
Six 1x4, 75 Ohm RF Multiplexer HP E1474A

Technical Specifications

- Six 1x4 multiplexers
- Switch signals up to 1.3 GHz
- SMB male connectors for high performance
- Controls the HP E1475A /HP E1473A RF expanders
- Tree switching for high isolation, low VSWR



Description

The HP E1474A 75 Ohm RF Multiplexer is a **C-size, 1-slot, register-based VXI module**. It is the ideal choice for video and telecommunications applications. The HP E1474A is functionally identical to the HP E1472A except for output impedance.

The RF multiplexer can be used as six multiplexers or combined with others to form a larger tree-switched multiplexer or a limited stubless matrix. You can easily and inexpensively expand the HP E1474A via the HP E1475A 75 Ohm RF multiplexer expander or via the HP E1473A 50 Ohm RF multiplexer expander.

The HP E1474A can easily be programmed with SCPI commands to scan multiple channels, where each channel is switched to its common, one at a time. This module is arranged as six independent banks of channels (Bank 0 through Bank 5), each acting as a 1x4 1-wire multiplexer. Only one channel in each bank can be connected to its common at any time. The multiplexer relays are arranged in a tree-switched configuration, providing high isolation and low VSWR. Each channel consists of a nonlatching, armature relay.

Refer to the HP Website for instrument driver availability and downloading instructions.

Configuration

Each channel consists of a non-latching, armature relay. At power-on or reset, channels 00, 10, .. 50 are connected to COM 00, 10, .. 50, respectively, and all other channels are open (unterminated).

The RF multiplexer can be used as six multiplexers or combined with others to form a larger tree-switched multiplexer or a limited stubless matrix as shown in the accompanying diagram.

To expand the HP E1474A refer to the HP E1475A 75 Ohm RF multiplexer expander or the HP E1473A 50 Ohm RF multiplexer expander. The HP E1474A can control other external relays requiring 5 V, 12 V, or 24 V drive.

Cables and Connectors

Various 75 Ohm cables are available from HP for connecting to the SNB connectors on the front panel of the multiplexer. Adaptors and other connectors are also available. Connectors are also available from Johnson Components:

U.S.A. Tel.: 1-800-247-8256
outside U.S.A. Tel.:(507) 835-6222
Fax.:(507) 835-8356

Specifications

Input

Maximum voltage
(center or shield-to-center, shield or chassis):

42 V

Maximum current (per channel or common):

DC: 1 A

AC rms: 1 A

Maximum power (per channel or common):

DC: 24 W

AC: 24 VA

DC

Maximum thermal offset:

6 μ V

Closed channel resistance (typical):

<1 Ohm initial

Insulation resistance (between any two terminals):

>10E8 Ohm \leq 40 °C, \leq 65% RH

AC

Note: For AC performance, $Z_L=Z_S=Z_O, \leq 40^\circ\text{C}, \text{RH} \leq 95\%$ for C-size, $\text{RH} \leq 65\%$ for B-size

Characteristic impedance (Z_0): 75 Ohm

Insertion loss:

<10 MHz: <0.3 dB

<100 MHz: <0.4 dB

<500 MHz: <0.8 dB

<1.3 GHz: <1.0 dB

<3 GHz (typ): n/a

Crosstalk (channel-to-channel):

<10 MHz: <-85 dB

<100 MHz: <-75 dB

Crosstalk (channel-to-channel, one channel closed or channel-to-common) (terminated):

<200 MHz: n/a

<500 MHz: <-60 dB

<1.3 GHz: <-42 dB

<3 GHz (typ): n/a

VSWR:

<10 MHz: <1.05

<100 MHz: <1.15

<200 MHz: n/a

<500 MHz: <1.35

<1.3 GHz: <1.5

<3 GHz: n/a

Risetime: <300 ps

Signal delay: <3 ns

Capacitance:

Center-shield: n/a

Chassis-shield: n/a

General Characteristics

Relays: non-latching armature

Minimum relay life:

No load: 5x10E6 operations

Rated load: 10E5 operations

VXI Characteristics

VXI device type: Register-based, A16, slave only

Size: C

Slots: 1

Connectors: P1/2

Shared memory: None

VXI busses: None

C-size compatibility: n/a

Instrument Drivers

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

Command module firmware:	ROM
Command module firmware rev:	A.02
I-SCPI Win 3.1:	Yes
I-SCPI Series 700:	Yes
C-SCPI LynxOS:	Yes
C-SCPI Series 700:	Yes
HP VEE Drivers:	Yes
VXIplug&play Win Framework:	Yes
VXIplug&play Win95/NT Framework:	Yes
VXIplug&play HP-UX Framework:	No (not available at time of publication)

Module Current

	I_{PM}	I_{DM}
+5 V:	0.1	0.1
+12 V:	0.36	0.01
-12 V:	0	0
+24 V:	0	0
-24 V:	0	0
-5.2 V:	0	0
-2 V:	0	0

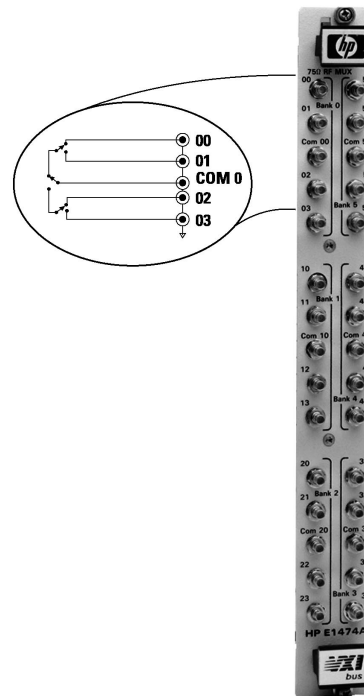
Cooling/Slot

Watts/slot:	6.00
ΔP mm H ₂ O:	0.10
Air Flow liter/s:	0.50

Ordering Information

Description	Product No.
75 OHM RF MULTIPLEXER	HP E1474A
Service manual	HP E1474A 0B3
3 yr. retrn. to HP to 1 yr. OnSite warr.	HP E1474A W01
COMPONENT LVL INFO PKT	HP E1472-90033

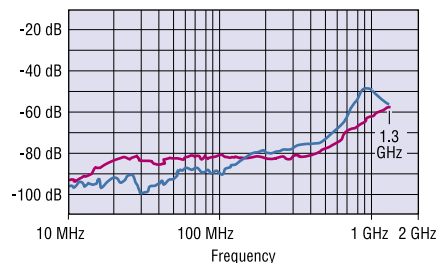
Data Subject to Change
 Copyright © January 1997
 Hewlett Packard Co.
 HP Publication No.: 5965-5616E



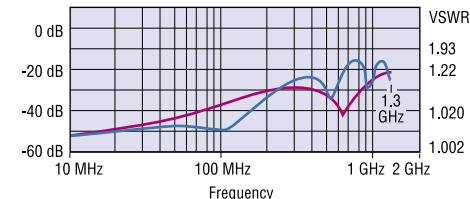
HP E1474A front panel detail

— HP E1367A
 — HP E1474A, E1475A

Typical Crosstalk (Channel-to-channel)



Typical Return Loss/VSWR



Typical Insertion Loss

