

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Keysight / Agilent E1465A* at our website: ***Click HERE***

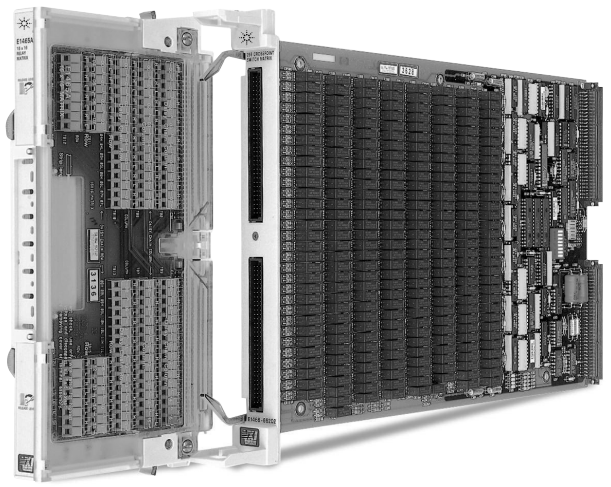
STEP Dionysos Job: 210%XXX5349-0001 5965-5591E Comp: 04-28-00 Time: 10:50 OP: NN

Agilent E1465A

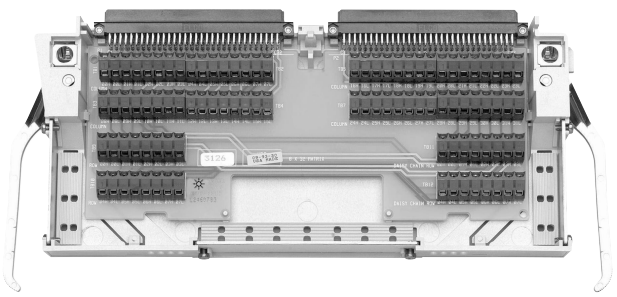
16x16 Relay Matrix Switch

Data Sheet

- **1-Slot, C-size, register based**
- **16x16 two-wire switching matrix**
- **Rows and columns expand to make larger matrixes**
- **1 A, 200-V signal switching**
- **Downloadable channel lists into onboard memory**
- **Includes QUIC easy-to-use terminal blocks**



Agilent E1465A



Description

The Agilent E1465A Relay Matrix Switch is a **C-size, 1-slot, register-based VXI module.** This 16x16 matrix switches each crosspoint both high and low. The E1465A features easy expansion to larger matrixes via a chaining cable that allows you to interconnect rows and columns on different modules. A full E1401B 13-slot mainframe can have up to 3072 two-wire crosspoints.

The E1465A module provides the best cost-per-crosspoint for large matrix applications. It shares the same switch card with the E1466A and E1467A; each product's unique terminal block determines the matrix configuration. Therefore, you can change matrix topology simply by plugging in the various terminal blocks. The terminal blocks can be obtained separately. Creating a matrix as large as 32x32 requires four matrix modules and interconnected rows and columns on the terminal blocks. All the E1465/66/67A matrix modules offer similar densities, with different row/column sizes and identical performance specifications. All specifications are identical for this family, except for crosstalk.

Refer to the Agilent Technologies Website for instrument driver availability and downloading instructions, as well as for recent product updates, if applicable.

Configuration

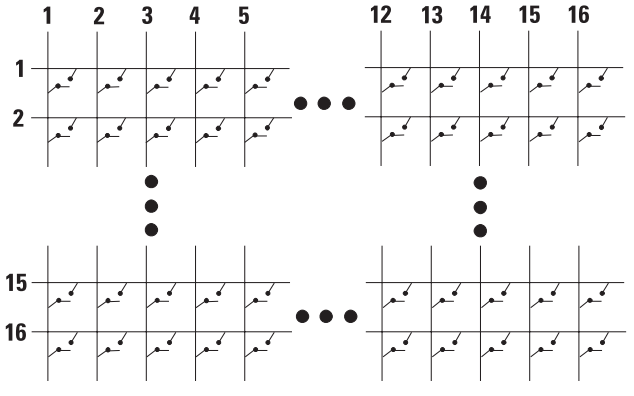
You can create a larger matrix by adding one or more matrix modules and interconnecting either the E1465A rows or columns on the terminal blocks with the E1466-80002 daisy-chain expansion cable. You can interconnect the E1465A rows with the rows of either the E1466A or E1467A. (Only the E1465A allows column expansion.) To create a 32x32 matrix with four E1465A modules requires 16 daisy-chain expansion cables connected together.

A preferable solution for a large matrix with easier cable access is to purchase the E1467A with an expansion terminal block (Option 201/211) and Z2220A series cables.

Agilent Technologies
Innovating the HP Way

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

The E1467A Option 201/211 Matrix Expansion Terminal Block provides an 8x32 matrix configuration that can easily be expanded. Compared to the daisy-chain cable (which requires each wire to be screwed into the screw terminal), the E1467A Opt 201/211 terminal block gives you quicker access and easier cable connections.



E1465A Each crosspoint switches Hi and Lo

Product Specifications

AC Performance

AC specifications apply with no more than one crosspoint closed per row or column. Specifications are for 16 x 16 matrix, for Z(load) = Z(source) = 50 Ω. Specifications are for worst crosspoint. Matrix expansion degrades crosstalk and bandwidth performance. Typical is defined as the worst crosspoint test result from one or two matrix modules. If guaranteed specifications are necessary, contact your local sales representative.

Crosstalk (dB) within a card (worst path):

	<10 kHz	<100 kHz	<1 MHz
Closed path to closed path (typical):	–78 dB	–57 dB	–41 dB
Open row to open row (typical):	–93 dB	–73 dB	–56 dB
Open row to open column (typical):	–84 dB	–63 dB	–47 dB
Open column to open column (typical):	–86 dB	–65 dB	–48 dB

Crosstalk (dB) module-to-module (represents 16 x 32 configuration):

Chaining cable used to connect modules (P/N E1466-80002).

	<10 kHz	<100 kHz	<1 MHz
Closed path to closed path (typical):	–78 dB	–58 dB	–43 dB
Open row to open row (typical):	–84 dB	–66 dB	–52 dB
Open row to open column (typical):	–84 dB	–63 dB	–48 dB
Open column to open column (typical):	–93 dB	–72 dB	–48 dB

Crosstalk (dB) Closed channel capacitance (<10 kHz):

Hi to Lo:	<270 pF
Hi to Ground:	<430 pF
Lo to Ground:	<440 pF

Input

Maximum voltage (any terminal to any other terminal or chassis):	
DC:	200 V
AC rms:	170 V
Peak:	238 V p-p
Maximum current (per channel common, non-inductive):	1 Adc; 1 Aac peak
Maximum power:	
Per channel:	30 W
Per module:	62.5 VA (resistive load)

DC

Maximum thermal offset per channel, differential Hi-Lo:	5 μV
Closed channel resistance (per channel):	
Initial:	<4.0 Ω (worst crosspoint) <1.8 Ω (best crosspoint)
End of life:	<10.0 Ω
Insulation resistance (between any two points):	
≤40 °C, ≤95% RH:	>10E8 Ω
≤40 °C, ≤65% RH:	n/a
≤25 °C, ≤40% RH:	>10E9 Ω
Minimum bandwidth (–3 dB, $Z_L = Z_X = 50$ Ω):	10 MHz

General

Time to close one channel: 8.9 ms *(Agilent V/743 and C-SCPI)*

Note: *When downloading a channel list to card memory, you can close all columns in one row in 8.9 ms.*

Power-down state:	Relay states are unchanged at power-down.
Power-up state:	Relays open at power-up
Minimum relay life:	10E7 operations
Screw terminal wire size:	18 to 26 AWG (1.2, 0.9, 0.75, 0.6, 0.5 mm)

STEP Dionysos Job: 210%XXX5350-0002 5965-5591E Comp: 04-28-00 Time: 10:51 OP: NN

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

General Specifications

VXI Characteristics

VXI device type:	Register based, A16, slave only
Size:	C
Slots:	1
Connectors:	P1
Shared memory:	None
VXI busses:	None
C-size compatibility:	n/a

Instrument Drivers

See the Agilent Technologies Website (http://www.agilent.com/find/inst_drivers) for driver availability and downloading.

Command module firmware:	Downloadable
Command module firmware rev:	A.08
I-SCPI Win 3.1:	Yes
I-SCPI Series 700:	Yes
C-SCPI LynxOS:	Yes
C-SCPI Series 700:	Yes
Panel Drivers:	Yes
VXI*plug&play* Win Framework:	Yes
VXI*plug&play* Win 95/NT Framework:	Yes
VXI*plug&play* HP-UX Framework:	No

Module Current

	I_{PM}	I_{DM}
+5 V:	0.1	0.01
+12 V:	0.18	0.01
–12 V:	0	0
+24 V:	0	0
–24 V:	0	0
–5.2 V:	0	0
–2 V	0	0

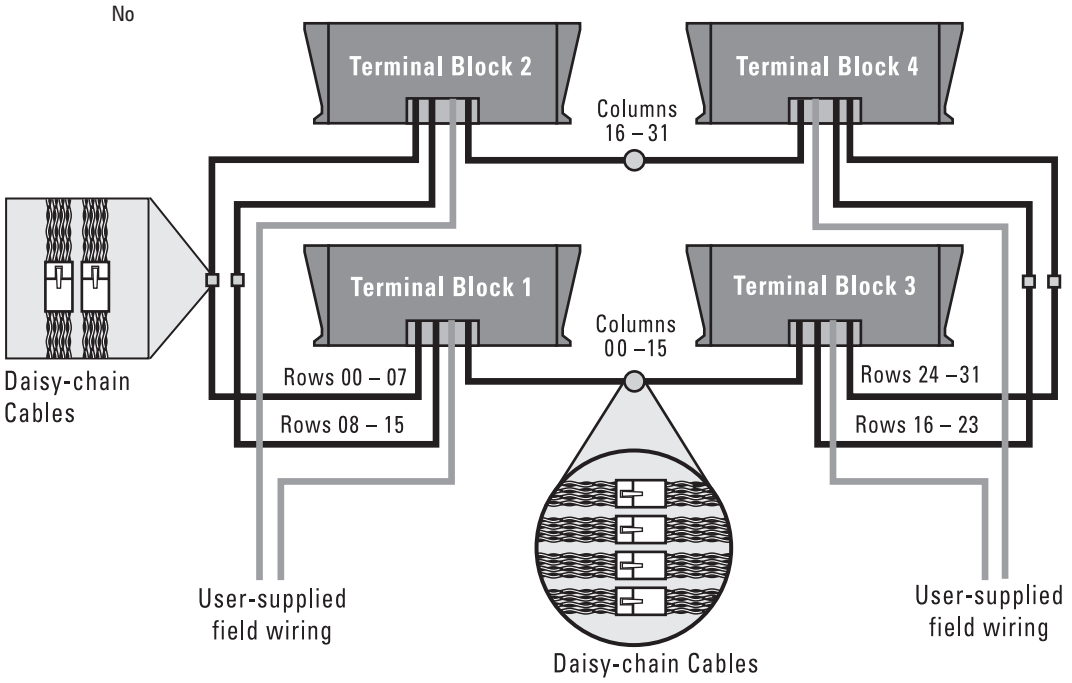
Cooling/Slot

Watts/slot:	5.00
ΔP mm H_2O:	0.08
Air Flow liter/s:	0.42

Ordering Information

Description	Product No.
16x16 Relay Matrix Module	E1465A
Service Manual	E1465A 0B3
3 yr. Retn. to Agilent to 1 yr. OnSite Warr.	E1465A W01
Extra Terminal Block, 16x16 Relay Matrix	E1465-80010
CBL Kit, Daisy Chain	E1466-80002

32 x 32 Matrix



Four E1465A matrix terminal blocks wired as 32 x 32 matrix

STEP Dionysos Job: 210%XXX5351-0003 5965-5591E Comp: 04-28-00 Time: 10:51 OP: NN

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Related Literature

2000 Test System and VXI Catalog CD-ROM,
Agilent Pub. No. 5980-0308E (detailed specifications for VXI products)

2000 Test System and VXI Catalog,
Agilent Pub. No. 5980-0307E (overview of VXI products)

1998 Test System and VXI Products Data Book,
Agilent Pub. No. 5966-2812E

Online

Internet access for Agilent product information, services and support
www.agilent.com/find/tmdir

VXI product information
www.agilent.com/find/vxi

Defense Electronics Applications
www.agilent.com/find/defense_ATE

Agilent Technologies VXI Channel Partners
www.agilent.com/find/vxichanpart

Agilent Technologies' HP VEE Application Website
www.agilent.com/find/vee

Agilent Technologies Data Acquisition and Control Website
www.agilent.com/find/data_acq

Agilent Technologies Instrument Driver Downloads
www.agilent.com/find/inst_drivers

Agilent Technologies Electronics Manufacturing Test Solutions
www.agilent.com/go/manufacturing

Get assistance with all your test and measurement needs at
www.agilent.com/find/assist
or check your local phone book for the Agilent office near you.

Agilent Technologies' test and measurement service/support commitment

Agilent strives to maximize the value our test and measurement products give you, while minimizing your risk and service/support problems. We work to ensure that each product is realistically described in the literature, meets its stated performance and functionality, has a clearly stated global warranty, and is supported at least five years beyond its production life. Our extensive self-help tools include many online resources (www.agilent.com).

Experienced Agilent test engineers throughout the world offer practical recommendations for product evaluation and selection. After you purchase an Agilent product, they can provide no-charge assistance with operation verification and basic measurement setups for advertised capabilities. To enhance the features, performance, and flexibility of your test and measurement products—and to help you solve application challenges—Agilent offers free or extra-cost product options and upgrades, and sell expert engineering, calibration, and other consulting services.

Phone and fax
United States:
Agilent Technologies
(tel) 1 800 452 4844

Canada:
Agilent Technologies Canada Inc.
(tel) 1 877 894 4414

Europe:
Agilent Technologies
Test & Measurement
European Marketing Organisation
(tel) (31 20) 547 2000

Japan:
Agilent Technologies Japan Ltd.
(tel) (81) 426 56 7832
(fax) (81) 426 56 7840

Latin America:
Agilent Technologies
Latin American Region Headquarters, U.S.A.
(tel) (305) 267 4245
(fax) (305) 267 4286

Australia/New Zealand:
Agilent Technologies Australia Pty Ltd.
(tel) 1 800 629 485 (Australia)
(fax) (61 3) 9272 0749
(tel) 0 800 738 378 (New Zealand)
(fax) (64 4) 802 6881

Asia Pacific:
Agilent Technologies, Hong Kong
(tel) (852) 3197-7777
(fax) (852) 2506-9284

Data Subject to Change
© Agilent Technologies 2000
Printed in the U.S.A. 04/2000
Publication No.: 5965-5591E

Agilent Technologies
Innovating the HP Way

STEP Dionysos Job: 210%XXX5352-0004 5965-5591E Comp: 04-28-00 Time: 10:51 OP: NN

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP