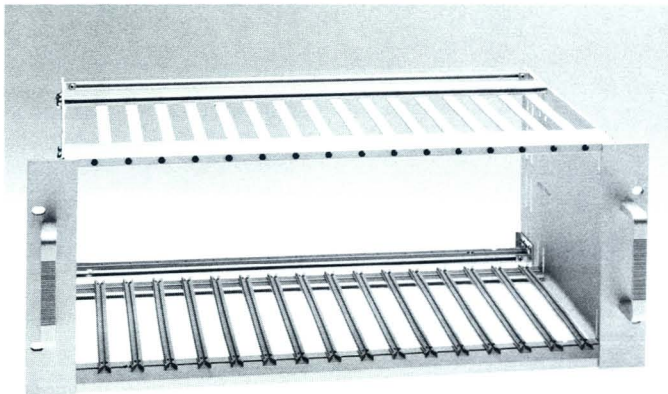
**9.6" Nominal Width  
For Cards  
Up to 10" Wide  
Rack Dimensions:  
19" x 7" x 12"**

### **CCK15F (formerly CA69HP119)**

- Easy assembly subrack frame kit
- Slotted sidewalls provide maximum horizontal and vertical adjustability for struts
- Accepts snap in card guides (CG2-80S, CG2-95S), available separately, which provide guide positioning at 0.25" increments
- Also accepts screw-mount (CG2-80M, CG2-80P, CG2-95P) card guides, available separately; guide positions are variable along entire length of strut
- Accepts Cardmount Modules (CM62B95 series), available separately

### **CCM15S (replaces CCM14F, now available as special-order CCM15P)**

- Factory-assembled version of CCK15F
- Designed for Cardmount Modules (CM62F95-1), which provide for mounting cards of any thickness, and for miscellaneous component mounting
- 16 pairs of nylon, snap-in card guides are installed at 1" intervals
- Guide positions are variable at 0.25" increments



CCM15S SHOWN

## For 8" High Cards

**9.6" Nominal Width  
For Cards  
Up to 10" Wide  
Rack Dimensions:  
19" x 8.75" x 12"**

### **CCK17F (formerly CA87HP119)**

- Easy assembly subrack frame kit
- Slotted sidewalls provide maximum horizontal and vertical adjustability
- Accepts snap-in card guides (CG2-80S, CG2-95S), available separately, which provide guide positioning at 0.25" increments
- Also accepts screw-mount (CG2-80M, CG2-80P, CG2-95P) card guides, available separately; guide positions are variable along entire length of strut

### **CCA17S (formerly CCK17P, now available as special-order CCA17P)**

- Factory-assembled version of CCK17F
- 21 pairs of nylon, snap-in card guides installed on 0.075" centers
- Guide positions are variable at 0.25" increments

## For 9.75" High Cards

**13.5" Nominal Width  
For Cards  
Up To 14" Wide  
Rack Dimensions:  
19" x 10.5" x 15.75"**

### **CCK18F (formerly CA104HP156)**

- Easy assembly subrack frame kit
- Slotted sidewalls provide maximum horizontal and vertical adjustability for struts
- Accepts snap-in card guides (CG2-80S, CG2-95S), available separately, which provide guide positioning at 0.25" increments
- Also accepts screw-mount (CG2-80M, CG2-80P, CG2-95P) card guides, available separately; guide positions are variable along entire length of strut

## For 10" Wide Cards

**5.3" Nominal Width  
For Cards  
Up to 8.5" Wide  
Rack Dimensions:  
19" x 12.25" x 9"**

**CCK100S  
(formerly CCK100)**

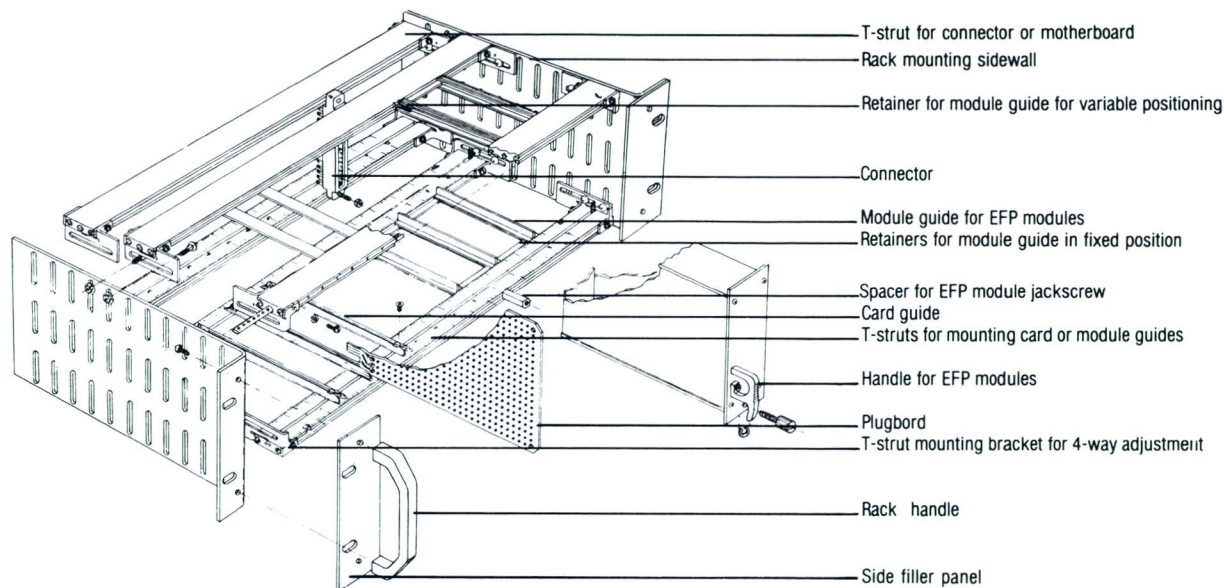
*Designed for S100 Bus  
(IEEE696), Motorola  
Exorciser™, Micromodule™,  
or General Purpose  
Applications*

- Easy assembly subrack kit
- Accepts S100 BUS backplane (8803-6-1A, 8803-12-1A, 8803-18-1A), available separately
- 21 pairs of nylon, snap-in card guides included
- Guide positions are variable at 0.25" increments



CCK100S SHOWN  
WITH BACKPLANE



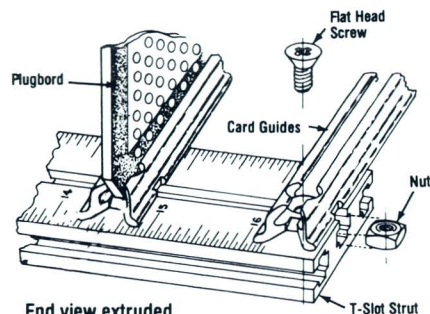


### Card Guides for Subracks

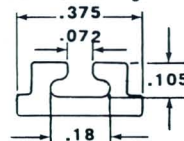
High-quality card guides with tapered slots for easy insertion. Screw-mounted models are available in metal or plastic and provide variable positioning along entire length of strut. Snap-in nylon models provide easy installation and removal—without tools—and can be positioned at 0.25" increments when used with Vector-Pak® T-struts.

of 0.75", which matches slot positions on Vector SWP sidewalls. All materials are flame retardant. Mounting hardware included.

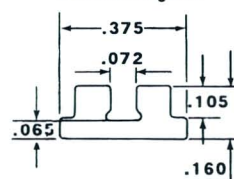
Holes for mounting guides to struts are based on center-to-center multiples



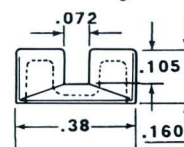
End view extruded aluminum card guide



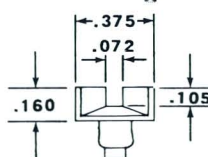
End view Plastic card guide



End view zinc die cast card guide



End view Snap-in card guide

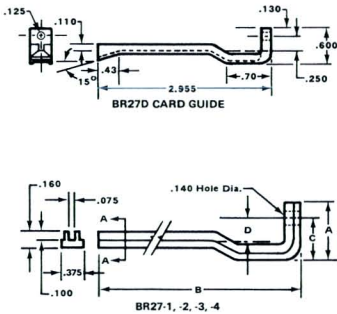


#### Rack or Panel Mounted Card Guides

Part No.	Type	Length	Centers	Card Length	Application
CG2-45P	Plastic, Screw	2.89	2.25	4.50"	Subrack series 12, 13, 14, 17, 18 & 100 & Vector P series sidewalls
CGP-45S	Nylon, Snap-in	3.17	2.25	4.50"	
CG2-50P	Plastic, Screw	4.39	3.75	5.00"	
CG2-65M	Metal, Screw	5.42	4.50	6.50"	
CG2-65P	Plastic, Screw	5.42	4.50	6.50"	
CG2-65S	Nylon, Snap-in	5.42	4.50	6.50"	Subrack series 14, 15, 17, 18 & 100 & Vector P series sidewalls ending in 119 or 156
CG2-80M	Metal, Screw	6.64	6.00	8.00"	
CG2-80P	Plastic, Screw	6.64	6.00	8.00"	
CG2-80S	Nylon, Snap-in	6.93	6.00	8.00"	
CG2-95P	Plastic, Screw	8.14	7.50	9.50"	
CG2-95S	Nylon, Snap-in	8.43	7.50	9.50"	

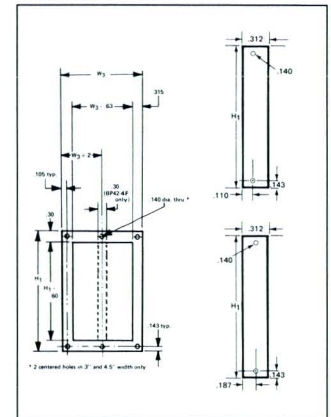
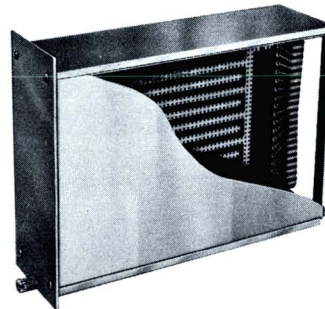
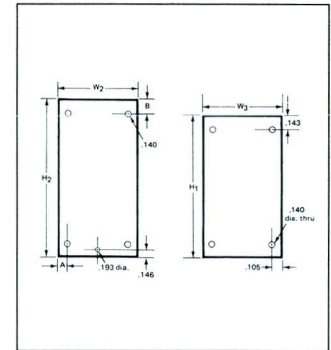
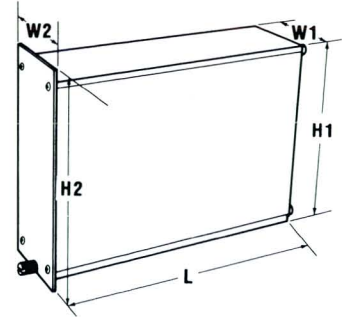
**Free Standing  
Connector Mounted  
Card Guides  
BR27**

Secure connection, rugged support for 0.062" thick, free standing circuit boards. For applications in which space is at a premium. Several sizes and styles available. Aluminum alloy construction. Mounting hardware included.



**Card Modules  
EFP Modules**

EFP Modules are designed for packaging circuit boards and for insertion into Vector CMA Series module racks. Modules mount securely into cages with jack screw on front panel. All aluminum, brushed anodized finish, easy assembly kits use aluminum frame-loc rails for top and bottom panels; grooves in these panels are used to locate and support one or more 0.062" boards. Card stops are provided for securing boards of varying lengths. Three rear panel treatments: full cover, strip cut-out ("E" type), and full cut-out ("F" type). Instructions and mounting hardware included. Module handles available separately.



**Free Standing Card Guides Connector Mounted**

Part No.	Use With Connector	A	B	C	D	For Use With
BR27D	R644 R644-1	.60	2.96	.47	.25	4.5" wide Plugboards with centered contacts, such as Vector 3677, 3682 & 3662 series.
BR27-1	R636 R636-1	.49	3.08	.35	.13	4.5" wide Plugboards with centered contacts such as Vector 3719 series.
BR27-1	R644 R644-1 R644-3	.49	3.08	.35	.13	4.25" wide Plugboards with centered contacts.
BR27-3	R630	.49	3.01	.36	.10	2.73" wide Plugboards with centered contacts such as Vector 3796 & 3797 series.
BR27-5	R656-1	.55	3.00	.42	.22	4.48" wide Plugboards with centered contacts, such as Vector 4610-1.

**EFP Module Ordering Table**

Part No.	Kit with Full Rear Panel	Part No.	Kit with F Type Rear Panel	Part No.	Body Size Figure 8					Recomm. Card Size		Module Rack
					Part No.	Part No.	W1	H1	L	W2	H2	
EFP164A66	—	EFP164A66F	—	EFP164A66E	1.6	4.62	6.69	1.65	5.23	4.5	6.5	CMA13-16
EFP164A97	—	EFP164A97F	—	—	1.6	4.62	9.8	1.65	5.23	4.5	9.6	CMA14-16
EFP204A66	—	EFP204A66F	—	EFP204A66E	2.0	4.62	6.69	2.05	5.23	4.5	6.5	CMA13-20
EFP204A97	—	EFP204A97F	—	EFP204A97E	2.0	4.62	9.8	2.05	5.23	4.5	9.6	CMA14-20
EFP304A66	—	—	—	—	3.0	4.62	6.69	3.05	5.23	4.5	6.5	CCK13F
EFP304A97	—	EFP304A97F	—	—	3.0	4.62	9.8	3.05	5.23	4.5	9.6	CCK14F
EFP454A66	—	—	—	—	4.5	4.62	6.69	4.55	5.23	4.5	6.5	CCK13F
EFP454A97	—	—	—	—	4.5	4.62	9.8	4.55	5.23	4.5	9.6	CCK14F



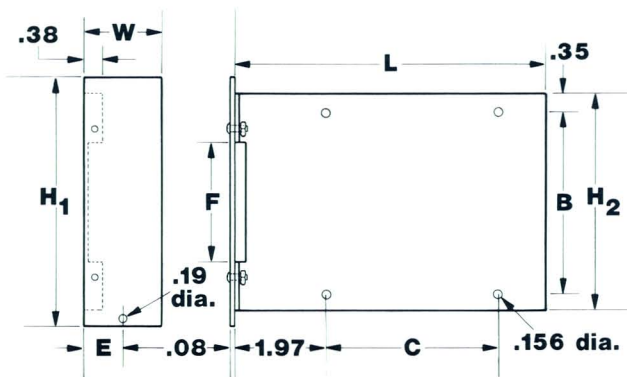
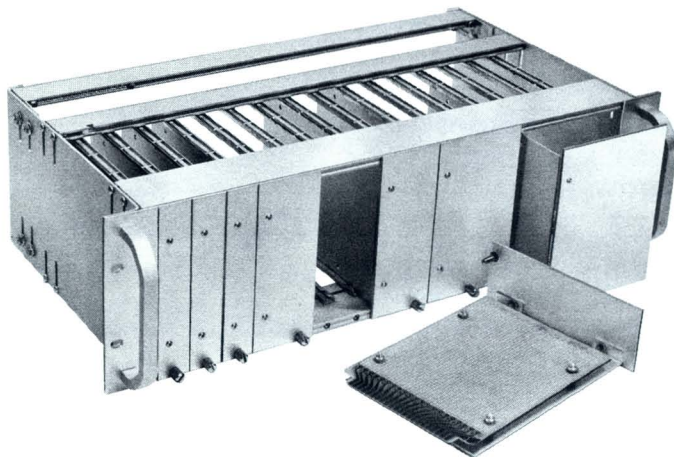
12460 Gladstone Ave., Sylmar, CA 91342 Phone (818) 365-9661 Fax (818) 365-5718  
 Inside CA (800) 426-4652 Outside CA (800) 423-5659

Cardmount Modules

Ideal for applications requiring front panel component mounting, increased rigidity, or varying card thicknesses. Cardmount panel, 0.062" thick, slides into standard Vector-Pak® card guides.

Removable front panel for convenient punching

and/or screening. Easy insertion and removal using 10/32 jack screws. Constructed from brushed anodized aluminum materials. Fixed-position plastic or snap-in nylon card guides are available separately or with Vector-Pak® CCM Subracks.



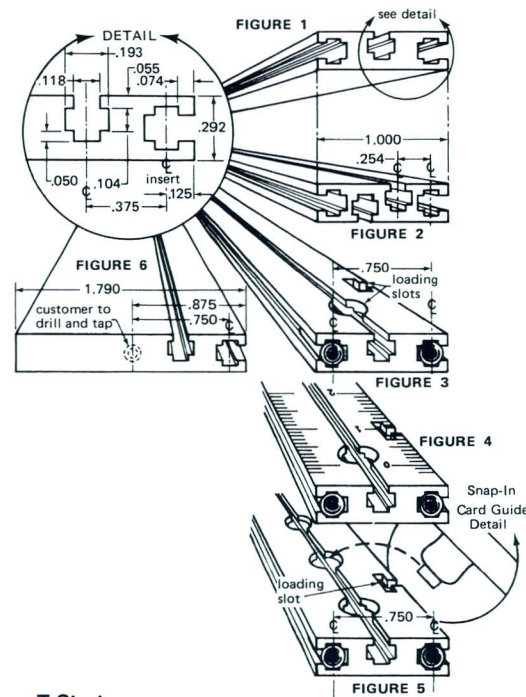
Card Mount Modules

Part No.	Height H1	Height H2	Width W	Length L	B	C	E	F	Module Rack	Card Guide
CM45A65-1	5.25	4.5	1.0	6.57	3.8	3.6	0.5	2.5	CCM13S	CG2-65
CM45B95-1	5.25	4.5	1.0	9.57	3.8	6.6	0.5	4.2	CCM14S	CG2-95
CM45A65-2	5.25	4.5	2.0	6.57	3.8	3.6	0.5	2.5	CCM13S	CG2-65
CM45B95-2	5.25	4.5	2.0	9.57	3.8	6.6	0.5	4.2	CCM14S	CG2-95
CM62F95-2	7.0	6.25	2.0	9.57	5.5	6.6	0.5	4.2	CCM15S	CG2-95
CM45A65-4	5.25	4.5	4.0	6.57	3.8	3.6	0.5	2.5	CCM13S	CG2-65
CM45B95-4	5.25	4.5	4.0	9.57	3.8	6.6	0.5	4.2	CCM14S	CG2-95

T-Struts

Vector T-Struts can be used for custom assemblies or to fit existing cage assemblies. Available with either three or four nut slots, and with or without inserts (brass or plastic) for retaining mounting

screws. As an alternative, mounting brackets (BR16A, available separately) may be used to attach struts to cages.



T-Struts

Part No.	Length	End Insert	Scale Printed	Fastening Method	Fig
TS81	8.12	none	no	Brackets or end inserts	1
TS81-5	8.12	4 brass	no	Direct 6-32 screw mounting	5
TS81N4	8.12	4 brass	no	Direct 6-32 screw mounting	4
TS169	16.85	none	no	Brackets or end inserts	1
TS169A	16.85	none	no	Brackets or end inserts	2
TS169P	16.85	none	yes	Brackets or end inserts	1
TS169-4	16.85	4 brass	no	Direct 6-32 screw mounting	3
TSW169-4	16.85	4 brass	no	Direct 6-32 screw mounting	6
TS169-6	16.85	4 brass	no	Direct 6-32 screw mounting	5
TS169NP4	16.85	4 brass	yes	Direct 6-32 screw mounting	4
TS209	20.85	none	no	Brackets or end inserts	1
TS300	30.00	none	no	Raw stock	1
TS300A	30.00	none	no	Raw stock	2
TSW300	30.00	none	no	Raw stock	6
TS600	60.00	none	no	Raw stock/pkg. 4	1

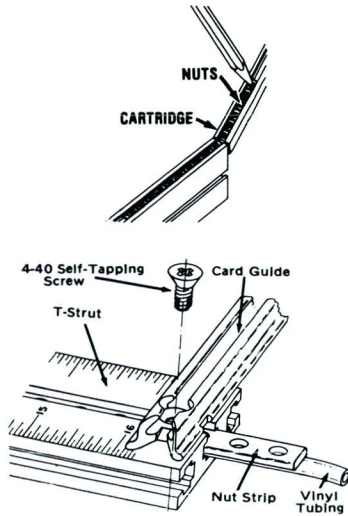
Packaging

T-Struts

Part Mounting Hardware  
NT4, SC4

Vector NT4-7PA square nuts slide into T-strut slots and anchor 4-40 screws for mounting parts. Supplied in quantities of 25, packaged in easy-loading cartridges.

Vector Nut Strips, NT4-3 and NT4-9, slide into T-strut slots with vinyl tubing (included) to anchor 4-40 self-tapping screws. Available with 0.25" and 0.2" hole spacing.

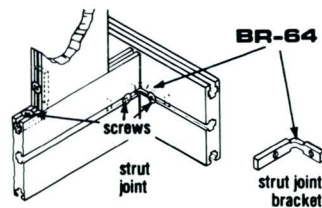


Hardware For Attaching Parts To T-Struts

Part No.	Description	Size	Pkg. Qty.	Ref. Fig.
NT4-3	Nut strip with holes on .25" centers	.175" x 16.50"	6	3
NT4-9	Nut strip with holes on .20" centers	.175" x 16.50"	6	3
NT4-10	Front entry nut for loading slot	.175" x .60"	12	1
NT4-7PA	4-40 sq. nuts in strut loading cartridge		25	2
SC4-27/25	4-40 100° flat head screw	4-40 x 1/4"	25	3

Recessed Bracket  
BR64#

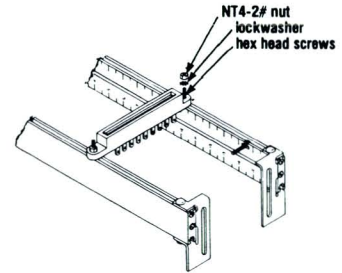
The BR64# bracket is used to fasten pieces of T-Strut extrusion with right angle butt or mitered joints. Enables mounting a smaller connector between larger ones, or box frames may be constructed. Bracket has threaded holes and is supplied with two screws per packet.



T-Struts

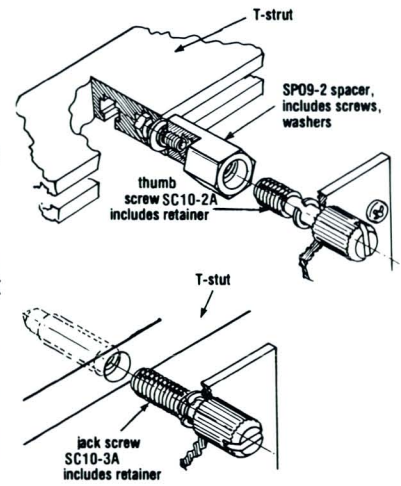
Hardware Kit  
HD34

HD34 is a complete connector mounting kit consisting of 42, 4-40 screws (SC4-28), nuts (NT4-2#), and lockwashers. To mount connectors, simply slide nut into desired position and fasten with screws and lockwasher, as illustrated. SC4-28 screws available in bulk quantities.



Modules or Front Panel Mounting Hardware

SC10-2A thumb screws and SC10-3A jack screws (supplied with EFP modules) are available separately in bags of 12. Both screws are used to attach EFP modules, Cardmount Modules, and front panel assemblies to T-Struts. SP09-2 spacers are used as standoffs for mounting modules to 1" T-Struts (1.79" struts are standard with module subracks).

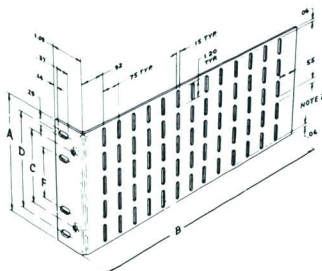


T-Strut Hardware

Part No.	Description	Pkg. Qty.
BR64#	Right angle bracket and mounting screws. Part No. includes all 3.	Bulk
SP09-2	Hex spacer for module mounting, includes hardware.	12
SC10-2A	Thumb screw fully threaded for direct attachment of panels.	12
SC10-3A	Jack screw for mounting modules to T-Struts with jacking action.	12
HD34	Connector mounting hardware, includes SC4-28 screws, NT4-2# nuts, and lockwashers.	42 ea.
NT4-2#	4-40 nut for connector mounting.	Bulk
SC4-26	4-40 hex head screw, 3/4" long for connector mounting.	24
SC428	4-40 hex head screw, 1/2" long for connector mounting.	24

**Sidewalls**

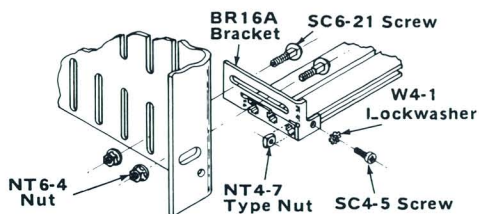
Vector-Pak® sidewalls are ideal for multi-function equipment subracks and cabinets. Versatile slot pattern provides excellent adjustability—horizontal and vertical—for T-Struts and cross members.



P TYPE SIDEWALL

**T-Strut Bracket  
BR16A**

- Provides additional horizontal adjustability for T-Struts
- Hardware included



**Sidewalls**

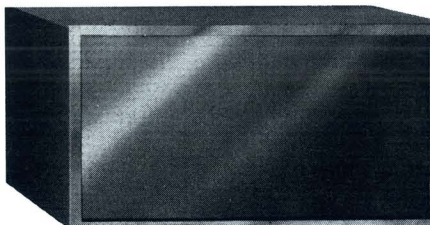
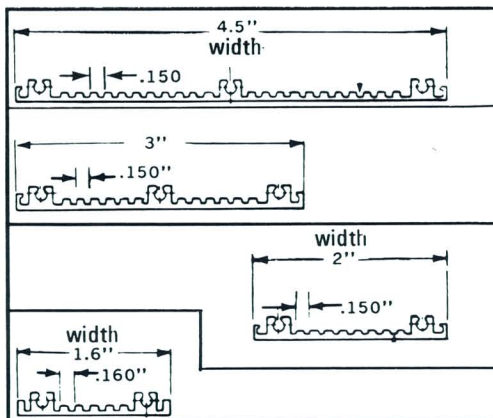
Part No.	Height	Depth	Handle Mounting Centers	Rack Mounting Centers		Accepts Card
	A	B	C	D	F	Height
SW52P89	5.25	9.0	4.25	—	2.25	4.5
SW52P119	5.25	12.0	4.25	—	2.25	4.5
SW52P156	5.25	15.75	4.25	—	2.25	4.5
SW87P89	8.75	9.0	4.25	5.75	2.25	8.0
SW87P119	8.75	12.0	4.25	5.75	2.25	8.0
SW104P156	10.5	15.75	4.25	7.5	3.0	9.75

**Multi-Mod Cases**

W45, W30, W20, W16

Versatile Multi-Mod Cases are ideal for small case packaging of testers, controllers, and other instruments. Brushed aluminum construction provides excellent RF attenuation and an attractive, "finished" appearance. Kits include

frame, top and bottom covers, and hardware. Extruded, two-piece frame assembles quickly with self-tapping screws. Standard 0.062" cards slide into grooves in Frame-Loc Rails.



**Off The Shelf Clear Anodized Cases**

Part No.	Width	Length	Height	Circuit Card Size Range
W45-10-66B	4.5	10.00	6.64	9.88 x 6.50
W45-10-46B	4.5	10.00	4.61	9.88 x 4.50
W45-86-46B	4.5	8.61	4.61	8.50 x 4.50
W45-66-46B	4.5	6.61	4.61	6.50 x 4.50
W30-10-66B	3.0	10.00	6.61	9.88 x 6.50
W30-86-46B	3.0	8.61	4.61	8.50 x 4.50
W30-66-46B	3.0	6.61	4.61	6.50 x 4.50
W20-66-46B	2.0	6.61	4.61	6.50 x 4.50
W20-46-31B	2.0	4.61	3.10	4.50 x 2.98
W16-31-31B	1.6	3.10	3.10	2.98 x 2.98

Packaging

Rack Components

**Rack Encasements**  
**CE55**

Designed to fit standard Vector card cages and module racks, Vector Rack Encasements provide a finished look for desktop or worktable. Easily removable top and bottom covers provide excellent accessibility to cards and other components. Complete encasements cover sub-racks to flange edges. Encasements supplied as kits, which include top and bottom panels, rear panel, two side panels, and aluminum trim strips. Sturdy, brushed anodized aluminum construction. Use with bottom-hinge front panels (HFP series) and filler panels (FP series) or with side-hinge front panels (HP series, filler panels included). Front panels may be ordered separately.

**Top/Bottom Panels**  
**CAC1, CAC2**

Panels (packages of 2) are designed to provide protective cover and still allow subrack to be mounted into equipment rack or cabinet. Aluminum construction, mounting screws and instructions included.

**Rear Panels**  
**CRK3**

Blank rear panel, fits 19" card cages and module racks.

**Side Filler Panels**  
**FP52, FP87**

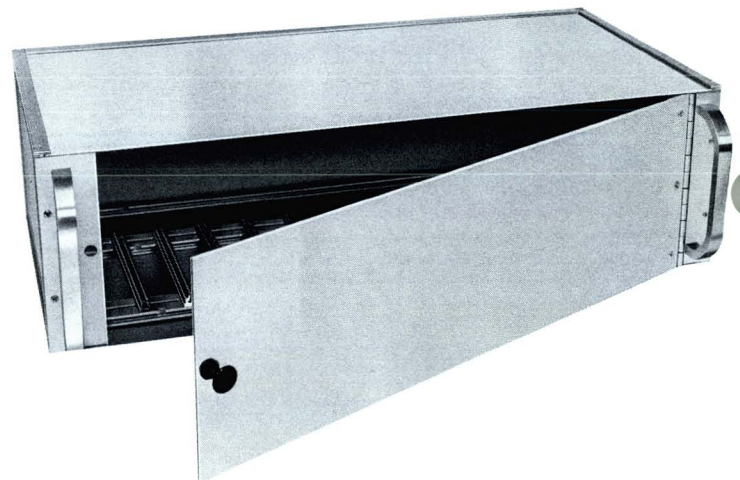
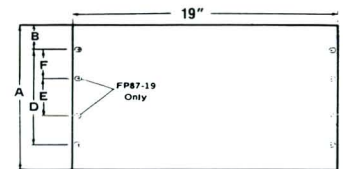
Side Filler Panels are 3" wide, slotted to fit sidewall mounting flanges. Can be cut to size as needed. 0.080" aluminum, brushed anodized finish.

**Front Panels**

0.125" aluminum construction, brushed anodized finish. Two front panel versions available:

**Side Hinged:**  
**HP52**  
Easy to assemble kit includes the hinged panel with latch, striker plate, and 2 filler panels. Also includes mounting hardware and instructions.

**Bottom Hinged:**  
**HFP52, HFP69, HFP87**  
Designed for "drop down" assembly. Includes lanyard, mounting hardware and instructions.



Use With Rack Size			Rack Encasements				Front Panels		Cover Panels		Lanyard Part No.	Blank Panel Part No.	Dimensions					Dim. Only G	Side Filters Panels Part No.	Handles Part No.
Height	Width	Depth	Part No.	Height	Width	Depth	Hinged		Top &	Rear			Front							
							Side Part No.	Bottom Part No.	Bottom Part No.	Part No.			A	B	D	E	F			
5.25	19.00	9.00									FP52-19	5.25	1.50		2.25		4.25	FP52-2	HA12	
5.25	19.00	9.00	CE55-95	5.5	19.00	9.5	HP52-1	HFP52-1	CAC1	CRK3	L20	FP52-19	5.25	1.50		2.25		4.25	FP52-2	HA12
5.25	19.00	12.00	CE55-125	5.5	19.00	12.5	HP52-1	HFP52-1	CAC2	CRK3	L20	FP52-19	5.25	1.50		2.25		4.25	FP52-2	HA12
5.25	19.00	15.75					HP52-1	HFP52-1		CRK3	L20	FP52-19	5.25	1.50		2.25		4.25	FP52-2	HA12
7.00	19.00	9.00						HFP69-1	CAC1			FP69-19	7.00	1.50		4.00		3.09		HA13
7.00	19.00	12.00						HFP69-1	CAC2				7.00	1.50		4.00		3.09		HA13
7.00	19.00	15.75						HFP69-1					7.00	1.50		4.00		3.09		HA13
8.75	19.00	9.00						HFP87-1	CAC1		L20	FP87-19	8.75	1.50	5.75	2.25	1.75	4.25	FP87-2	HA12
8.75	19.00	12.00						HFP87-1	CAC2		L20	FP87-19	8.75	1.50	5.75	2.25	1.75	4.25	FP87-2	HA12
8.75	19.00	15.75						HFP87-1			L20	FP87-19	8.75	1.50	5.57	2.25	1.75	4.25	FP87-2	HA12

**Rack Components**

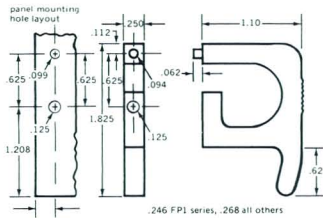
**Handle Kit for Modules**

HA11/2

Aluminum handle with unique, finger-hugging design adds function and style to module subracks. Mounting hardware included.

**Rubber, Stick-On Feet FT3**

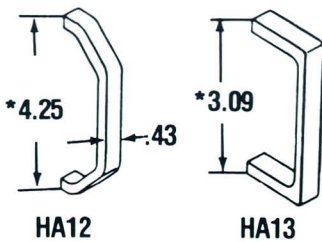
Convenient and functional, protect worktable or desktop surfaces with Vector Rubber Feet, supplied 8 to a package.



**Handles for Subracks**

HA12, HA13

Brushed anodized aluminum handles, add to the appearance and function of card cages or subracks. Mounting hardware included.



\*C-C mounting hole spacing

Packaging

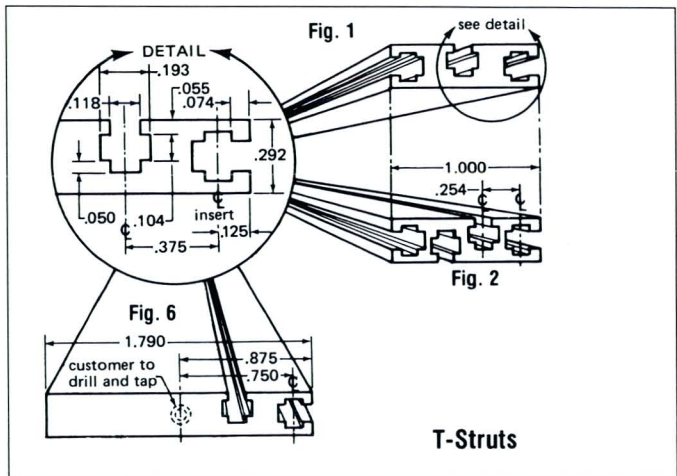
**Vector's Most Versatile Products Custom sized To Your Specifications**

In keeping with Vector's policy of providing custom assemblies and modifications to meet special needs, Lumber Yard Parts are available. These parts are cut to any length at 90°. Frame-Loc Rails are available with 45° miter cut. All extrusions are aluminum, standard finish is clear anodize. Mounting brackets and hardware available separately for all Lumber Yard Parts.

**T-Strut Extrusions**

Vector's most popular strut can be ordered in custom lengths. Durable aluminum construction. T-struts can be joined easily with Vector's BR-64 bracket. Many options to choose from, including

- 1" wide T-struts with 3 nut slots
- 1" wide T-struts with 4 nut slots, ideal for double tier card guides and vertical guide cages
- Extra width T-struts, 1.79", for use with modules or for added strength



**T-Strut Extrusion Ordering Table**

TS   .   -

Length                      Figure References (see illustration)

Maximum length = 126"



## Frame-Loc Rails

Ideal for applications, requiring quick, versatile packaging. Frame-Loc Rails can be cut or bent to form enclosures of virtually any size. Aluminum construction with 0.062" grooves accommodate most Vectorbord® printed circuit boards. Four available widths. Standard length

is 41, shorter lengths can be ordered using table below. Standard finish is clear anodize.

### Frame-Loc Rail Ordering Table

SR	[ ]	-	[ ]	[ ]	.	[ ]	[ ]	-	[ ]
	Width		Length (inches)						S = 90°
	16 = 1.6"								M = 45°
	2 = 2.0"								
	3 = 3.0"								
	45 = 4.5"								

## Front Extrusions

Eurocard-style front cross member, easily adapted to any application. Available in four versions, with 21, 42, 63, and 85 HP, in lengths as described below, or cut to customer specifications.

### Front Extrusions Ordering Table

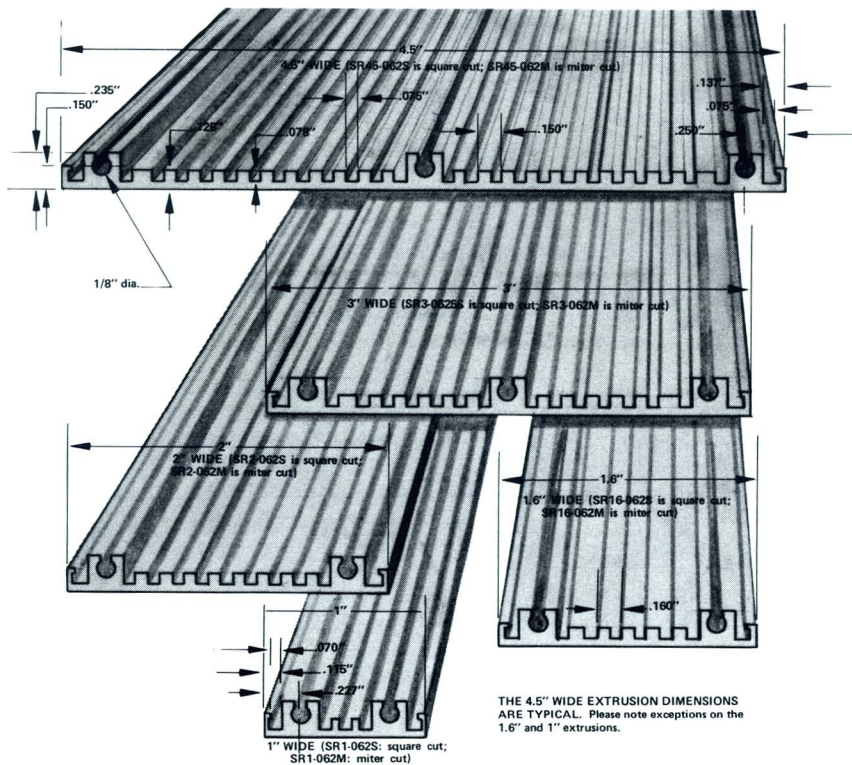
5250236 -	[ ]	[ ]
	Length in HPs	
	Note: 1 HP = 0.2"	

## Rear Extrusions

Eurocard-style rear cross member, easily adapted to any application. Available in four versions, with 21, 42, 63, and 85 HP, in lengths as described below, or cut to customer specifications.

### Rear Extrusions Ordering Table

5250238 -	[ ]	[ ]
	Length in HPs	
	Note: 1 HP = 0.2"	



## Center Extrusions

Eurocard-style front cross member, easily adapted to any application. Available in four versions, with 21, 42, 63, and 85 HP, in lengths as described below, or cut to customer specifications.

### Center Extrusions Ordering Table

5250237 -	[ ]	[ ]
	Length in HPs	
	Note: 1 HP = 0.2"	

## Nut Strips

An extremely functional packaging tool, can be cut to any length. Nut strips provide threaded anchoring holes at 0.2" increments. No mounting hardware required.

### Nut Strips Ordering Table

5700202 -	[ ]	[ ]
	Length in HPs	
	Note: 1 HP = 0.2"	

Packaging

## Vectors 14-Slot Passive Backplane An Excellent Platform for Configuring Industrial AT Computers

The Vectorbord® model 4617-6-14, enhanced 14-slot passive backplane provides clean, quiet transmission lines, even for systems based on high speed/high frequency CPUs. The design virtually eliminates compatibility problems, and allows the ready integration of ISA (Industry Standard Architecture) boards from different manufacturers performing different functions at different operating speeds. It also assures accurate "square wave" switching at any speed.

Massive power and ground planes, filtered power input, and user-selectable termination provisions assure clean, quiet "slot indifference" signal performance. Chokes and filters on all voltages isolate the backplane and cards from peripheral and motor noises.

### Maximum Capacity

14-slots: 8 full size, 6, 3/4 or 1/2 size slots accept PC, XT, and AT add-in cards.

### Ease of Configurability

Filtered power input, massive power and ground planes, and user selectable termination

provide clean, quiet signal performance and "slot indifference," regardless of the amount or type of add-in boards used to configure the system.

### High Speed, High Frequency Applications

The 4617-6-14 backplane is designed to maintain signal integrity, regardless of speed or complexity.

### Five Resistor Packs:

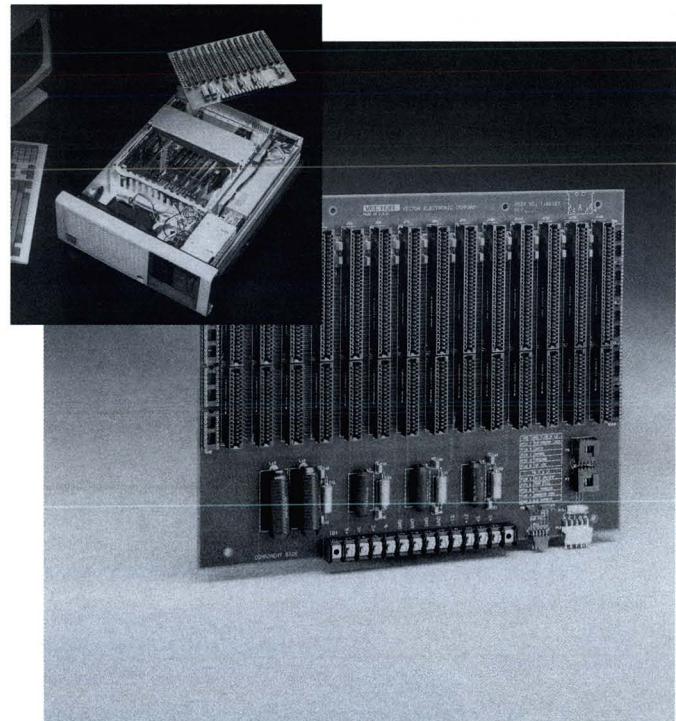
Each end of the backplane provides for transmission line termination. Each resistor pack handles up to 18 signal lines. Each pack provides a connection to Vcc (5V) on pin 20 and Gnd on pin 10, so that by appropriate selection of the pack type, the terminator can take the form of a pull-up, pull-down, or voltage-divider termination network. In addition, leads of resistor packs can be clipped away to omit designated pins from the termination scheme.

### Large, Accessible Terminal Block:

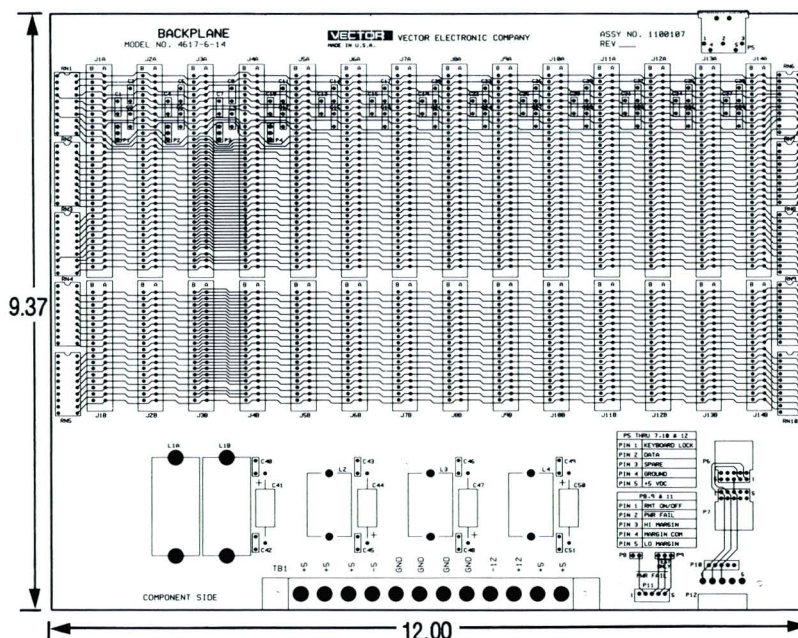
For easy hookup. Also provides access to +5V filtered from two separate terminals.

### Specifications

**Material:** FR4 Epoxy  
**Thickness:** 0.9"  
**Operating Temp:** 100°F



Reference	Description
L1A, L1B	Inductor, 10μH, 20A
L2, L3, L4	Inductor, 10μH, 12A
C41, C44, C47, C50	Capacitor, Tantalum, 10μf, 23V
C40, C43, C46, C2, C3, C5, C49 C6, C8, C9, C11, C12, C14, C15 C17, C18, C20, C21, C23, C24, C26, C27, C29, C30, C32, C33, C35, C36, C38, C39	Capacitor, .003μf, 50V, 10%
C42, C45, C48, C51, C1, C4, C7, C10, C13, C16, C19, C22, C25, C28, C31, C34, C37	Capacitor, .01μf, 100V, 10%

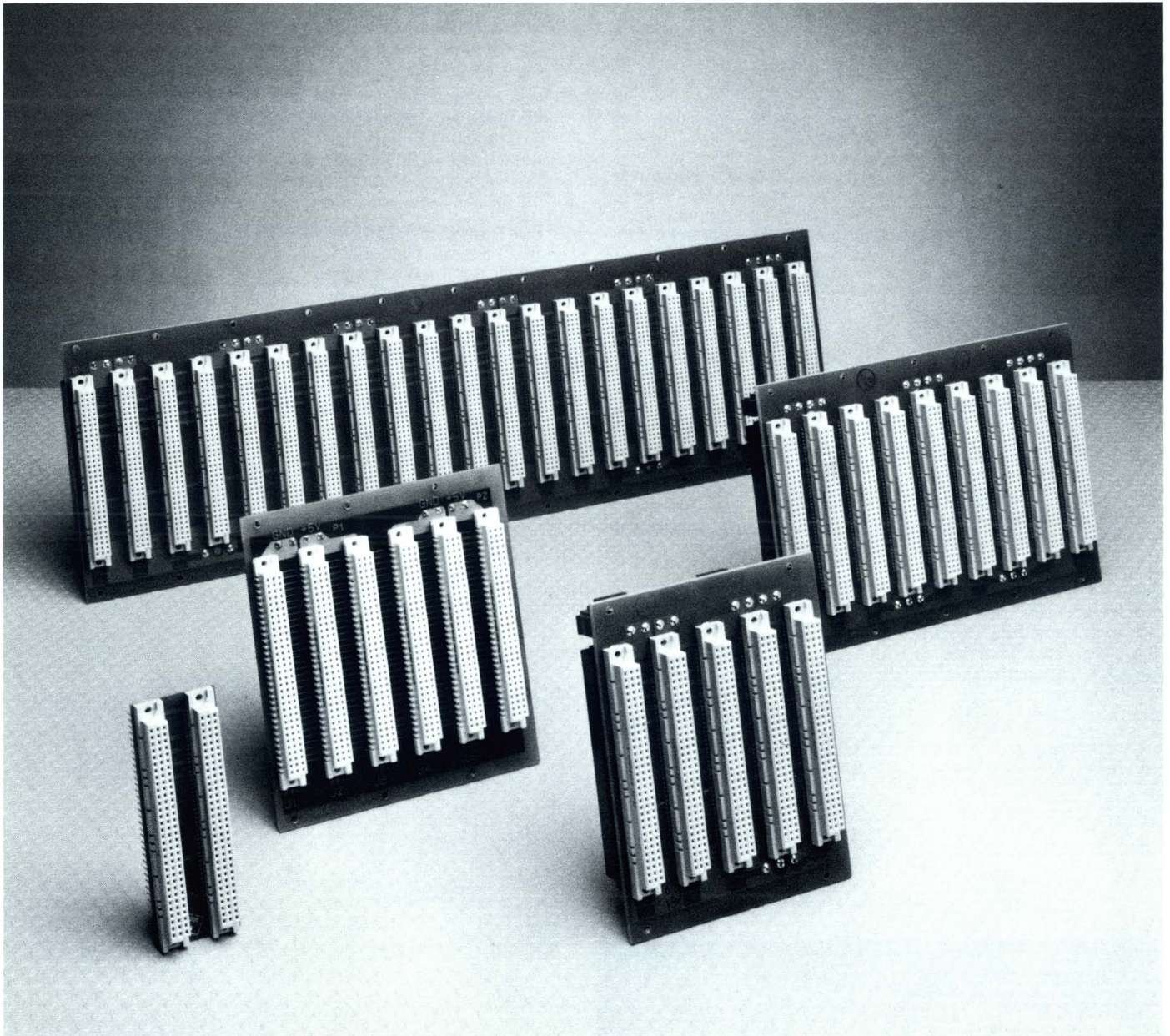


## General Purpose & Bus Specific

Vector Backplanes support uncommitted as well as bus specific applications—

VME, Multibus, S100, and STD Bus. Utilizing proven designs, quality materials,

and precision engineering, Vector puts performance in backplanes.



Backplanes

**Vector Uncommitted Backplanes provide maximum performance, maximum flexibility**

Massive, three ounce copper voltage and ground planes handle power requirements for high performance applications. Several power hook-up options provide excellent power handling capacities. Connector slots spaced on 0.80" centers. All connector pins are isolated from power layers and from other pins, and are assigned by user. Pins can be committed easily to power or ground layers with Vector T124 Solder Washers.

Vector off-board terminator modules, available separately, can be used to terminate backplanes according to VME J1 and J2 specifications. VME terminator modules are available for perpendicular, Vector Part No. VMETBJ1 or J2, and parallel, Vector Part No. VMETBJ1-P or J2-P, mounting.

**Multilayer Construction:**

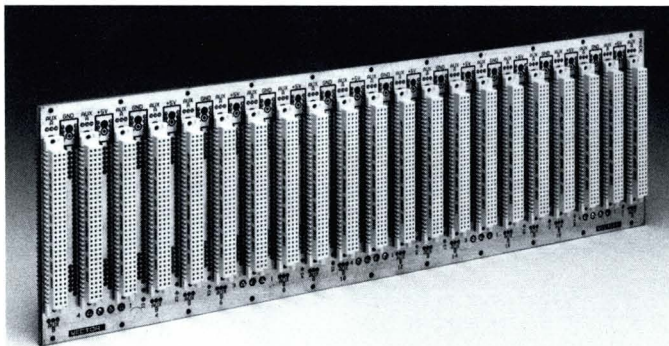
- Four-layer backplanes, 0.125" thick
- Full Power Planes—four independent power layers, one can be split between AUX A and AUX B—extremely low impedance power distribution
- Layer 1: Chassis Ground (component side), full coverage on component side, also available on solder side, isolated from circuit ground
- Layer 2: One or two auxiliary voltages (AUX A and AUX B) can be delivered through Mate-N-Lok® connectors; AUX A and AUX B (typically +12V and -12V) accessible through gold-plated Wire Wrap power pick-up pins—three each at most slot positions
- Layer 3: Source power is delivered through Mate-N-Lok® connectors and/or Power Bugs connectors on solder side; +5V is accessible through gold-plated, Wire Wrap power pick-up pins—12 pins available at each slot position
- Layer 4: Circuit ground (solder side) can be dedicated to chassis ground using pins and solder washers (supplied with backplanes); and is accessible at any pin position and through Mate-N-Lok® and Power Bugs connectors

**Outstanding Performance**

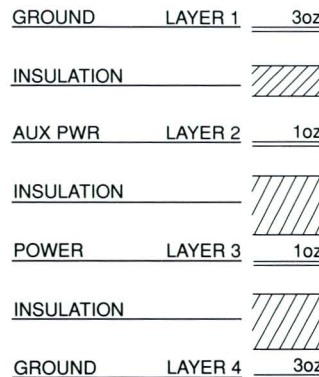
- Positions provided adjacent to A and C rows of each slot for mounting ribbon cable I/O connectors or for grounding DIN connector pins
- Positions provided for decoupling capacitors, power to ground and ground to chassis, for reducing signal noise and RFI
- Power connectors: Mate-N-Lok®, 20 amps per pin, provides access to AUX A and AUX B; and Power Bugs (10 amps per pin @ 85C)
- Bus Bar, Vector Part No. BB21S available separately, can be mounted on the Power Bugs for extra heavy power-handling requirements and greatly simplified wiring hook-ups

**Ordering Options:**

- Four configurations for power connectors: Mate-N-Lok®, Power Bugs, combination of Mate-N-Lok® and Power Bugs, and no connectors
- Power Pick-Up Pins: Factory-installed, gold-plated, 0.025" square post Wire Wrap pins, 12 each per slot position (0); or no pins installed (1)
- Terminator Modules, available separately: VMETBJ1, VMETBJ1-P, VMETBJ2, AND VMETBJ2-P
- 1.2" connector slot spacing



**Layer Designation**



**Uncommitted Backplane Ordering Table**

UM 21	A	3U	2	Ø
Number Of Slots	Board Height	3U 6U 9U	Power pick-up Pins	Ø = No pins installed
Slot Spacing	A = 0.8"		1 = Power pins installed	
	B = 1.2"		2 = Power and Ground pins installed	
Power Connectors	Ø = No connectors			
	1 = Mate-N-Lok			
	2 = Power bugs			
	3 = Mate-N-Lok and power bugs			

**All Vector VME Backplanes are fully assembled and tested.**

Backplanes include pressfit, 96-pin female DIN connectors (DIN 41612, class 2). Engineered to meet advanced requirements for system performance and for accessibility for engineering and testing.

Recommended for use with Vector Europackaging Subracks and Prototyping Boards, available for board sizes from 3U x 160mm to 9U x 400mm.

## J1 Backplanes

Vector J1 Backplanes handle high signal densities and circuit speeds with integrity and reliability. Six-layer construction and controlled-impedance design effectively reduce crosstalk and ringing on bus lines. Massive cop-perclad power and ground planes on opposite board sides; patented shielding technique\* effectively surrounds each signal trace with a closed conductive loop for blocking both capacitive and inductive coupling.

### Featuring Off-Board Termination

Termination for Vector J1 Backplanes is "off board" using VMETBJ1 terminator modules (supplied). Terminator modules are available for mounting perpendicular (Vector Part No. VMETBJ1) and parallel (Vector Part No. VMETBJ1P) to backplanes. Off-board termination provides capabilities for connecting two or more backplanes, for termination on extender cards, for termination according to specialized requirements, and for full, 21-slot backplanes.






- 96-pin female connectors designed to DIN 41612, class 2 specification
- Standard +5V and ground access through Mate-N-Lok® connectors, mating connector housings and pins provided
- Extensive labeling on board surface identifies user assignable pins, IACK and IACK OUT pins, and other information

\*Licensed from UCL and BICC

- Power Cable Assemblies in three- and four-foot lengths, Vector Part Nos. CA3-UM and CA4-UM, available separately

Vector J1 Backplanes are available in many sizes, including the 2-slot VMEBP2J1 Interconnect Board. The Interconnect Board can be used to connect two backplanes without sacrificing slot positions or electrical characteristics.

#### Layer Designation

COMP	LAYER 1	
POWER	LAYER 2	
INSULATION		
GROUND	LAYER 3	
POWER	LAYER 4	
INSULATION		
GND/+5SBY	LAYER 5	
SOLDER	LAYER 6	



Backplanes

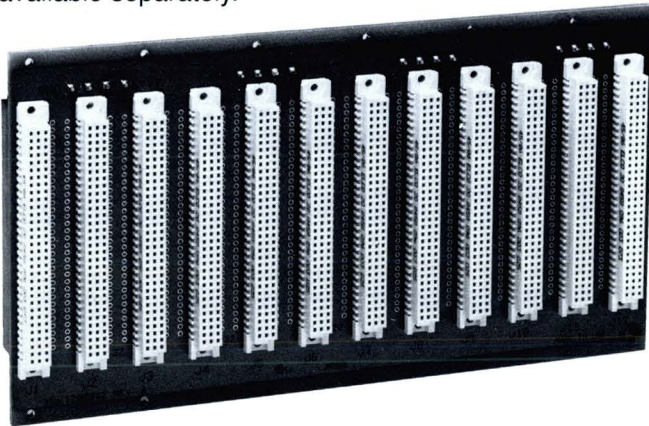
#### Backplanes ( For custom backplanes, contact factory)

VME J1 Part No.	Description	Height	Length	Connector Spacing	Layers
VMEBP21J1	21-Slot J1	5.12"	16.74"	.80"	6
VMEBP20J1	20-Slot J1	5.12"	15.94"	.80"	6
VMEBP14J1	14-Slot J1	5.12"	11.14"	.80"	6
VMEBP12J1	12-Slot J1	5.12"	9.54"	.80"	6
VMEBP10J1	10-Slot J1	5.12"	7.94"	.80"	6
VMEBP9J1	9-Slot J1	5.12"	7.14"	.80"	6
VMEBP8J1	8-Slot J1	5.12"	6.34"	.80"	6
VMEBP7J1	7-Slot J1	5.12"	5.54"	.80"	6
VMEBP6J1	6-Slot J1	5.12"	4.74"	.80"	6
VMEBP5J1	5-Slot J1	5.12"	3.94"	.80"	6
VMEBP2J1	2-Slot J1	5.12"	1.33"	.80"	6

## J2 Backplanes

Vector J2 backplanes are available in many sizes, corresponding to available Vector J1 backplanes. Featuring off-board termination using VMETBJ2 terminator modules (supplied). Pressfit 96-pin DIN connector pins are configured according to VME specifications: connector row B is bussed for 32-bit expansion; A and C rows can be used for local extension buses, such as VMX or VSB, or can be assigned according to user I/O requirements.

Two-slot J2 backplanes, the VMEBP2J2 Interconnect Boards, also are available. The Interconnect Board can be used to connect two backplanes without sacrificing slot positions or electrical characteristics. Power cable assemblies in three and four feet lengths, Vector Part Nos. CA3-UM and CA4-UM, available separately.



Backplanes ( For custom backplanes, contact factory)

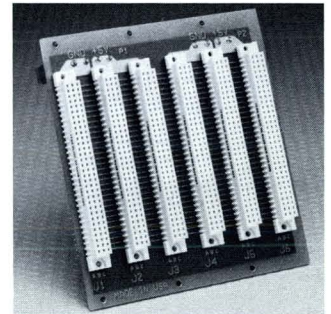
Part No.	Description	Height	Length	Connector Spacing
VMEBP21J2	21-Slot J2	5.12"	16.74"	.80"
VMEBP20J2	20-Slot J2	5.12"	15.94"	.80"
VMEBP14J2	14-Slot J2	5.12"	11.14"	.80"
VMEBP12J2	12-Slot J2	5.12"	9.54"	.80"
VMEBP10J2	10-Slot J2	5.12"	7.94"	.80"
VMEBP9J2	9-Slot J2	5.12"	7.14"	.80"
VMEBP8J2	8-Slot J2	5.12"	6.34"	.80"
VMEBP7J2	7-Slot J2	5.12"	5.54"	.80"
VMEBP6J2	6-Slot J2	5.12"	4.74"	.80"
VMEBP5J2	5-Slot J2	5.12"	3.94"	.80"
VMEBP2J2	2-Slot J2	5.12"	1.55"	.80"

## VMX Backplanes

Vector VMX Backplanes are mounted "piggyback" onto Vector J2 backplanes and provide pin assignments for A and C rows according to VMX specifications. B row pins correspond to VMX J2 power and ground pins and are connected to power and ground planes. Featuring 4-layer construction, VMX backplanes are available in 4-slot and 6-slot versions. On-board power connectors allow Vector VMX Backplanes to be mounted as standalone backplanes in sub racks.

### Layer Designation

COMP ROW A	LAYER 1	1oz
INSULATION		
GND	LAYER 2	1oz
INSULATION		
POWER	LAYER 3	1oz
INSULATION		
SOLDER ROW C	LAYER 4	1oz



### VMX Backplanes

Part No.	Description	Height	Length	Connect. Spacing	Layers
VMX-4-01	4-Slot, VMX 4 Layer Backplane Without J2	5.12"	3.14"	.80"	4
VMX-6-01	6-Slot, VMX 4 Layer Backplane Without J2	5.12"	4.74"	.80"	4

## Monolithic J1/J2 Backplanes

### Eight-layer Monolithic Backplanes—For Very High Performance Applications

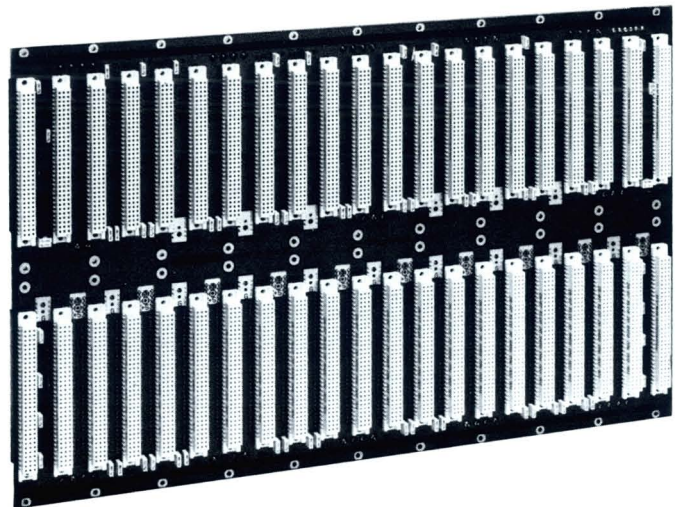
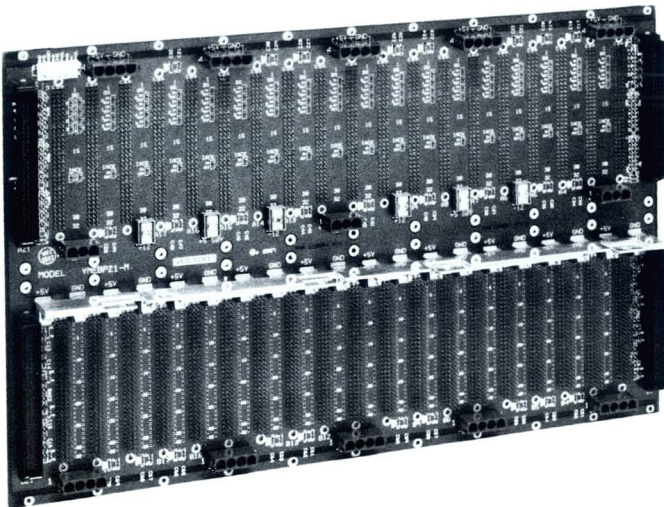
High-performance, 8-layer Vector Monolithic backplanes combine J1 and J2 on a single panel. These backplanes have been used in systems driven by 1000 watt power supplies, connected with 2-gage wire at opposite ends of a Power Bus Bar, delivering 5V at 150 amps and (+/-) 12V at 20 amps with no noticeable heat rise. Multiple connectors and power options can provide even greater power capacities.

Ground layers separate signal and power layers from each other and effectively prevent crosstalk

between signals and between signals and power plane. Pressfit DIN connectors (DIN 41612, Class 2) are easily accessible and serviceable.

### Eight-Layer Construction

- Designed in accordance with VME bus specification C1
- On-board termination
- Molex® connector provides convenient access to SYSRESET, SYSFAIL, and ACFAIL lines
- Positions for decoupling capacitors, power to circuit ground and circuit ground to chassis, for increased protection against resonance and crosstalk
- Mounting areas adjacent to J1 connectors for I/O to J2
- I/O mounting areas adjacent to J2 connectors, rows A and C, for ribbon cable connectors
- Power Bug power connectors (10 amps per pin @ 85C); three- and four-pin Mate-N-Lok® power connectors (20 amps per pin), Vector Part Nos. 73003003 and 73004003, available optionally—both types of connectors provide for ground and other voltages, such as +5V, +12V and -12V
- Vector Bus Bar, Part No. BB21S available separately, can be used with Power Bugs for excellent power distribution and greatly simplified wiring hook-up



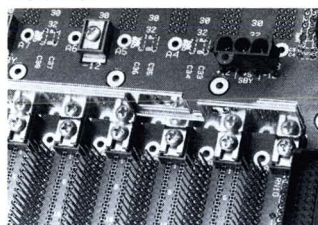
Backplanes

## Monolithic J1/J2 Backplanes

### Ordering Options:

- Four configurations for power connectors: Power Bugs, Mate-N-Lok®, combination of Mate-N-Lok® and Power Bugs, and no connectors
- I/O mounting area adjacent to J1 connectors: with gold-plated, double-tailed (accessible from both sides of backplane) Wire Wrap pins installed at factory, or with no pins installed
- Decoupling capacitors: factory-installed at power to ground positions only, at ground to chassis positions only, at both power to ground and ground to chassis positions, or with no pins installed

### Bus Bar



### Layer Designation

POWER	LAYER 1	3oz
INSULATION		
GROUND	LAYER 2	1oz
INSULATION		
SIGNAL	LAYER 3	1oz
INSULATION		
GROUND	LAYER 4	1oz
INSULATION		
SIGNAL	LAYER 5	1oz
INSULATION		
GROUND	LAYER 6	1oz
INSULATION		
SIGNAL	LAYER 7	1oz
INSULATION		
GROUND	LAYER 8	3oz

### Monolithic Backplane Ordering Table

VME BP	21	P	Ø	Ø
No. of slots				
Power Connectors				Capacitors
Ø = No Connectors				Ø = No caps
M = Mate-N-Lok				1 = Caps installed at power to ground positions only
P = Power Bugs				2 = Caps installed at ground to chassis positions only
S = Mate-N-Lok and Power Bugs				3 = Caps installed at both power and ground positions
Pins For I/O to J2				
Ø = No Pins				
1 = Pins Installed				

### Typical Performance Specifications

<b>Data Transfer Rate:</b>	Up to 40 Mbytes/sec	
<b>Cross Talk:</b>		
Signal to Signal:	360 mv due to six closest lines in simultaneous transition using AS type drivers	
Power to Signal:	4 mv per volt of power plane noise	
<b>Delay:</b>	25 ns (AS type driver to AS type receiver)	
<b>Overshoot:</b>	260 mv max	
<b>Voltage Rating:</b>	100 volts	
<b>Altitude Rating:</b>	10,000 feet	
<b>Operating Temperature:</b>	-55 C to +125C	
<b>Power Rating:</b>	<b>Voltage</b>	<b>Per Slot Rating</b>
	+5V	9.0 amps
	+12V	1.5 amps
	-12V	1.5 amps
	+5V standby	1.5 amps
<b>Connector Type:</b>	Press-fit DIN 41612 Class II	
<b>Housing Material:</b>	Thermoplastic polyester 94V-O UL rated	
<b>Insertion Force:</b>	36 pounds typical (3.0 oz. per pin)	
<b>Withdrawl Force:</b>	24 pounds typical (2.0 oz. per pin)	

### Monolithic Backplanes (For custom versions, consult factory)

Part No.	Description	Height	Length	Connect. Spacing	Layers
VMEBP21-M00	21-slot VME J1 and J2	10.32 (263.4 mm)	16.74 (425.2 mm)	.80	8
VMEBP10-M00	10-slot VME J1 and J2	10.32 (263.4 mm)	7.94 (201.7 mm)	.80	8
VMEBP7-M00	7-slot VME J1 and J2	10.32 (263.4 mm)	5.54 (161.0 mm)	.80	8

## Terminator Boards

Vector Terminator Boards terminate bus lines for backplanes with "off board" termination. Designed according to VME specifications, can also be used with Vector Uncommitted Backplanes. Terminator boards can be mounted on extender cards for proper bus termination during testing. Two versions available: perpendicular mounting; and parallel mounting on right angle connector, for applications in which space is restricted. Both versions come two to a package—parallel version includes one right side, one left side.



### Terminator Boards

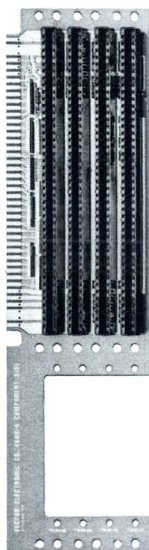
Part No.	Description	Height	Width	Thickness
VMETBJ1	J1, perpendicular to backplane	3.70"	1.325"	.520"
VMETBJ1-P	J1, parallel to backplane	3.70"	1.000"	.520"
VMETBJ2	J2, perpendicular to backplane	3.70"	1.325"	.520"
VMETBJ2-P	J2, parallel to backplane	3.70"	1.000"	.520"



## Multibus Backplanes

Fully assembled and tested, Vector Backplanes for Multibus (IEEE 796) applications. Four-slot backplane features:

- Termination resistors on bus lines
- Solder pads for mounting reset switch
- Gold-plated card connectors with 0.6" contact spacing and full-bellows contact design
- Solder-mask protection
- Easy-to-read component legend on backplane surface



## STD Bus Backplanes

Fully assembled and tested, Vector Backplanes for STD Bus applications. Eight- or 16-slot versions available, connector spacing is on 0.75" centers. Speed capabilities up to 10 MHz; ample positions for decoupling capacitors. Meets all STD Bus specifications, including interrupt priority lines. Featuring:

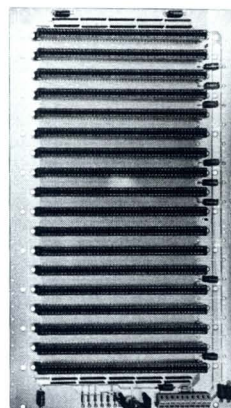
- Faraday shield lines reduce cross talk
- Wiring pads on board to connect RESET switch for front panel controls
- High reliability connectors with gold/plated contacts and 10 position power connector



## S100 Backplanes

Fully assembled and tested, Vector Backplanes for S100 applications. Available in 6-, 12- or 18-slot versions, connector spacing is on 0.75" centers. Speed capabilities up to 10 MHz; ample positions for decoupling capacitors. Featuring:

- Faraday shield lines reduce cross talk
- Special etched circuit pattern facilitates active termination on all signal lines
- Components for active termination circuit: connectors, capacitors, decoupling capacitors, resistors, voltage regulator, and quick-release terminal switch
- Wiring pads on board for connecting RESET switch for front panel controls



- Solder masks prevent bridging during soldering
- Pin legend on backplane surface for easy assembly and application

### Multibus, Bus Backplanes

Part No.	Description	Dimensions			Connector Spacing	Accessories		
		Width	Length	Thickness		Plugbord Series	Extender	Card Racks/Enclosure
4608-4-1	4 Slot Assembled	3.33	12.52	1/16	.600	4608 Series	3690-18	

### STD Bus Backplanes

Part No.	Description	Dimensions			Connector Spacing	Accessories		
		Width	Length	Thickness		Plugbord Series	Extender	Card Racks/Enclosure
4610-8-1A	8 Slot Assembled	4.35	7.00	1/16	.750	4610 Series	3690-16	CCK13 Series
4610-16-1A	16 Slot Assembled	4.35	13.00	1/16	.750	4610 Series	3690-16	

### S100 Backplanes

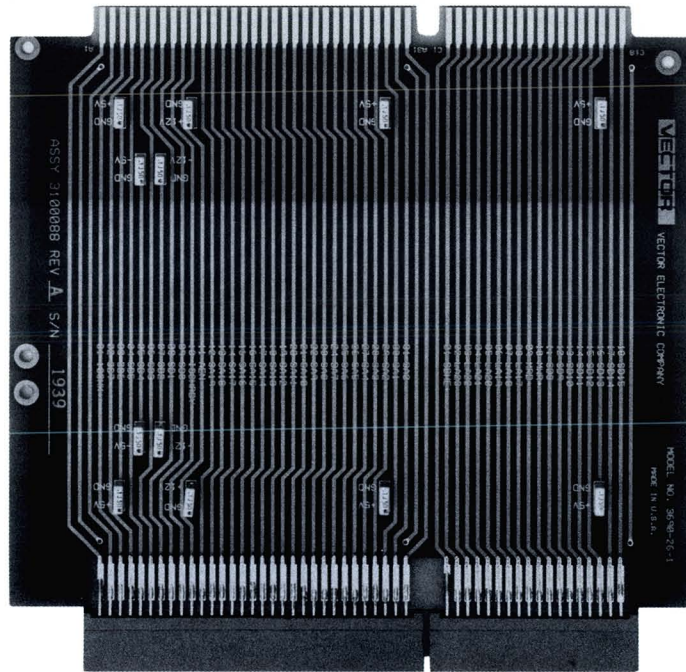
Part No.	Number of Card Slots	Motherbord Supplied	Board Size			Board Material	Motherbord Connector	Accessories	
			Width	Length	Thickness			Extender	Card Racks/Enclosure
8803-6-1A	6	Assembled	6.50	9.00	1/16	Epoxy Glass	Supplied	3690-12	CCK100S
8803-12-1A	12	Assembled	9.00	11.125	1/16	Epoxy Glass	Supplied	3690-12	
8803-18-1A	18	Assembled	9.00	15.55	1/16	Epoxy Glass	Supplied	3690-12	

**Multilayer AT  
Extender Card: Ideal  
For High Performance  
Board Testing**

The 3690-26-1 Vectorbord® multilayer extender board is designed for testing IBM AT and compatible boards especially in high performance applications.

Two outer layers for signal hook-up are separated by two inner layers, power and ground. This multilayer construction results in an extremely quiet board virtually eliminating crosstalk and distortion. To further reduce noise, all power lines are filtered with bypass capacitors.

For user convenience, at AT bus pin legend is clearly marked on both sides of board surface. This enables accurate testing using test points at the connector. All connector contacts are gold plated to ensure secure connections.



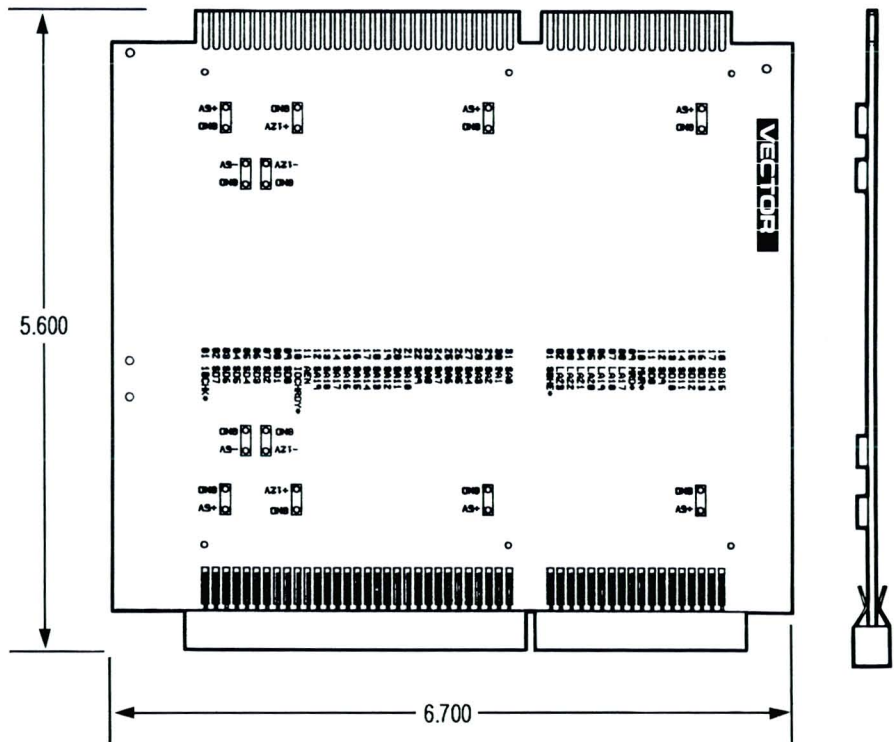
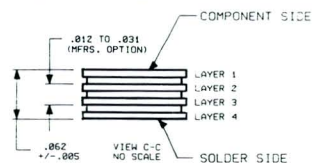
**3690-26-1**

- High performance multilayer design
- Quiet operation, no crosstalk or distortion
- Power lines filtered with bypass capacitors further reduces noise
- AT Bus pin legend clearly identifies pin designations
- Provisions for convenient attaching of test probes to pins at connector
- Finest quality laminated, copper and gold for accuracy

**Specifications**

**Laminate:** FR4 Epoxy  
**Copper Layers:** 2 oz. (.0028 in.) inner and outer  
**Contacts:** nickel/gold plated fingers  
**Solder coat:** both sides  
**Thickness:** 0.062" in.  
**Capacitors (12):** .1Mf, 50V, 20%

**Layer Designations**



12460 Gladstone Ave., Sylmar, CA 91342 Phone (818) 365-9661 Fax (818) 365-5718  
 Inside CA (800) 426-4652 Outside CA (800) 423-5659

## Vectorbord® Extender Cards

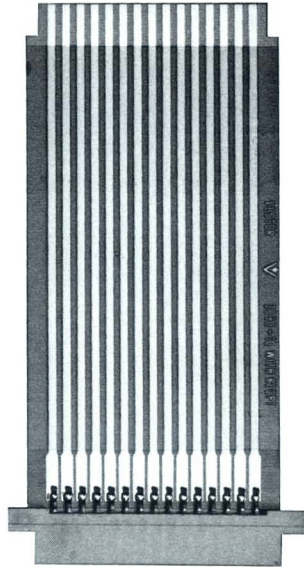
Vectorbord® Extender Cards provide convenient access to functioning circuit boards for testing. Engineered for quality, Vectorbord Extenders include many standard features:

- Low insertion force, gold-plated connectors for reliable contact, minimum wear on circuit board
- Gold/nickel plated connector contacts
- Epoxy glass composite—2 oz. copperclad

### 30 Contacts

#### 3690-10:

- Extension length: 5.5"
- 15 contacts per side on 0.156" centers
- Fits Vector Series 12 Subracks
- Current rating: 5 amps at 10 degrees Farenheit rise
- Voltage rating: 200 RMS or 300 VDC



### 44 Contacts

#### 3690:

- Extension length: 6.5"
- 22 contacts per side on 0.156" centers
- Fits Vector Series 13 Subracks
- Current rating: 5 amps at 10 degrees Farenheit rise
- Voltage rating: 200 RMS or 300 VDC

#### 3690-6:

- Extension length: 11"
- 22 contacts per side on 0.156" centers
- Fits Vector Series 14 Subracks
- Current rating: 5 amps at 10 degrees Farenheit rise
- Voltage rating: 200 RMS or 300 VDC

#### 3690-8:

- Extension length: 5.5"
- 22 contacts per side on 0.1" centers
- Fits Vector Series 12 Subracks
- Current rating: 5 amps at 10 degrees Farenheit rise
- Voltage rating: 200 RMS or 300 VDC



3690 SHOWN

### 56 Contacts

#### 3690-16:

- Extension length: 6.5"
- 28 contacts per side on 0.125" centers
- Fits Vector Series 13 Subracks
- Also fits STD bus specifications
- Current rating: 5 amps at 10 degrees Farenheit rise
- Voltage rating: 200 RMS or 300 VDC



#### Extender Cards

Part No.	Contacts	Spacing	Height	Width	Material	Bus
3690-10	30	0.156	5.500	2.730	Epoxy Glass Composite	—
3690-8	44	0.100	5.500	2.730	Epoxy Glass Composite	—
3690	44	0.156	6.500	4.500	Epoxy Glass Composite	—
3690-6	44	0.156	11.000	4.500	Epoxy Glass Composite	RCA Cosmac
3690-16	56	0.125	6.500	4.500	Epoxy Glass Composite	SDT

## General Purpose Plugbord Extenders

## VECTORBORD® EXTENDER CARDS

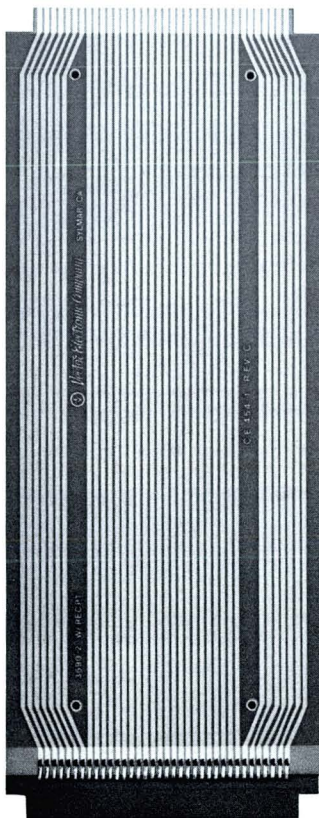
### 72 Contacts

#### 3690-2:

- Extension length: 11"
- 36 contacts per side on 0.10" centers
- Fits Vector Series 14 Subracks
- Current rating: 5 amps at 10 degrees Farenheit rise
- Voltage rating: 200 RMS or 300 VDC

#### 3690-4:

- Extension length: 7.5"
- 36 contacts per side, on 0.10" centers
- Fits Vector Series 13 Subracks
- Current rating: 5 amps at 10 degrees Farenheit rise
- Voltage rating: 200 RMS or 300 VDC

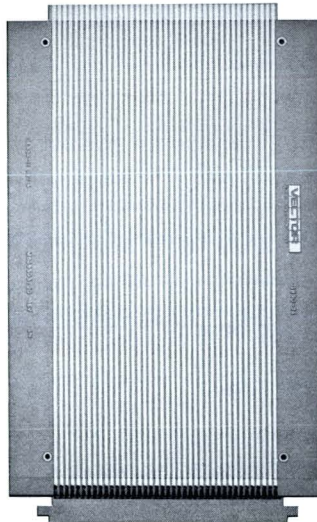


3690-2 SHOWN

### 80 Contacts

#### 3690-14:

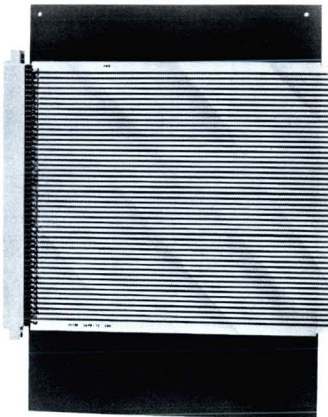
- Extension length: 11"
- 40 contacts per side, on 0.125" centers
- Current rating: 5 amps at 10 degrees Farenheit rise
- Voltage rating: 200 RMS or 300 VDC



### 100 Contacts

#### 3690-12:

- Extension length: 7.5"
- 50 contacts per side, on 0.125" centers
- Designed to S100 bus specifications
- Fits Vector CCK100S Subracks
- Current rating: 5 amps at 10 degrees Farenheit rise
- Voltage rating: 200 RMS or 300 VDC



Extender Cards							
Part No.	Contacts	Spacing	Height	Width	Materials	Bus	
3690-2	72	0.100	11.000	4.500	Epoxy Glass Composite	—	
3690-4	72	0.100	7.500	4.500	Epoxy Glass Composite	—	
3690-14	80	0.125	11.000	6.990	Epoxy Glass Composite	T1	
3690-12	100	0.125	7.500	10.000	Epoxy Glass Composite	S100	

## Vectorbord® Metric Extender Cards

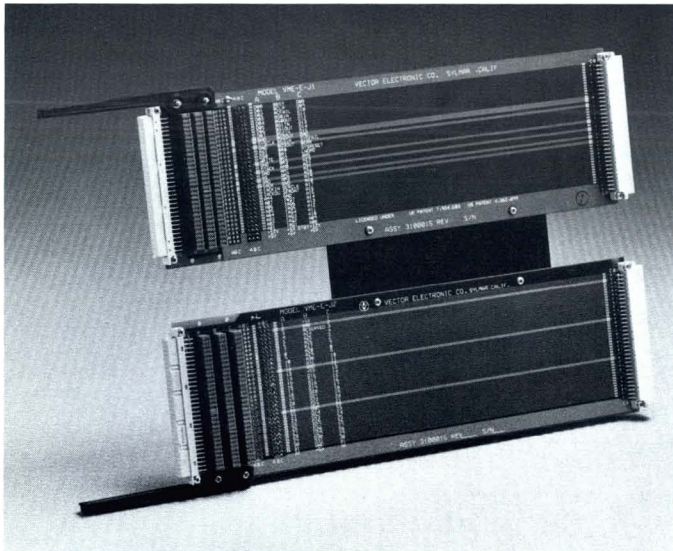
### VME Extenders

VME Extender Cards for 160mm and 220mm card cages. Three-layer construction, controlled impedance design, and patented signal trace shielding minimize crosstalk. Jumpers are provided for interrupting all signal lines. Mounting pads for additional DIN connector or for test point mounting of logic analyzer also included.

Also available: Uncommitted extender cards. Contact factory.

### Excellent Selection of Options

Termination for Vector J1 and J2 backplanes can be moved to extenders using male DIN connector (included) and Vector VMETB Terminator Boards, available separately. Blank extender provides rigidity when using a 3U extender in 6U card cage. Extender bracket, Part No. BR6U, can be used to connect J1 and J2 backplanes, or to connect blank extender, Part No. EB220-3U, to J1 or J2 backplane. J1 Extender, extender bracket, and blank extender are available separately or can be ordered as an assembly, Part No. VMEE-J1/B.

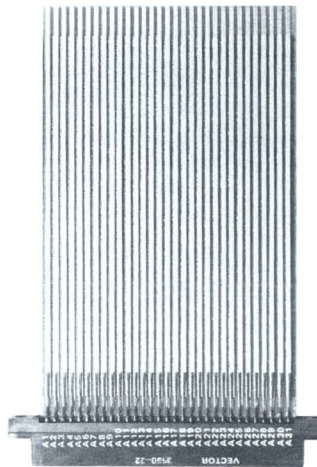


VMEE-M Extender Bracket Assembly

## IBM PC, XT

### 3690-22:

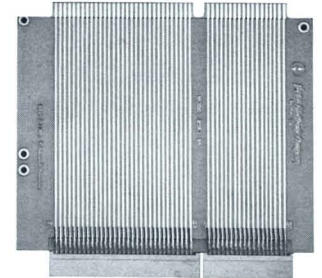
- Extension length: 5.7"
- Double-sided, controlled impedance board
- 62 Contacts on 0.1" centers
- Test points for mounting probes on each connector line
- Current rating: 5 amps at 10 degrees Farenheit temperature rise
- Voltage rating: 200 RMS or 300 VDC
- Flame retardant laminate construction, 2 oz. copperclad



## IBM AT

### 3690-26:

- Extension length: 5.6"
- Double-sided, controlled impedance board
- Two sets of contacts—36 and 62 on 0.1" centers
- Current rating: 5 amps at 10 degrees Farenheit temperature rise
- Voltage rating: 200 RMS or 300 VDC
- Test points for mounting probes on each connector line
- Also available: 3690-26-1, multilayer extender with decoupling capacitors (see page 86)



#### Extenders And Brackets

Part No.	Description	Height	Width	Layers
VMEEJ1	J1 Extender	3.94"	12.20"	3
VMEEJ2	J2 Extender	3.94"	12.20"	3
EB220-3U	Blank Extender	3.94"	11.40"	
BR6U	Extender Bracket (For Connecting J1 and J2 Extenders)			

#### Extender Cards

Part No.	Contacts	Spacing	Height	Width	Materials	Bus
3690-22	62	0.100	5.100	3.180	Epoxy Glass Composite	IBM PC, XT
3690-26	36 62	0.100 0.100	5.600	6.700	Epoxy Glass Composite	IBM AT

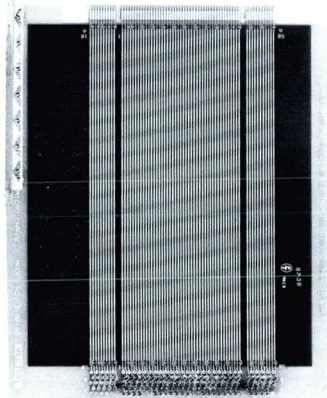
## Bus Specific Extenders

## VECTORBORD® EXTENDER CARDS

### IBM PS/2

#### 3690-30:

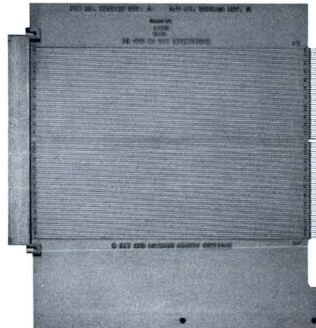
- Extension length: 7.5"
- Multilayer design, controlled impedance, engineered to maintain signal integrity at high speeds
- Decoupling capacitors included
- 16 bit connector, includes buses for video extension
- Current rating: 1.6 amps maximum
- Voltage rating: 40V DC
- Test points for mounting probes on each connector line



### IBM PS/2

#### 3690-31:

- Extension length: 7.5"
- Multilayer design, controlled impedance, engineered to maintain signal integrity at high speeds
- Decoupling capacitors included
- 32 bit connector, includes buses for matched memory extension
- Current rating: 1.6 amps maximum
- Voltage rating: 40V DC
- Test points for mounting probes on each connector line



### Apple Macintosh II

#### 3690-27:

- Extension length: 4.5"
- Double-sided, controlled impedance board
- Male and female DIN connectors installed
- Current rating: 1.5 amps per connector line
- Test points for mounting probes on each connector line

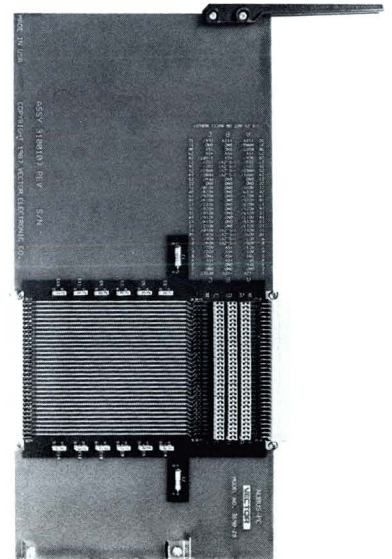


### Apple Macintosh II

#### 3690-28:

*High Performance Extender Card For Macintosh II*

- Extension length: 6.3"
- Five-layer, stripline design
- Controlled impedance, engineered for signal integrity at high speeds
- Decoupling capacitors (installed) minimize crosstalk
- All signal lines can be interrupted with jumpers plugged into connector on card surface
- Test points for mounting probes on each connector line
- Bus line identification on card surface for user convenience
- Current rating: 1.5 amps per connector line
- Voltage rating: 200 RMS or 300 VDC
- Fully equipped—includes male and female 96 pin DIN connectors and mounting brackets



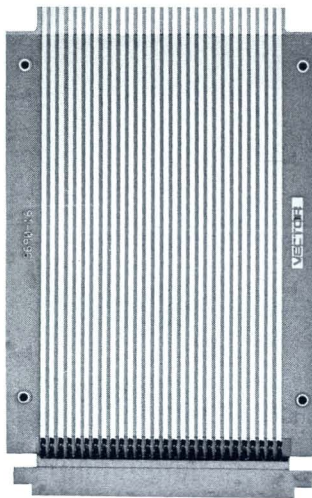
#### Extender Cards

Part No.	Contacts	Spacing	Height	Width	Material	Bus
3690-30	66	0.050"	7.475	6.100	Epoxy Glass	PS/2 50,60
3690-31	91	0.050"	7.475	7.650	Epoxy Glass	PS/2 80
3690-27	96	0.1"	4.500	4.000	Epoxy Glass	Mac II
3690-28	96	0.1"	6.300	12.860	Epoxy Glass	Mac II

## STD Extenders

### 3690-16:

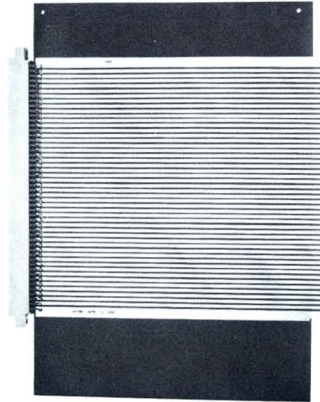
- Extension length: 6.5"
- Double-sided, controlled impedance board
- High reliability, gold-plated connector (mounted)
- Contact fingers on card are nickel/gold-plated
- 2 oz. copperclad, flame retardant epoxy glass composite material—94V-O UL classification
- Current rating: 5 amps at 10 degrees Fahrenheit temperature rise
- Voltage rating: 200 RMS or 300 VDC



## S-100 Extenders

### 3690-12:

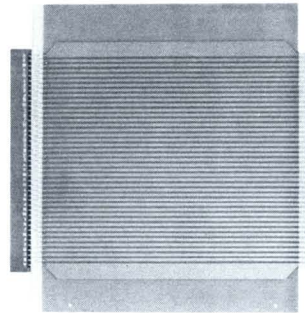
- Extension length: 7.5"
- Double-sided, controlled impedance board
- High reliability, gold-plated connector (mounted)
- Contact fingers on card are nickel/gold-plated
- 2 oz. copperclad, flame retardant epoxy glass composite material—94V-O UL classification
- Current rating: 5 amps at 10 degrees Fahrenheit temperature rise
- Voltage rating: 200 RMS or 300 VDC



## Motorola Exorciser, Micromodule Extenders

### 3690-20:

- Extension length: 9"
- Double-sided, controlled impedance board
- High reliability, gold-plated connector (mounted)
- Contact fingers on card are nickel/gold-plated
- 2 oz. copperclad, flame retardant epoxy glass composite material—94V-O UL classification
- Current rating: 5 amps at 10 degrees Fahrenheit temperature rise
- Voltage rating: 200 RMS or 300 VDC



## Multibus Extenders

### 3690-18:

- Extension length: 7.65"
- Double-sided, controlled impedance board
- Reliable, gold-plated connector—mounted on top and connected to circuit traces
- Nickel/gold-plated contact fingers on extender card
- Current rating: 5 amps at 10 degrees Fahrenheit temperature rise
- Voltage rating: 200 RMS or 300 VDC
- Flame retardant laminate construction, 2 oz. copperclad
- Also functions as cable terminator or experimental plugboard



Extender Cards

Part No.	Contacts	Spacing	Height	Width	Material	Bus
3690-16	56	0.125	6.500	4.500	Epoxy Glass Composite	SDTI
3690-12	100	0.125	7.500	10.000	Epoxy Glass Composite	S100
3690-20	86	0.156	9.000	9.750	Epoxy Glass Composite	Motorola
3690-18	60	0.100	7.650	12.000	Epoxy Glass Composite	Multibus





## Vectorbord® Printed Circuit Board Connectors

## R600 Series Wire Wrap and Solder Tail Edge Card Connectors For 0.062" Thick Printed Circuit Boards

Designed for low insertion force, minimum wear on circuit board edge contacts. Mating contacts are gold/nickel plated for reliability. Highly efficient, 30Mv maximum contact resistance drop at 3 amps rated current. Insulation resis-

tance is 5000 Megohms at 500V DC. Vectorbord® Edge Card Connectors are supplied with between-contact polarizing keys. R630 and R644 connectors supplied with in-contact polarizing keys.

### General Specifications:

#### Solder Type Insulator Material:

Phenolic, UL-94V-0 or Glass filled diallyl phthalate UL-94V 1 or Ryton R10.

#### Wire Wrap Type Insulator Material:

Phenolic, UL-94V-0 or Glass filled diallyl phthalate UL-94V-1 or Polyester (VALOX) UL-94V-0.

#### Contact Material:

Phosphor bronze QQ-B-750 or Beryllium copper.

#### Contact Plating:

.000010" gold over  
.000050" nickel.

#### Test Voltage:

650 VAC.

#### Rated Current:

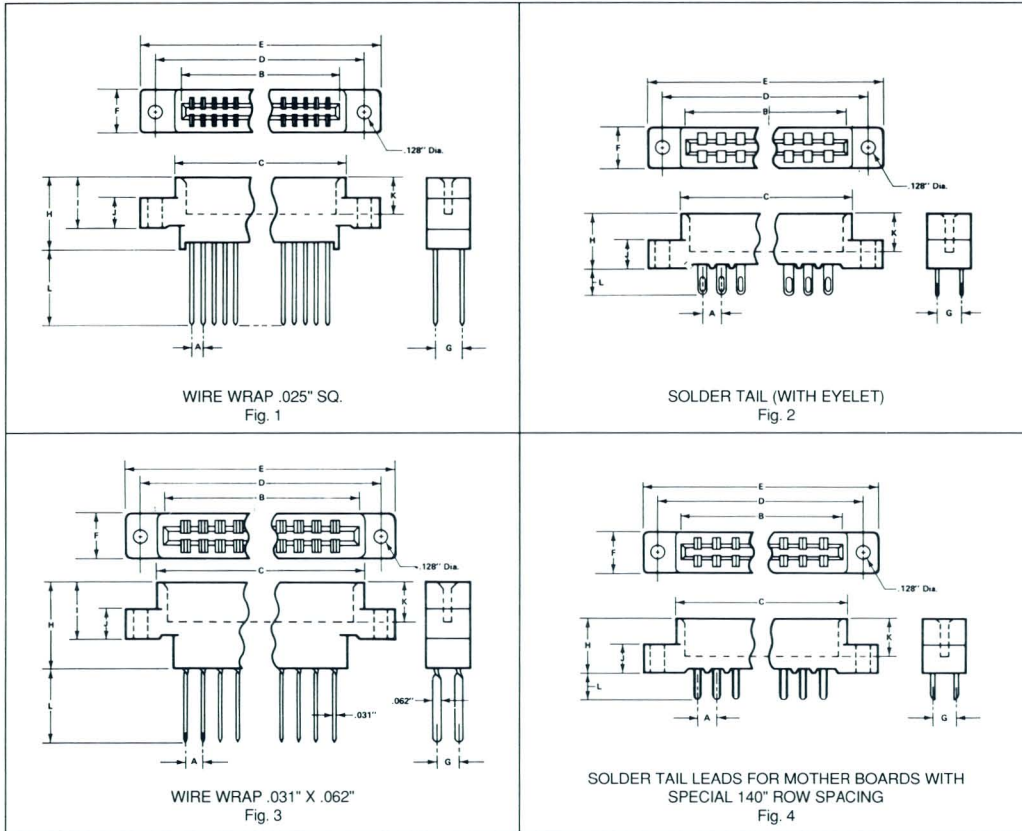
3 AMPS.

#### Contact Res. Drop:

30 MV Max. @ rated current.

#### Insulation Resistance:

5000 meghoms, mon. @ 500 VDC.



### Connector Ordering Table By Contact Centers

Part No.	A Ctrs.	No. of Contacts	Termination Type	B Card Slot	C	D Mtg. Hole Ctrs.	E	F	G Row Spacing	H	I	J	K	L	Mounting Ears	Fig.
R644-2	.100	44	Wire Wrap	2.300	2.55	2.850	3.120	.41	.200	.62	.55	.25	.34	.65	Center	1
R683-1	.100	60	Solder Tail	3.100	3.28	3.575	3.950	.41	.200	.47	n/a	.25	.34	.25	Flush	2
R636	.100	72	Wire Wrap	3.707	3.88	4.175	4.475	.41	.200	.62	.55	.25	.34	.65	Center	1
R636-1	.100	72	Wire Wrap	3.707	3.88	4.175	4.475	.41	.200	.62	.55	.25	.34	.65	Center	1
R636-2	.100	72	Solder Tail	3.707	3.88	4.175	4.475	.41	.200	.47	n/a	.25	.34	.25	Flush	2
R656	.125	56	Wire Wrap	3.625	3.79	4.045	4.325	.41	.250	.62	.55	.25	.34	.65	Center	1
R656-1	.125	56	Solder Tail	3.625	3.79	4.045	4.336	.41	.200	.47	n/a	.25	.34	.25	Flush	2
R656-2	.125	56	Wire Wrap	3.625	3.79	4.045	4.325	.41	.250	.62	.55	.25	.34	.22	Center	1
R680	.125	80	Wire Wrap	5.125	5.29	5.545	5.805	.41	.250	.62	.55	.25	.34	.65	Center	1
R680-1	.125	80	Wire Wrap	5.125	5.29	5.545	5.805	.41	.250	.62	.55	.25	.34	.65	Center	1
R680-2	.125	80	Solder Tail	5.125	5.29	5.545	5.805	.41	.200	.62	.55	.25	.34	.65	Center	2
R681	.125	100	Solder Tail	6.375	6.54	6.795	7.065	.33	.150	.45	n/a	.25	.34	.23	Flush	4
R681-1	.125	100	Wire Wrap	6.375	6.54	6.795	7.065	.41	.250	.62	.55	.25	.34	.65	Center	1
R681-2	.125	100	Wire Wrap	6.375	6.54	6.795	7.065	.41	.250	.62	.55	.25	.34	.22	Center	4
R681-3	.125	100	Solder Tail	6.375	6.54	6.795	7.065	.41	.200	.47	n/a	.25	.34	.25	Center	2
R630	.156	30	Solder Tail	2.504	2.65	2.938	3.270	.41	.200	.47	n/a	.25	.34	.25	Center	2
R644	.156	44	Solder Tail	3.596	3.75	4.032	4.360	.41	.200	.47	n/a	.25	.34	.25	Flush	2
R644-1	.156	44	Wire Wrap .031 x .062	3.596	3.75	4.032	4.360	.36	.188	.72	.46	.25	.35	.77	Center	3
R644-3	.156	44	Wire Wrap	3.596	3.75	4.032	4.360	.41	.200	.62	.55	.25	.34	.65	Center	1
R685-1	.156	86	Solder Tail	6.872	7.00	7.302	7.550	.41	.200	.47	n/a	.25	.34	.25	Flush	2
R685-2	.156	86	Solder Tail	6.802	7.00	7.302	7.550	.41	.200	.47	n/a	.25	.34	.25	Flush	2

## Vectorbord® Printed Circuit Board Connectors

## 96-Pin DIN Connectors

For solder or Wire Wrap applications, designed in accordance with DIN specification 41612. DIN Connectors, essential

components of the DIN/Eurocard Standard, are also used with many bus specific and uncommitted architectures, including VMEbus and Multibus. Superior, two-piece design features gold/nickel plated

copper alloy contacts and glass-filled polycarbonate or polyether sulphone insulating material. Excellent electrical properties. Custom configurations available per special order.

### Fully Loaded 96 Position Connectors, Type C

Style	Part No.	Terminal Leads & Application	Photo
1	RE96MSR		
2	RE96FW		
3	RE96FSD		
4	RE96FWP		
5	RE96MWR		

### Materials

Insulating material: Glass-filled polycarbonate or polyether sulphone  
Contact material: Copper alloy  
Contact plating: Gold over nickel

### Physical Data

Temperature range: -55 ... +125°C  
Insertion force: ≤ 90 N ≤ 20 LBS.  
Tested durability according to IEC: > 400 cycles

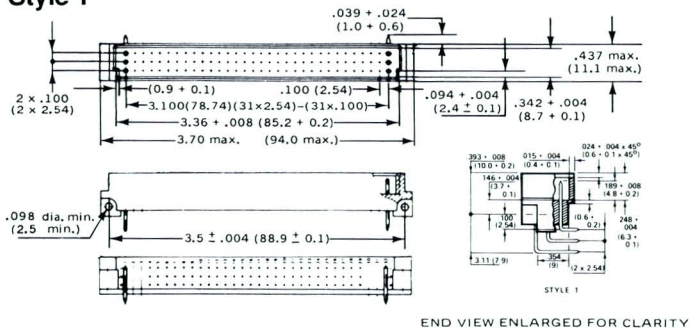
### Electrical Data

Current rating: 1.5A at 20°C;  
1A at 70°C  
Operating voltage: 300V AC  
Test voltage: 1000V AC  
Contact resistance: ≤ 20 milli-ohms  
Insulating resistance: ≥ 1 x 10<sup>9</sup> ohms

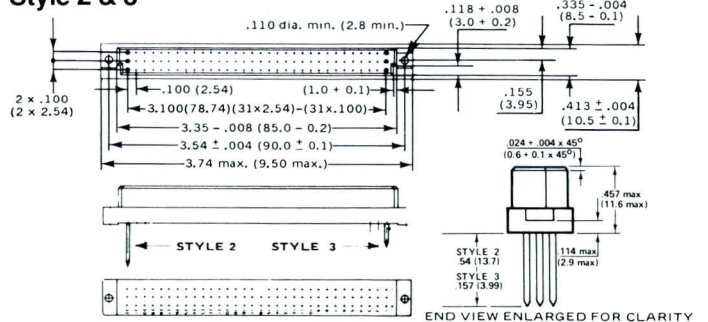
### 96-Pin DIN Connectors

Part No.	Style	M/F	Contact Length	Type
RE96FSD	3	F	0.157	Solder Tail
RE96MSD	1	M	0.157	Solder Tail
RE96FSP	4	F	0.208	Pressfit Solder Tail
RE96FSR	1	F	0.087	Solder Tail, Right Angle
RE96FW	2	F	0.54	Wire Wrap
RE96FWP	4	F	0.366	Pressfit Wire Wrap
RE96FWP-G	4	F	0.366	Pressfit Wire Wrap, Gold Plated
RE96MSR-062	1	M	0.087	Solder Tail, Right Angle
RE96MSR-125	1	M	0.174	Solder Tail, Right Angle
RE96MW	2	M	0.54	Wire Wrap
RE96MWR	5	M	0.445	Wire Wrap, Right Angle

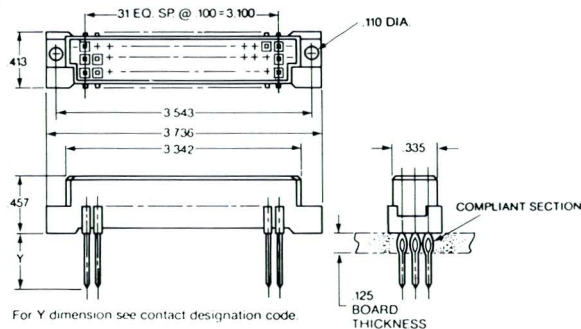
### Style 1



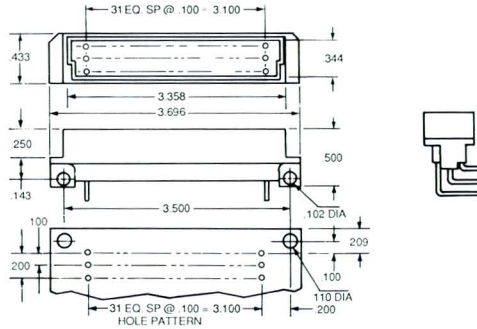
### Style 2 & 3



### Style 4



### Style 5

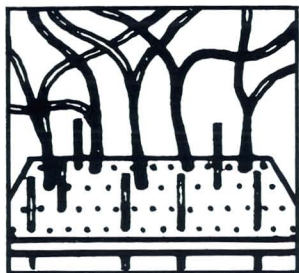


**Connector Accessories**

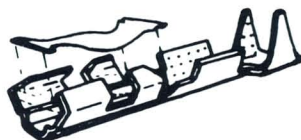
**T120-1 Slip-On Contacts**

Ideal for applications requiring quick tests and changes. Tin-plated contacts slip easily onto 0.025" square wrap posts

or pins. Contacts are installed on wire reels, spaced 5" apart.



Wired together "daisy chain" 28 gage stranded



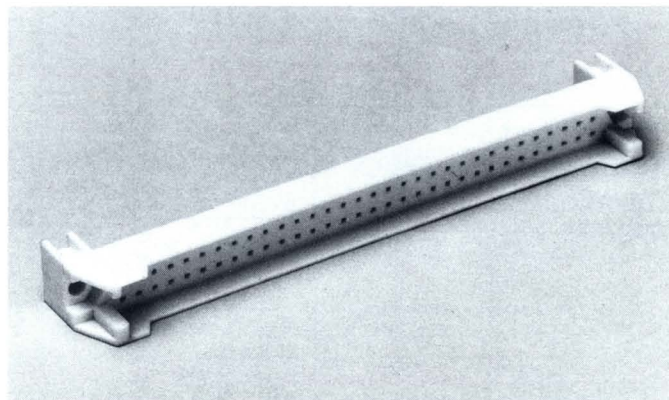
T120 slip-on contacts for .025" square pins, single contacts

Part Number	Contact Description	Package Quantity
T120-1/50	Installed on wire	Reel of 50
T120-1/250	Installed on wire	Reel of 250

**79900004 Connector Shrouds**

Vector Connector Shrouds provide protective support and housing for wrap tails of 96-pin DIN connectors. Connector Shrouds can

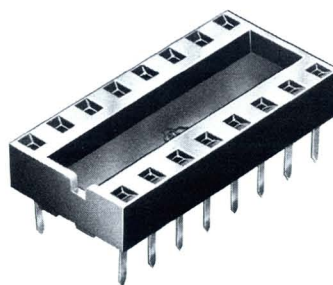
convert tails into a 96-pin male DIN connector that can be mated with 96-pin female DIN connector.



**R700 Series DIP Sockets**

DIP Socket configurations accommodate most DIP IC packages and include many outstanding features:

- Gold springs in contact areas
- Designed to accept rectangular and round component leads
- Molded, glass-filled nylon housings
- Designed for most Vector-board patterns
- Contact row spacing is 0.30"
- Vector P150 Extraction Tool available separately
- Also available: High performance DIP sockets with surface-mount decoupling capacitors, contact factory



Part No.	Package Quantity	Number of Contacts	Type	Casting Dimensions			Term. Length Below Casting
				Height	Length	Width	
R714/25	25	14	Wrap Post	.280	.765	.400	.690
R716/25	25	16	Wrap Post	.280	.865	.400	.690
R716-2/10	25	16	Solder Tail	.150	.800	.400	.150


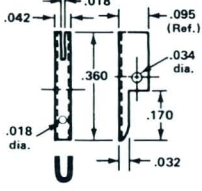

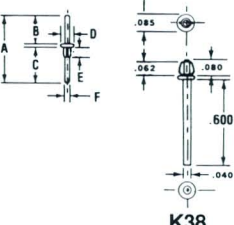


**For 0.042" Diameter Hole**  
Photo


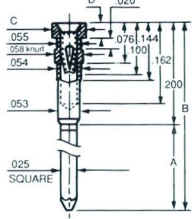

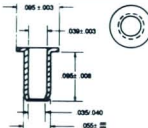
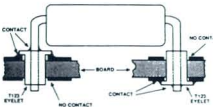
Dimensional  
Drawing

Dimensional  
Table


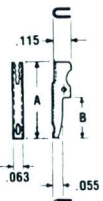

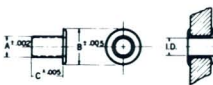
Application

<p><b>Push-In Terminals T42</b></p>																																																												
<p><b>Inbord Pins K36 K24 K26 K30 K31 K38</b></p>			<table border="1"> <thead> <tr> <th>Part No.</th> <th>Fits Hole Size</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>F</th> </tr> </thead> <tbody> <tr> <td>K24*</td> <td>.042</td> <td>.650</td> <td>.255</td> <td>.375</td> <td>.085</td> <td>.080</td> <td>.039</td> </tr> <tr> <td>K26</td> <td>.042</td> <td>.375</td> <td>.160</td> <td>.195</td> <td>.075</td> <td>.080</td> <td>.040</td> </tr> <tr> <td>K30</td> <td>.042</td> <td>.550</td> <td>.225</td> <td>.305</td> <td>.085</td> <td>.060</td> <td>.040</td> </tr> <tr> <td>K31</td> <td>.042</td> <td>.375</td> <td>.160</td> <td>.195</td> <td>.075</td> <td>.060</td> <td>.040</td> </tr> <tr> <td>K36</td> <td>.025</td> <td>.705</td> <td>.283</td> <td>.400</td> <td>.040</td> <td>.050</td> <td>.023</td> </tr> <tr> <td>K38</td> <td colspan="7">See illustration for dimensions.</td> </tr> </tbody> </table> <p>* Use in G-10 epoxy glass board only.</p>	Part No.	Fits Hole Size	A	B	C	D	E	F	K24*	.042	.650	.255	.375	.085	.080	.039	K26	.042	.375	.160	.195	.075	.080	.040	K30	.042	.550	.225	.305	.085	.060	.040	K31	.042	.375	.160	.195	.075	.060	.040	K36	.025	.705	.283	.400	.040	.050	.023	K38	See illustration for dimensions.							
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K38	See illustration for dimensions.																																																											

**For 0.055" Diameter Holes**

<p><b>Socket Pins R30 R31 R50 R51 R52 R53</b></p>	 <p>R30 R31 R50</p>		<table border="1"> <thead> <tr> <th>Part No.</th> <th>Pkg. Qty.</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>Male Pin Depth</th> </tr> </thead> <tbody> <tr> <td>R30/C</td> <td>100</td> <td>.286</td> <td>.110</td> <td>.072</td> <td>.030</td> <td>.15</td> </tr> <tr> <td>R30/M</td> <td>1000</td> <td>.286</td> <td>.110</td> <td>.072</td> <td>.030</td> <td>.15</td> </tr> <tr> <td>R31/C</td> <td>100</td> <td>.703</td> <td>.500</td> <td>.072</td> <td>.030</td> <td>.17</td> </tr> <tr> <td>R31/M</td> <td>1000</td> <td>.703</td> <td>.500</td> <td>.072</td> <td>.030</td> <td>.17</td> </tr> <tr> <td>R50/C</td> <td>100</td> <td>.560</td> <td>.360</td> <td>.062</td> <td>—</td> <td>—</td> </tr> <tr> <td>R50/M</td> <td>1000</td> <td>.560</td> <td>.360</td> <td>.062</td> <td>—</td> <td>—</td> </tr> <tr> <td>R51/C</td> <td>100</td> <td>.560</td> <td>.360</td> <td>.062</td> <td>—</td> <td>—</td> </tr> <tr> <td>R51/M</td> <td>1000</td> <td>.560</td> <td>.360</td> <td>.062</td> <td>—</td> <td>—</td> </tr> <tr> <td>R52/C</td> <td>100</td> <td>.700</td> <td>.500</td> <td>.062</td> <td>—</td> <td>—</td> </tr> <tr> <td>R52/M</td> <td>1000</td> <td>.700</td> <td>.500</td> <td>.062</td> <td>—</td> <td>—</td> </tr> <tr> <td>R53/C</td> <td>100</td> <td>.700</td> <td>.500</td> <td>.062</td> <td>—</td> <td>—</td> </tr> <tr> <td>R53/M</td> <td>1000</td> <td>.700</td> <td>.500</td> <td>.062</td> <td>—</td> <td>—</td> </tr> </tbody> </table>	Part No.	Pkg. Qty.	A	B	C	D	Male Pin Depth	R30/C	100	.286	.110	.072	.030	.15	R30/M	1000	.286	.110	.072	.030	.15	R31/C	100	.703	.500	.072	.030	.17	R31/M	1000	.703	.500	.072	.030	.17	R50/C	100	.560	.360	.062	—	—	R50/M	1000	.560	.360	.062	—	—	R51/C	100	.560	.360	.062	—	—	R51/M	1000	.560	.360	.062	—	—	R52/C	100	.700	.500	.062	—	—	R52/M	1000	.700	.500	.062	—	—	R53/C	100	.700	.500	.062	—	—	R53/M	1000	.700	.500	.062	—	—	
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<p><b>Solder Eyelets T123</b></p>																																																																																															

**For 0.062" Diameter Holes**

<p><b>Push-In Terminals T28</b></p>			<table border="1"> <thead> <tr> <th>Part No.</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>T28</td> <td>.437</td> <td>.237</td> </tr> </tbody> </table>	Part No.	A	B	T28	.437	.237					
Part No.	A	B												
T28	.437	.237												
<p><b>Rolled Flanged Eyelet T15.23</b></p>			<table border="1"> <thead> <tr> <th>Part No.</th> <th>A</th> <th>B</th> <th>C</th> <th>I.D.</th> </tr> </thead> <tbody> <tr> <td>T15.23/M</td> <td>.059</td> <td>.150</td> <td>.093</td> <td>.068</td> </tr> </tbody> </table>	Part No.	A	B	C	I.D.	T15.23/M	.059	.150	.093	.068	
Part No.	A	B	C	I.D.										
T15.23/M	.059	.150	.093	.068										

**Socket Pins and Terminals**

**Socket Pins**

Vector socket pins with gold-plated contact surfaces, for 0.042" and 0.055" hole diameters. Precision 0.025" square posts provide excellent "grip" for both manual and automated Wire Wrap wiring. Engineered for secure electrical connections, easy insertion of leads, and solderless mounting. Available with two- or three-level Wire Wrap tails, and in standard (four-finger contacts) and low insertion force (six-finger contacts) models. Pressfit socket pins and gold-plated socket pins also available.

**Terminals**

Vector Wiring Terminals provide convenient, low-cost solutions for connection requirements. Engineered for versatility and reliability, and available in many styles and options.

See Selector Guides for Pins and Terminals pages 96, 97

**T124 Solder Washers**

Multi-functional solder washer kits, Vector Part No. T124, with three sizes of washers. Different sizes provided to fit over sockets and tails of most Vector socket pins and wiring terminals. Ideal tools for committing pins to voltage and ground planes in Vectorbord patterns, such as Voltage/Ground Plane and Vectorbord plus™, that have clearance area isolating holes from planes.



Part No. T124/M			
Qty.	I.D.	O.D.	Application
500	.078	.110	Vcc Side
500	.058	.103	GND Side
100	.040	.106	Connector
Part No. T124-040/500			
Qty.	I.D.	O.D.	Application
500	.040	.106	Connector

**For 0.042" Diameter Holes**

**R32 Socket Pin**

- Low profile Wire Wrap socket pins
- Pressfit mounting
- Four-finger contacts, tapered sockets for easy insertion



**T49 Trifurcated Klipwrap Terminals**

- Wire Wrap tail with three-pronged receptacle for wires or leads
- 0.025" square posts
- Wires or leads are crimped into receptacle on component side, secured for soldering
- Holds 0.018"-0.025" diameter leads or 22 gauge wires in lower slot, 0.032"-0.040" diameter leads or 17 gage wires in upper slot

**T44, T68 Bifurcated Miniwrap Terminals**

- Wire Wrap Tail with two-pronged receptacle for wires or leads
- 0.025" square posts
- Rectangular terminal with stepped shank presses securely into plated or unplated holes, requires no staking or soldering
- Bifurcated end holds soldered leads securely
- T44: maximum 0.021" diameter leads or 24 gage wires
- T68: maximum 0.032" diameter leads or 20 gage wires

**T46 Press-In Terminals**

- Single- and double-tailed (accessible from both sides) Wire Wrap terminals
- 0.025" square posts
- Provides secure contact without soldering or staking
- Rectangular base with stepped shank presses into plain or plated-thru holes and is retained without etching or soldering
- Pointed ends slide neatly into all wrapping bits

Terminal: Tin Plate Part No.	Terminal: Gold Plate Part No.	Package Quantity	Hand Insertion Tool	P158 Insertion Tool:		
				with Die	Anvil	Base
T44/M	T44-1/M	1000	A13	D11	D7-3	P96C1
T68/C	—	100	A13-1	D17	D7-3	P96C1
T68/M	T68-1/M	1000	A13-1	D17	D7-3	P96C1
T68A/M	—	1000	A13-1	D17	D7-3	P96C1
T46-2-9/M	T46-2A9/M	1000	P133B	D7-4	—	—
T46-3-9/C	—	100	P133B	D7-4	—	—
T46-3-9/M	T46-3A9/M	1000	P133B	D7-4	—	—
T46-4-9/C	—	100	P133B	D7-4	—	—
T46-4-9/M	T46-4A9/M	1000	P133B	D7-4	—	—
T46-5-9/C	—	100	P133B	D7-4	—	—
T46-5-9M	T46-5A9/M	1000	P133B	D7-4	—	—
T49/C	T49A/C	100	P156	D8	D7-3	P96C1
T49/M	T49A/M	1000	P156	D8	D7-3	P96C1

**For 0.042" Diameter Holes**

**T125, T126 Wire Wrap Terminals**

- Pressfit Wire Wrap terminals, ideal for voltage and ground holes in Vectorbord plus™ and Pads & Planes™ patterns
- Two-level terminals: Part No. T125
- Three-level terminals: Part No. T126
- 0.025" square posts
- Secure contact in plated-thru holes for soldering



**K32 J Pin Terminals**

- Wire Wrap terminal installs in two 0.042" diameter holes on 0.1" centers
- Short leg can be bent to secure pin
- Long post can share hole with T42-1 Micro-Klip



**T42 Push-In Terminals**

- Wiring terminals for mounting leads or wires horizontally or vertically (through board hole)
- Connections require no staking for most applications
- Horizontal slot holds up to seven wires, depending upon thickness of wire



**K36, K24, K26, K30, K31, K38 Inbord Pins**

- Press-in pins provide excellent solder points
- Installation tools available separately, see table
- Available in several sizes



See Selector Guides for Pins and Terminals pages 96, 97

Terminal: Tin Plate Part No.	Terminal: Gold Plate Part No.	Package Quantity	Hand Insertion Tool	P158 Insertion Tool:		
				with Die	with Anvil	with Base
K32/C	—	100	—	D14	A14	P96C1
K32/M	—	1000	—	D14	A14	P96C1
K32-2/M	—	1000	—	D14	A14	P96C1
T44/C	T44-1/C	100	A13	D11	D7-3	P96C1

Part No.	Type	For Hole Dia.	Package Quantity	Material	Plating	Hand Insertion Tool	P158 Impact Tool		
							Die	Anvil	with Base
K24A/M	Inbord Pin	.042	1000	Phosphor Bronze	Gold	P133A	D7-2	—	—
K24C/M	Inbord Pin	.042	1000	Phosphor Bronze	Tin	P133A	D7-2	—	—
K26C/M	Inbord Pin	.042	1000	Phosphor Bronze	Tin	P133A	D7-2	—	—
K30C/M	Inbord Pin	.042	1000	Phosphor Bronze	Tin	P133A	D7-2	—	—
K31A/M	Inbord Pin	.042	1000	Phosphor Bronze	Gold	P133A	D7-2	—	—
K31C/M	Inbord Pin	.042	1000	Phosphor Bronze	Tin	P133A	D7-2	—	—
K38C/M	Inbord Pin	.042	1000	Phosphor Bronze	Tin	P133A	D7-2	—	—
T42-1/C	Micro Klip	.042	100	Copper Alloy	Tin	P149 or P149A	—	—	—
T42-1/M	Micro Klip	.042	1000	Copper Alloy	Tin	P149 or P149A	—	—	—

**For 0.042" Diameter Holes**

**T112 Bus Links**

- 0.075" solder-coated links connect 0.1" hole centers and provide firm anchoring for 0.025" square wrap posts
- Also can be used to anchor DIP sockets
- Available in 0.2", 0.3", and 12" lengths, with cutout holes positioned at 0.1" intervals

Part No.	Pkg.	Len.	Holes	Ctrs
T112/C	100	12"	120	0.1"
T112-1/M	1000	0.2"	1	—
T112-2/M	1000	0.3"	1	—

**T107 Bus Strips**

- Solder-coated strips, 0.08" wide, with 0.042" diameter holes space on 0.1" centers
- Compatible with most Vectorbord® hole patterns
- Can be mounted on circuit boards as bus lines

Part No.	Package
T107/10	10
T107/C	100

**See Selector Guides for Pins and Terminals pages 96-97**

**For 0.055" Diameter Holes**

**Socket Pins**

For specification of package quantity, indicate either 1C for 100/package or 1M for 1000/package. Example: R31/C

**R31**

- Low profile Wire Wrap socket pins
- Four-finger contacts, tapered socket for easy insertion

**R50**

- Two-level Wire Wrap pins, 0.025" square posts
- Four-finger contacts, tapered sockets for easy insertion
- Gold-plated contact surfaces

**R51**

- Two-level Wire Wrap pins, 0.025" square posts
- Six-finger contacts, low insertion force sockets
- Gold-plated contact surfaces

**R52**

- Three-level Wire Wrap pins, 0.025" square posts
- Four-finger contacts, tapered sockets for easy insertion



R30 R31 R50

FOR EASY INSERTION OF THESE SOCKET PINS USE P158 INSERTION TOOL AND D19 DIE

- Gold-plated contact surfaces

**R53**

- Three-level Wire Wrap pins, 0.025" square posts
- Six-finger contacts, low insertion force sockets
- Gold-plated contact surfaces

**R30**

- Low profile, pressfit pins, for hand or dip solder applications
- Solder post is 0.110" long, extends 0.19" below and 0.030" above board surface

**T123 Solder Eyelets**

- Used to commit holes to power and ground planes, for printed circuit boards with clearance areas isolating holes from planes
- Simulates plated-thru hole
- Reduces diameter of 0.055" holes to 0.042"
- Also can be used in I/O connector area on many Vectorbord prototyping boards



**For 0.062" Diameter Holes**

**T28 Push-In Terminals**

- Wiring terminals for mounting leads or wires horizontally or vertically (through board holes)
- Connections require no staking for most applications
- Vertical (longitudinal) slot holes 0.025" diameter leads or .22 gage wires
- Includes 0.018" diameter tab hole which accepts transistor wires, can be used to hold an anchoring wire

**T19/M Turret Terminal**

- Turret eyelet for 0.062" diameter holes, 0.062" thick boards

**T15.23/M Rolled Flange Eyelet**

- Eyelet for 0.062" diameter holes
- Can be used to simulate plated-thru holes in G and H pattern Vectorbord® prototyping boards
- Also can be used to reduce hole sizes



Part No.	Type	For Hole Dia.	Package Quantity	Material	Plating	Hand Insertion Tool	P158 Impact Tool INSERTION		
							Die	Anvil	with Base
T28/C	Mini-Klip	.062	100	Phosphor Bronze	Tin	P91 or P 91A	—	—	—
T28/M	Mini-Klip	.062	1000	Phosphor Bronze	Tin	P91 or P 91A	—	—	—



Wire

An excellent selection of wire products, many choices of gage size, color, and insulating materials.

**Wire For Slit-N-Wrap® Wire Wrapping Tools**  
**Tefzel Insulated Silver Plated Wire for use with No. 02 Bit**

Part No.	AWG	Color	Spool Dia.	Feet per Spool	Spools Per Pkg.
W28-6A	28	green	1"	50	2
W28-6B	28	red	1"	50	2
W28-6D	28	blue	1"	50	2
W28-6E	28	white	1"	50	2
W28-6F	28	yellow	1"	50	2
W28-6H	28	black	1"	50	2
W28-6AU	28	green	1-1/2"	150	1
W28-6BU	28	red	1-1/2"	150	1
W28-6DU	28	blue	1-1/2"	150	1
W28-6EU	28	white	1-1/2"	150	1
W28-6FU	28	yellow	1-1/2"	150	1
W28-6HU	28	black	1-1/2"	150	1

**Tefzel Insulated Silver Plated Wire for use with No. 04 Bit**

Part No.	AWG	Color	Spool Dia.	Feet per Spool	Spools Per Pkg.
W30-6D	30	blue	1-1/2"	200	1
W30-6E	30	white	1-1/2"	200	1
W30-6F	30	yellow	1-1/2"	200	1
W30-6J	30	orange	1-1/2"	200	1

**Polyurethane-Nylon Insulated Wire for use with No. 01 Bit**

Part No.	AWG	Color	Spool Dia.	Feet per Spool	Spools Per Pkg.
W28-2A	28	green	1"	100	3
W28-2B	28	red	1"	100	3
W28-2C	28	clear	1"	100	3
W28-2D	28	blue	1"	100	3
W36-2B	36	red	1"	200	1

**Wire For Conventional Wire Wrapping**  
**Kynar Insulated Wire, Silver Plated, Solid Conductor,**  
**Easy Stripping, for use with No. 03 Bit**

Part No.	AWG	Color	Spool Dia.	Feet per Spool	Spools Per Pkg.
W30-5A	30	green	1"	75	1
W30-5B	30	red	1"	75	1
W30-5E	30	white	1"	75	1
W30-5F	30	yellow	1"	75	1
W30-5AS	30	green	2"	300	1
W30-5BS	30	red	2"	300	1
W30-5ES	30	white	2"	300	1
W30-5FS	30	yellow	2"	300	1

**A wide variety of hand tools for use with a wide variety of Vectorbord® products**

Designed for installing Vector socket pins and terminals, see tables. Most are excellent tools for installing small quantities of Vector socket pins and terminals. For larger quantities, the P158 spring-impact installation tool is

recommended. Also recommended are Vector Die Points, Anvils, and Alignment blocks for insuring perpendicularity and board rigidity.

**P158 Spring Impact Insertion Tool**

Excellent tool for installing terminals, wrap posts, pins, and eyelets—provides consistent, adjustable insertion pressure. Spring activated tool features interchangeable die points and can be adapted to arbor or drill press. Dies, anvils and alignment blocks available separately.



**Wrapping Tools**

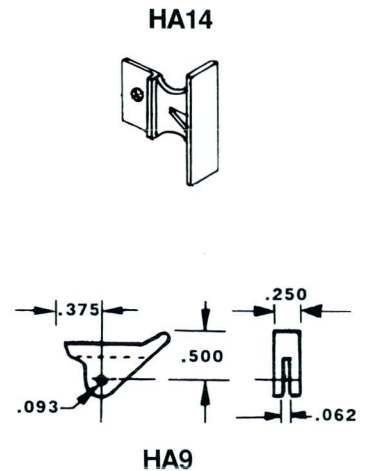
Part No.	Description	Replacement Wire
P160-1B	Manual unwrap tool, bit included	
P160-2B	Manual wrap tool, bit included	
P160-9A	Combination manual wrap/unwrap tool, bits included	
P180-1	Manual Slit-N-Wrap tool with #28 ga. wire Poly-Nylon	W28-2 series
P184-1	Manual Slit-N-Wrap tool with #28 ga. Tefzel wire	
P184-6	Manual Slit-N-Wrap tool with #30 ga. Tefzel wire	W30-6 series

**Anvils & Dies**

Terminal Reference	Description	Req'd Hole Dia.	Bd. Thk.	Die Part No.	Anvil Part No.	Die/Anvil Intended For:
K24, K41	Inbord Pin	.042	1/6	D7-2	—	Insertion
K26, K30	Inbord Pin	.042	1/16 3/32	D7-2	—	Insertion
K31, K38	Inbord Pin	.042	1/16 3/32	D7-2	—	Insertion
T15, 23	Eyelet	.062	1/16	D1	—	Staking
T19	Terminal	.062	1/16	D1	A6	Staking
T44 series	Sq. Pin	.042	1/16	D11	—	Insertion
T44 series	Sq. Pin	.042	1/16	D11	—	Staking
T49 series	Sq. Pin	.042	1/16	D8	D7-3	Insertion
T49 series	Sq. Pin	.042	1/16	D7	D8	Staking
T68 series	Sq. Pin	.042	1/16	D17	D7-3	Insertion
T68 series	Sq. Pin	.042	1/16	D17	—	Staking

**HA9, HA14 Ejector Handles**

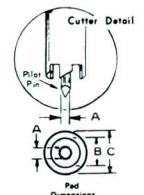
Ejector Handles available in two versions: corner mounting and front mounting. Corner mount handles are designed for Vectorbord prototyping boards with cut corners and support up to 40 lbs. extraction force. Front mounting handles provide flat, white nylon surface—can be labeled with markers or hot stamped for identification. Mounting hardware included.



Part No.	Package
HA9/4	4
HA9/C	100
HA9/M	1000
HA14	4

**P116, P138 Pad Cutters**

Vector Pad Cutters provide an effective method for creating isolated solder pads around holes in copper clad boards. Pilot pin enters hole and rotates, creating a clearance area around the solder pad. Available for holes with 0.055", 0.042" and diameters. Also available without handles for use in manual or power drills.



Part No.	Shank Handle	A	B	C	Shank	Use With Vectorbord®
P116C	Yes	.055	.188	.250	.250	Pattern F, G, H .062"
P138A	Yes	.040	.086	.125	.125	Pattern P .042" holes
P138C	No	.040	.086	.125	.125	

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42G24WE	1	3690-14	87	4617-6-14	78	5260252	61
45P80-1	4	3690-16	87	4617	33	5260256	60
59P44-032	1	3690-16	91	4617C5LF	34	5260257	60
64P44	1	3690-18	91	4618-5	35	5260258	60
64P44EP	1	3690-20	91	4618-7	36	5260259	60
64P44WE	1	3690-22	87	4618C5LF	35	5260263	60
64P44XXXP	1	3690-26	87	5085-4	36	5260264	61
84P44WE	1	3690-26-1	86	5085-5	37	5260266	61
85F24EP	1	3690-27	90	5085-7	37	5260267	61
85F42WEC1	1	3690-28	90	5085C5LF	37	5260289	61
85G24EP	1	3690-30	87	5086-7	38	5260291	61
85G24WE	1	3690-31	87	8001	2	5260293	60
85G42EP	1	3690	87	8002	3	5260294	61
85G42WE	1	3719-1	13	8003	3	5260296	60
85H48WE	1	3719-4	14	8004	3	5260299	61
85H85WE	1	3719-5	13	8006	5	5260308	61
106P106-1	5	3719-6	13	8007	3	5260309	61
169P44	1	3795-1	7	8008	4	5260311	61
169P44C1	1	3795-1	42	8009	2	5260312	61
169P44C2	1	3795	7	8010	2	5260467	61
169P44EP	1	3795	42	8011	4	5260468	61
169P44WE	1	3797-2	6	8012	5	5260469	61
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169P59C1	1	4112-5	7	8803-18-1A	85	5260475	61
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169P79WE	1	4493	14	5210218	62	5700202	62
169P84	1	4494	10	5250236-84	77	5700202	77
169P84C1	1	4607	42	5250237-21	77	5700209	62
169P84EP	1	4608-1	42	5250237-42	77	79900004	95
169P84WE	1	4608-4-1	85	5250237-63	77	84004006	62
169P84WEC1	1	4608	41	5250237-84	77	880000106	62
169P99	1	4609-1	38	5250238-21	77	A6	102
170H48-032	1	4609	38	5250238-42	77	AC160-84-1	62
170H48WE	1	4610-1	12,39	5250238-63	77	AC220-84-1	62
170H85WE	1	4610-2	12,39	5250238-84	77	AC280-84-1	62
175F99WE	1	4610-3	12,39	5250268-21	62	AC340-84-1	62
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3662A6	8	4613-2	31	5250361-63	77	BR27D	70
3673	15	4613-3	32	5260204	61	C160A6U5N	55
3677-2	9	4613-5	32	5260212	61	C160A6U10N	55
3677-6	4	4613-7	32	5260231	60	C316BAA42	54
3677	10	4613-8	30	5260232	60	C316EAA28	54
3682-2	9	4613	31	5260239	61	C616EAA28	55
3682-4	9	4613C5LF	32	5260240	61	C616EEA28	55
3682	11	4614-2	19	5260241	60	C616PAA28	56
3690-2	87	4614-3	19	5260242	60	C616PAA42	56
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CCA13M	65	CCM14P	65	DK400-14L	60	HFP87-1	74
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CCA13S	64	CCM14S	66	DP-6U	62	K24C/M	99
CCA14P	66	CCM15P	67	DP-9U	62	K26C/M	99
CCA14S	66	CCM15S	67	E160-3U-1	18	K30C/M	99
CCA17P	67	CCP160-6U1	56	E160-3U-2	18	K31C/M	99
CCA17S	67	CCP160-6U2	56	E160-3U-3	18	K32	96
CCA160-3U	54	CE55-95	74	E160-6U-1	21	K32-2/M	99
CCA160-6U	55	CE55-125	74	E160-6U-2	21	K32/C	99
CCA220-3U	54	CG1-160	59	E160-6U-3	22	K32/M	99
CCA220-6U	56	CG1-220	59	E220-6U-1	23	K36C/M	94
CCA220-9U	57	CG1-280U	59	E220-6U-3	24	K38C/M	99
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CCA340-6U	57	CG2-45S	69	E280-9U-3	28	LF322SC3T1	20
CCA340-9U	57	CG2-50P	69	EB220-3U	87	LF328SC3T1	20
CCA400-6U	57	CG2-65M	69	EFP164A66	70	LF328UC3T1	20
CCA400-9U	57	CG2-65P	69	EFP164A66E	70	LF616SC3T1	23
CCB160-3U1	54	CG2-65S	69	EFP164A66F	70	LF616UC3T1	23
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CCK13SMB16	64	CMA4A30	66	FP04-3U	61	P96C1	98
CCK14F	66	CMA13-16	65	FP04-6U	61	P116C	102
CCK14P	66	CMA14-16	66	FP04-9U	61	P133A	99
CCK15F	67	CMA14-20	66	FP08-3U	61	P138A	102
CCK17F	67	CMA14-30	66	FP08-6U	61	P138C	102
CCK17P	67	CRK3	74	FP08-9U	61	P149	99
CCK18F	67	D1	102	FP52-2	74	P149A	99
CCK19S	65	D7	102	FP52-4	74	P158	102
CCK100	68	D7-2	102	FP52-19	74	P158	102
CCK100S	68	D7-3	102	FP87-2	74	P160-1B	102
CCK135AS	64	D8	102	FT1U-1	58	P160-2B	102
CCK135S	65	D8	102	FT1U-2	58	P160-9A	102
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# Laminate Table of Properties

Board Type	Phenolic			Epoxy Paper			Epoxy Glass*			Epoxy Glass Composite*		
	Unclad	1 oz. Copper Clad 1 side	1 oz. Copper Clad 2 side	Unclad	2 oz. Copper Clad 1 side	2 oz. Copper Clad 2 side	Unclad	2 oz. Copper Clad 1 side	2 oz. Copper Clad 2 side	Unclad	2 oz. Copper Clad 1 side	2 oz. Copper Clad 2 side
Overall Board Thickness	.062 NOM	.062 NOM	.062 NOM	.062 NOM	.062 NOM	.062 NOM	.062 NOM	.062 NOM	.062 NOM	.062 NOM	.062 NOM	.062 NOM
Copper Clad Thickness Each Side (IN)		.0014 (1 oz.)	.0014 (1 oz.)		.0028 (2 oz.)	.0028 (2 oz.)		.0028 (2 oz.)	.0028 (2 oz.)		.0028 (2 oz.)	.0028 (2 oz.)
Max Electrical Temperature	221°F (105°C)	221°F (105°C)	221°F (105°C)	230°F (110°C)	230°F (110°C)	230°F (110°C)	266°F (130°C)	266°F (130°C)	266°F (130°C)	266°F (130°C)	266°F (130°C)	266°F (130°C)
NEMA Grade	FR-2	FR-2	FR-2				FR-4	FR-4	FR-4	CEM-1	CEM-1	CEM-1
UL-Flamability Classification				94HB	94HB	94HB	94V-0	94V-0	94V-0	94V-0	94V-0	94V-0
MIL-STD							MIL-P13949 Type GF	MIL-P-13949 Type GF	MIL-P-13949 Type GF			

\*On PTH boards, trace thickness is approximately 1.5 oz.

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Vector Electronic Company (Vector) warrants the products it offers for sale in this catalog for ninety (90) days from date of delivery to original consumer in the normal course of business up to the price actually paid by that customer, against manufacturing defects in material or workmanship in accordance with the following terms and conditions.

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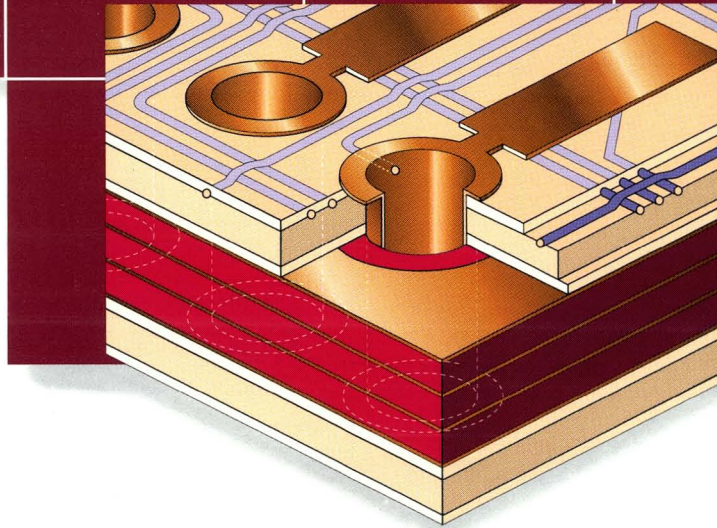
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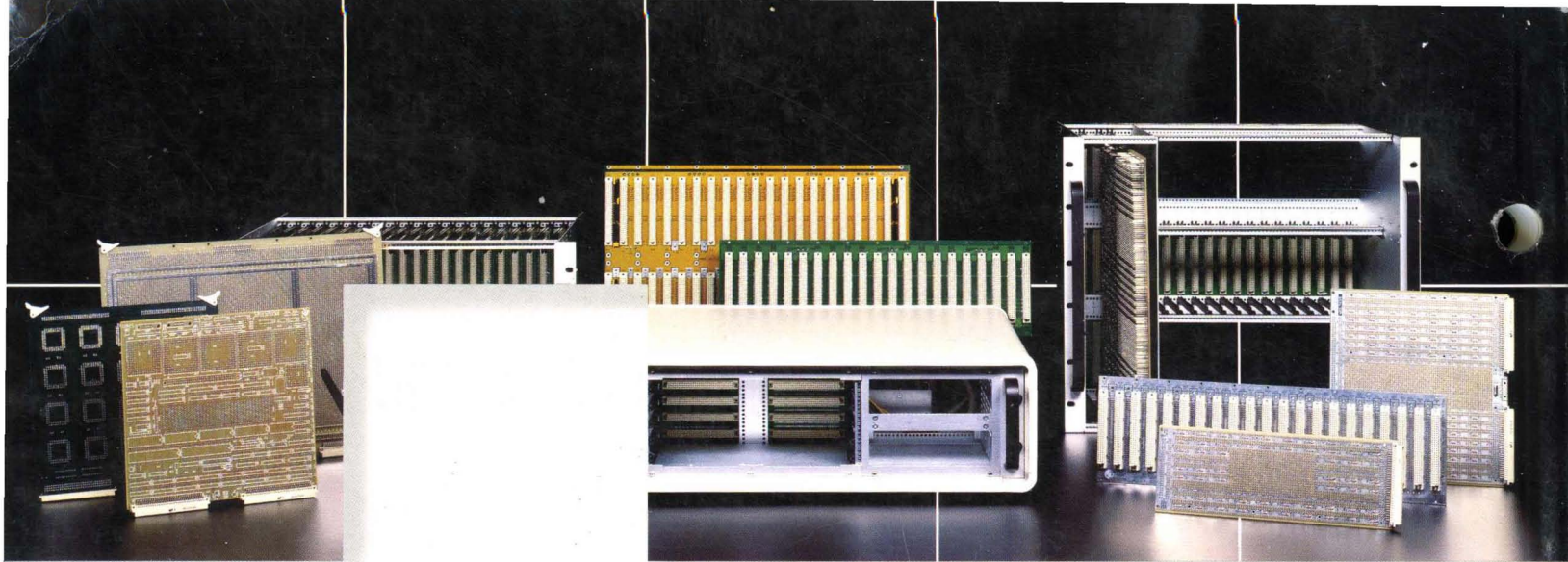
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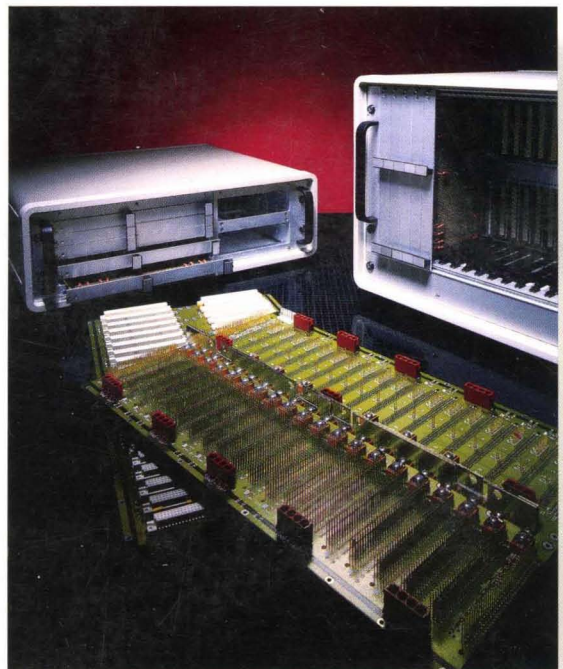
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