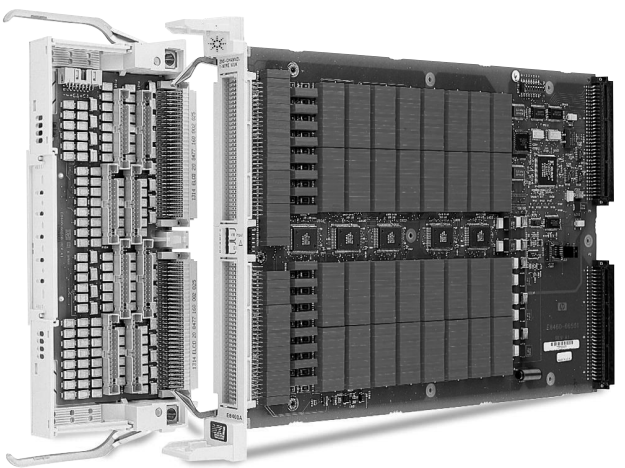
Agilent E8460A
256-Channel Reed Relay Multiplexer

Data Sheet

- **1-slot, C-size, register based**
- **High-density, low-cost multiplexer**
- **Fast scanning rate**
- **Flexible reconfiguration**
- **Contact protection for reliable operation**
- **Three different easy-to-use terminal blocks available as options**



Agilent E8460A with Opt. 014

Description

The Agilent E8460A High-Density Reed Relay Multiplexer is a **C-size, 1-slot, register-based VXI module**. This 256-channel multiplexer, using reed relay switches, offers a fast, reconfigurable, high point-count switching topology. It is designed for applications requiring fast scanning rates by the use of fast action reed relays. This single-slot multiplexer extends the choices of multiplexers available to the system engineer.

The E8460A can be programmed into individual topologies; some common examples are shown in the table below. Many other combinations of these topologies are supported (in addition to those shown in the table). two-wire, three-wire, and four-wire measurements can be configured.

Common Multiplexer Configurations

One 256 x 1	Four 64 x 1
One 128 x 2	Two 32 x 4
One 64 x 3	Sixteen 16 x 1
•	•
•	•
•	•

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

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Accessories

A terminal block does not come with the module. Three different terminal blocks are available as options: one for crimp-and-insert connectors, one for ribbon cable connectors, and the other for fault-tolerant protection of DUT inputs, where each channel has a positive temperature coefficient resistor that behaves like a resettable fuse and will increase impedance when excessive current is flowing in a channel.

One 2.5-in. analog bus cable (E1400-61605) is included to connect the analog busses of multiple slot-adjacent E8460A modules or a slot-adjacent E1411B multimeter module. The analog bus cable, easily installed at the faceplate of the component card, lets you connect the E8460A with the E1411B DMM.

Product Specifications

Input

Note: *These limits apply only if no connection is made to power mains.*

Maximum Input

	With Opt. 012 Terminal Card	With Opt. 014 or Opt. 015 Terminal Card	Analog Bus
Maximum DC voltage:	200 V	60 V	60 V
Max. ACrms voltage:	140 V	50 V*	30 V
Max. ACpeak voltage:	200 V	70.7 V	42 V
Max. current per channel:			
Switching:	300 mA	100 mA	n/a
Carry:	500 mA	100 mA	n/a

Maximum power per channel: 5 VA
Maximum power (resistive load):
Per channel: 5 VA
Per common output: 5 VA
Per module: 60 VA

*Rating reduced to 30 Vac-rms, 42 Vac-peak for exposed conductors.

DC Performance

Typical thermal offset (per channel): ± 50 μV
Closed channel resistance: <3 Ω with output protection resistor shorted, protection resistor adds 100 Ω

AC Performance

Bandwidth, 50 Ω Source/Load

Configuration	100 Ω Protection Resistor Shorted
256 x 1:	4.5 MHz
64 x 1:	12.0 MHz
16 x 1:	30.0 MHz

Closed Channel Capacitance

Configuration	To Chassis	To Open Channel
256 x 1:	1400 pF	70 pF
64 x 1:	460 pF	70 pF
16 x 1:	140 pF	70 pF

Open channel to either open channel or to chassis capacitance: 70 pF

Hi-to-Low Capacitance (2-Wire Mode)

Configuration	Capacitance
256 x 1:	400 pF
64 x 1:	230 pF
16 x 1:	80 pF

Crosstalk

Configuration	10 kHz	100 kHz	1 MHz	10 MHz
256 x 1 (channel to chassis):	–84 dB	–64 dB	–44 dB	–30 dB
64 x 1:	–84 dB	–64 dB	–44 dB	–27 dB
16 x 1:	–83 dB	–64 dB	–44 dB	–24 dB

General Characteristics

Relays: Reed relays
Open/close time: 0.5 ms max.
Minimum relay life:
No load: 500 M operations
Rated load: 10 M operations (Max. rated resistive load)
Power up/down state: All open

General Specifications

VXI Characteristics

VXI device type: Register based
Data transfer bus: A16, slave only
Size: C
Slots: 1
Connectors: P1/P2
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: No
I-SCPI Series 700: No
C-SCPI LynxOS: No
C-SCPI Series 700: No
Panel Drivers: No
VXI*plug&play* Win Framework: No
VXI*plug&play* Win 95/NT Framework: Yes
VXI*plug&play* HP-UX Framework: No

Module Current

	I_{PM} (A)	I_{DM} (A)
+5 V:	1.7	0.4
+12 V:	0	0
–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: 8.5
ΔP mm H_2O: 0.05
Air Flow liter/s: 0.7

Ordering Information

Description	Product No.
256-Channel Relay Multiplexer	E8460A*
Crimp and insert connector terminal block	E8460A 012**
Fault tolerant terminal block	E8460A 014***
Ribbon Cable Connector Terminal Block	E8460A 015***
Service Manual	E8460A 0B3
3 yr. retn. to Agilent to 1 yr. OnSite warr.	E8460A W01

*** Note: Standard unit does not include terminal block. One of the terminal block options must be ordered.**
**** Note: Crimp-and-Insert Contacts are not included. See the Interconnect and Wiring section for information on ordering Crimp-and-Insert Contacts.**
***** Ribbon cables and mating connector are not included. See ordering details below:**

Recommended 3M Mating Socket and Cable

Part Description	Qty Required per Terminal Card	3M Part Number
Socket (without strain relief)	8 sockets either with or without strain relief	3414-6600
Socket * (with strain relief)	8 sockets either with or without strain relief	3414-6606
Metal strain relief *(low profile)	8 *	3448-2034
Flat cable (34 conductor)	Length as needed	3365/34

* Required only for socket with strain relief.

Manufacturer Ordering Information

3M Electronic Products Division
6801 River Place Blvd.
Austin, TX 78726-9000
Phone 800-225-5373

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.

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Data Subject to Change

Printed in the U.S.A. 04/2000
Publication No.: 5965-8829E

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