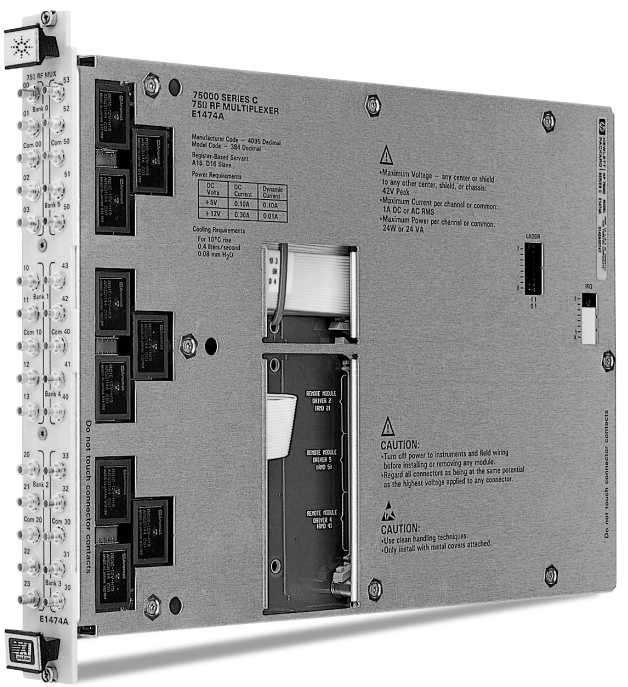
# Agilent E1474A
# Six 1x4, 75 Ω RF Multiplexer

Data Sheet

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




**Agilent E1474A**

## Description

The Agilent E1474A 75 Ω RF Multiplexer is a **C-size, 1-slot, register-based VXI module.** It is the ideal choice for video and telecommunications applications. The E1474A is functionally identical to the 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 E1474A via the E1475A 75Ω RF multiplexer expander or via the E1473A 50Ω RF multiplexer expander.

The 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 one-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 non-latching armature relay.

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

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

## Cables and Connectors

Various 75 Ω cables are available from Agilent for connecting to the SNB connectors on the front panel of the multiplexer. Adapters 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

## Product 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 μV
**Closed channel resistance (typical):** <1 Ω initial
**Insulation resistance (between any two terminals):** >10E8 Ω ≤40 °C, ≤65% RH

### AC

***Note: For AC performance, ZL=ZS=ZO, ≤40 °C, RH ≤95% for C-size, RH ≤65% for B-size***

**Characteristic impedance (Zo):** 75 Ω
**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
**Power up/down state:** All open
**Minimum relay life:**
**No load:** 5x10E6 operations
**Rated load:** 10E5 operations

## General Specifications

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

| | |
|---|---|
| **Command module firmware:** | Downloadable |
| **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 |
| **Panel Drivers:** | Yes |
| **VXI*plug&play* Win Framework:** | Yes |
| **VXI*plug&play* Win95/NT Framework:** | Yes |
| **VXI*plug&play* HP-UX Framework:** | No |

## 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 |
| **$\Delta$P mm $H_2O$:** | 0.10 |
| **Air Flow liter/s:** | 0.50 |

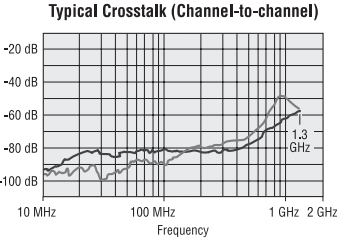
## Ordering Information

| Description | Product No. |
|---|---|
| Six 1x4 75 Ω RF Multiplexer | E1474A |
| Service Manual | E1474A 0B3 |
| 3 yr. Retn. to Agilent to 1 yr. OnSite Warr. | E1474A W01 |
| Component Lvl Info Pkt | E1472-90033 |

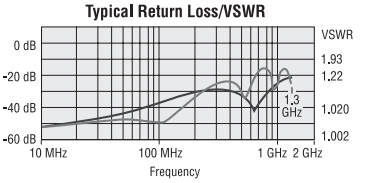
**Agilent E1474A front panel detail**

E1367A
E1474A, E1475A

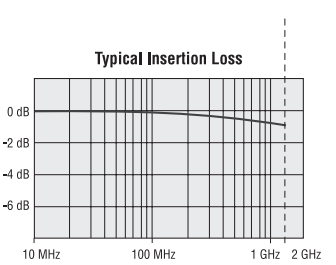
**Typical Crosstalk (Channel-to-channel)**




**Typical Return Loss/VSWR**




**Typical Insertion Loss**



## 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**
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Data Subject to Change

Printed in the U.S.A. 04/2000
Publication No.: 5965-9666E

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