

# Operating and Service Manual

**Agilent Technologies**  
**11694A**  
**50 - 75 Ohm Adapter**



**Manufacturing Part Number: 11694-90003**

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11694-90003

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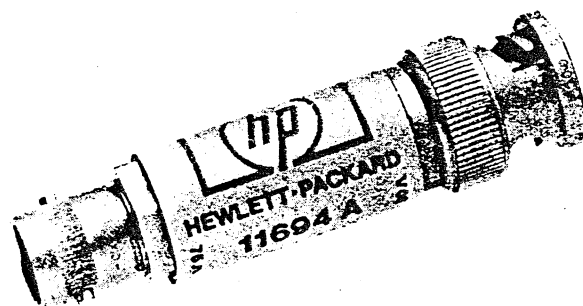
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# 50-75Ω ADAPTER

11694A



## 1. GENERAL INFORMATION

2. The Hewlett-Packard Model 11694A 50-75 $\Omega$  matching transformer is an accessory that adapts 50-Ohm impedances to 75-Ohm impedances. This manual explains how to use the transformer and briefly describes tests that can be used to verify the transformer specifications.

3. On the rear cover of this manual, below the manual part number, is a "Microfiche" part number. This number may be used to order a 4- x 6-inch microfilm transparency of the manual.

## 4. Specifications

5. The matching transformer specifications are listed in Table 1. These specifications are the performance standards or limits against which the transformer may be tested.

Table 1. Specifications

Frequency Range:	3 to 500 MHz (usable to 1 GHz)
Insertion Loss:	0.6 dB (typ. 0.9 dB from 0.5-1 GHz)
Maximum Input Power:	0.5 watts
VSWR:	1.3 (3 MHz to 10 MHz) 1.2 (10 MHz to 500 MHz) (typ. 1.2 from 0.5-1 GHz)
Connector 50 $\Omega$ end:	Type BNC male
Connector 75 $\Omega$ end:	Type BNC female
Dimensions:	L, 2.25 in. (57,2mm) D, 0.625 in. (15,9mm)
Weight:	1 oz (28 gm)
Shipping Weight:	9 oz (255 gm)

## 6. Description

7. The matching transformer adapts a 50-Ohm coaxial line to a 75-Ohm line. Impedance change is accomplished by transformer coupling. The primary winding of the transformer is 50 Ohms impedance and the secondary winding is 75 Ohms. (See Figure 1.)

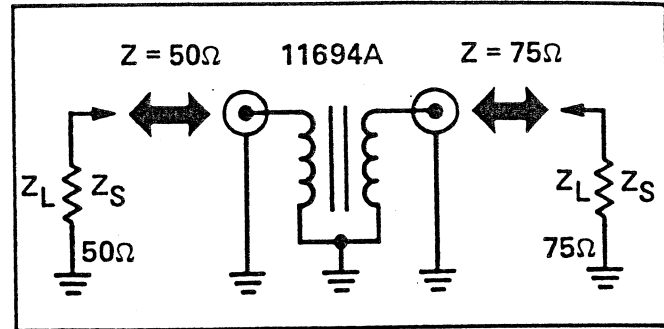


Figure 1. Model 11694A Schematic

## 8. INSTALLATION

### CAUTION

Do not exceed maximum input power of 0.5 watts or damage to the transformer windings may occur.

## 9. Initial Inspection

10. Inspect the shipping container for damage. If the shipping container or cushioning material is damaged, it should be kept until the contents of the shipment have been checked for completeness and the transformer has been checked mechanically and electrically. The contents of the shipment should be as shown on the front cover of this manual, and procedures for checking electrical performance are given under PERFORMANCE TESTS. If the contents are incomplete, if there is mechanical damage or defect, or if the transformer does not pass the electrical performance test, notify the nearest Hewlett-Packard office. If the shipping container is damaged, or the cushioning material shows signs of stress, notify the carrier as well as the Hewlett-Packard office. Keep the shipping materials for carrier's inspection. The HP office will arrange for repair or replacement without waiting for claim settlement.

## 11. Storage and Shipment

12. **Environment.** The matching transformer should be stored in a clean, dry environment. The following environmental limitations apply to both storage and shipment:

- Temperature:  $-40^{\circ}$  to  $+75^{\circ}\text{C}$
- Humidity:  $<95\%$  relative
- Altitude:  $<25,000$  feet

13. **Original Packaging.** Containers and materials identical to those used in factory packaging are available through Hewlett-Packard offices. If the transformer is being returned to Hewlett-Packard for servicing, attach a tag indicating the type of service required, return address, model number, and full serial number. Also, mark the container FRAGILE to assure careful handling. In any correspondence, refer to the transformer by model number and full serial number.

#### 14. OPERATION

#### 15. Environment

16. The operating environment should be within the following limitations:

- a. Temperature: 0°C to +55C
- b. Humidity: <95% relative
- c. Altitude: <25,000 feet

#### 17. Operating Instructions

**CAUTION**

Do not exceed maximum input power of 0.5 watts or damage to the transformer windings may occur.

18. The matching transformer is used to match a 50-Ohm coaxial input or output to a 75-Ohm coaxial input or output. Be sure to observe maximum power limits at the input of the matching transformer.

#### 19. PERFORMANCE TESTS

20. **VSWR.** To check that the matching transformer meets its VSWR specification listed in Table 1, use any test system that has a reflection coefficient ( $\rho$ ) accuracy better than 0.015. (Reflection coefficient  $\rho$  to a VSWR of 1.2:1 is 0.09 and 1.3:1 is 0.13.) Terminate the unused port with an accurate 50-Ohm or 75-Ohm termination as appropriate.

#### 21. ADJUSTMENTS

22. No electrical or mechanical adjustments are required.

#### 23. REPLACEABLE PARTS

24. No parts are replaceable on the Model 11694A matching transformer.

#### 25. REPAIR

26. No repair is recommended on the Model 11694A matching transformer.

Customer Order Number

For Agilent Internal Reference Only

Manufacturing Part Number



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