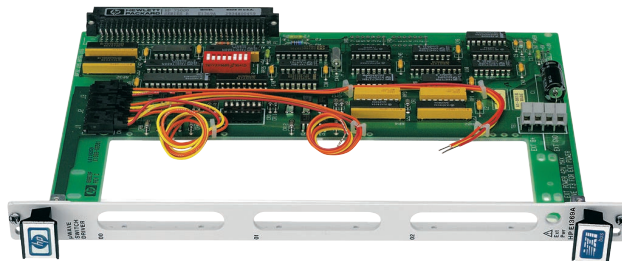

Microwave Switch Driver HP E1369A

Technical Specifications

- 1-Slot, B-size, register based
- Signal switching from dc to 26.5 GHz
- Drive three internal 50 Ω terminated switches
- Drive two additional external switches
- Select internal or use external energizing voltages
- Use equivalent switches of other manufacturers



HP E1369A

Description

The HP E1369A Microwave Switch Driver is a **B-size, 1-slot, register-based VXI module**. It provides room for you to install up to three HP 8762B/C, 8763B/C, and 8764B/C (3-port, 4-port, and 5-port) series of microwave switches to match your application needs up to 25.6 GHz. These switches must be ordered separately.

The HP E1369A can power and control a total of five switches, two of which must be mounted externally with ribbon cable and DIN connector. Additionally, you can select internal energizing voltages + 5 and + 12 Vdc, or supply your own external energizing voltage up to 45 Vdc if more power is needed.

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

Other Manufacturers

These manufacturers supply equivalent switches that can be installed in the HP E1369A:

K&L Microwave Inc.
Dynatech Microwave Tech Inc.
RLC Electronics Inc.

Switches can be used if they require less than 42 V, draw less than 1 A per switch, and are of the split-coil

(separate for each contact) design. Maximum current also depends on the mainframe or external supply capacity.

The following coaxial switch series will not function in the HP E1369A microwave switch module, because the switch coils are not split: HP 8761, 8766, 8767, 8768, and 8769.

Product Specifications

Microwave Switches (+ 5 V, 50 Ω) for mounting in the HP E1368/69A Microwave Switch Modules

Switch:	33311B or 8762B	33311C or 8762C	33312B or 8763B	33312C or 8763C	33313B or 8764B	33313C or 8764C
Frequency:	dc to 18 GHz	dc to 26.5 GHz	dc to 18 GHz	dc to 26.5 GHz	dc to 18 GHz	dc to 26.5 GHz
Ports:	3	3	4	4	5	5
Internal termination:	Terminated	Terminated	Terminated (one port)	Terminated (one port)	Unterminated	Unterminated
Insertion loss (dB):	<0.20 to 2 GHz <0.25 to 4 GHz <0.50 to 18 GHz	<0.20 to 2 GHz <0.50 to 18 GHz <1.25 to 26.5 GHz	<0.20 to 2 GHz <0.50 to 18 GHz	<0.20 to 2 GHz <0.50 to 18 GHz	<0.20 to 2 GHz <0.50 to 18 GHz <1.25 to 26.5 GHz	<0.20 to 2 GHz <0.50 to 18 GHz <1.25 to 26.5 GHz
SWR (into termination or through line):	<1.1 to 2 GHz <1.2 to 4 GHz <1.3 to 18 GHz	<1.15 to 2 GHz <1.25 to 12.4 GHz <1.40 to 18 GHz <1.8 to 26.5 GHz	<1.1 to 2 GHz <1.2 to 4 GHz <1.3 to 18 GHz	<1.15 to 2 GHz <1.25 to 12.4 GHz <1.40 to 18 GHz <1.8 to 26.5 GHz	Into Termination: n/a Through Line: same as HP 8763B	Into Termination: n/a Through Line: same as HP 8763C
Isolation (dB):	>90 to 18 GHz	>90 to 18 GHz >50 to 26.5 GHz	>90 to 18 GHz	>90 to 18 GHz >50 to 26.5 GHz	>90 to 18 GHz	>90 to 18 GHz >50 to 26.5 GHz
Life and repeatability (typical):	10 ⁶ cycles 0.03 dB	10 ⁶ cycles 0.03 dB	10 ⁶ cycles 0.03 dB	10 ⁶ cycles 0.03 dB	10 ⁶ cycles 0.03 dB	10 ⁶ cycles 0.03 dB
Power (peak power is nonswitching):	1 Watt average 100 Watts peak (+ 7 Vdc)	1 Watt average 100 Watts peak (+ 7 Vdc)	1 Watt average 100 Watts peak (+ 7 Vdc)	1 Watt average 100 Watts peak (+ 7 Vdc)	1 Watt average 100 Watts peak (+ 7 Vdc)	1 Watt average 100 Watts peak (+ 7 Vdc)
Switching speed:	30 ms	30 ms	30 ms	30 ms	30 ms	30 ms
RF connectors:	SMA (female)	3.5 mm (female)	SMA (female)	3.5 mm (female)	SMA (female)	3.5 mm (female)
Switching dwell time:	35 ms	35 ms	35 ms	35 ms	35 ms	35 ms
Driver output voltage (1 A max per switch):	5 V or 12 V	5 V or 12 V	5 V or 12 V	5 V or 12 V	5 V or 12 V	5 V or 12 V
Maximum external energizing voltage:	30 V	30 V	30 V	30 V	30 V	30 V

General Specifications

VXI Characteristics

VXI device type:	Register based, A16, slave only
Size:	B
Slots:	1
Connectors:	PI
Shared memory:	None
VXI busses:	None
C-size compatibility:	Requires HP E1403C

Instrument Drivers

See the HP Website (http://www.hp.com/go/inst_drivers) for driver availability and downloading.

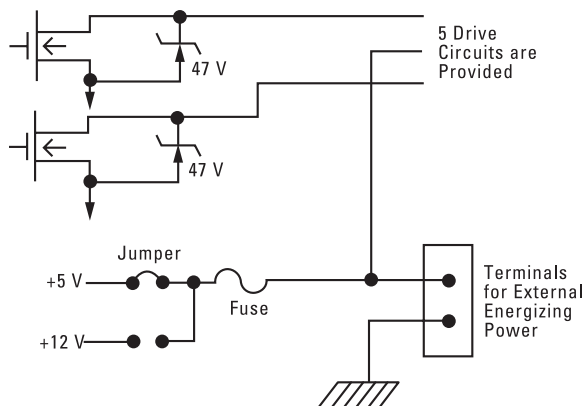
Command module firmware:	Downloadable
Command module firmware rev:	A.01
I-SCPI Win 3.1:	Yes
I-SCPI Series 700:	Yes
C-SCPI LynxOS:	Yes
C-SCPI Series 700:	Yes
HP Panel Drivers:	Yes
VXIplug&play Win Framework:	No
VXIplug&play Win 95/NT Framework:	Yes
VXIplug&play HP-UX Framework:	No

Module Current

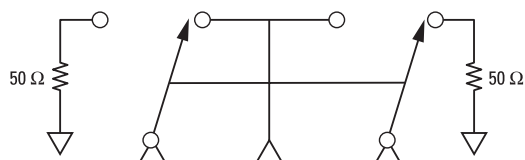
	I_{PM}	I_{DM}
+5 V:	0.1	0
+12 V:	0	0
-12 V:	0	0
+24 V:	0	0
-24 V:	0	0
-5.2 V:	0	0
-2 V:	0	0

Cooling/Slot

Watts/slot:	5.00
ΔP mm H ₂ O:	0.08
Air Flow liter/s:	0.50



HP E1368A/E1369A/1370A Drive Circuits



HP E1369A Switch Configurations

Ordering Information

Description	Product No.
Microwave Switch Driver	HP E1369A
3 Yr. Retn. to HP to 1 Yr. OnSite Warr.	HP E1369A W01
Coaxial SPDT Switch, dc-18 GHz	HP 8762B
5 V Solenoids Instead of 24 V Solenoids	HP 8762B 011
Commercial Cal. Certificate w/Test Data	HP 8762B UK6
Certificate of Calibration	HP 8762B UKS
Coaxial SPDT Switch, dc-26.5 GHz; 50 Ω	HP 8762C
5 V Solenoids Instead of 24 V Solenoids	HP 8762C 011
Commercial Cal. Certificate w/Test Data	HP 8762C UK6
Certificate of Calibration	HP 8762C UKS
Switch, Coaxial, Transfer Switch, 4 Port	HP 8763B
5 Volt Solenoids	HP 8763B 011
Commercial Cal. Certificate w/Test Data	HP 8763B UK6
Certificate of Calibration	HP 8763B UKS
Switch, Coaxial, Transfer Switch, 4 Port	HP 8763C
5 Volt Solenoids	HP 8763C 011
Commercial Cal. Certificate w/Test Data	HP 8763C UK6
Certificate of Calibration	HP 8763C UKS
Switch, Coaxial, Signal Reversal, 5 Port	HP 8764B
5 Volt Solenoids	HP 8764B 011
Commercial Cal. Certificate w/Test Data	HP 8764B UK6
Certificate of Calibration	HP 8764B UKS
Switch, Coaxial, Signal Reversal, 5 Port	HP 8764C
5 Volt Solenoids	HP 8764C 011
Commercial Cal. Certificate w/Test Data	HP 8764C UK6
Certificate of Calibration	HP 8764C UKS
Drive Cable, 40GHz Attn 14pin DIP 16in	HP 11764D

Related Literature

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

1999 Test System and VXI Products Catalog,
HP Pub. No. 5968-3698

Warranty

Standard Hewlett-Packard VXIbus hardware products are warranted against defects in materials and workmanship for a period of three years unless otherwise noted. HP software and firmware products that are designated by HP for use with a hardware product, when properly installed on that hardware product, are warranted not to fail to execute their programming instructions due to defects in materials and workmanship.

For a complete and detailed warranty statement please see the *HP Test System and VXI Products Data Book* or visit the HP Website at <http://www.hp.com/go/vxi>.

Website Directory

HP VXI Product Information
<http://www.hp.com/go/vxi>

HP VXI Channel Partners
<http://www.hp.com/go/vxichanpart>

HP VEE Application Website
<http://www.hp.com/go/hpvee>

Data Acquisition and Control Website
http://www.hp.com/go/data_acq

HP Instrument Driver Downloads
http://www.hp.com/go/inst_drivers

Electronics Manufacturing Test Solutions
<http://www.hp.com/go/manufacturing>

For more information about Hewlett-Packard test & measurement products, applications, services, and for a current sales office listing, visit our website, <http://www.hp.com/go/tmdir>. You can also contact one of the following centers and ask for a test & measurement sales representative.

United States:

Hewlett-Packard Company
Test and Measurement Call Center
P.O. Box 4026
Englewood, CO 80155-4026
1 800 452 4844

Canada:

Hewlett-Packard Canada Ltd.
5150 Spectrum Way
Mississauga, Ontario L4W 5G1
(905) 206 4725

Europe:

Hewlett-Packard
European Marketing Centre
P.O. Box 999
1180 AZ Amstelveen
The Netherlands
(31 20) 547 9900

Japan:

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