1. GENERAL INFORMATION

2. The HP Models 8447D, 8447E and 8447F are general purpose, wideband amplifiers. Each instrument consists of a power supply and one or two thin film, hybrid, integrated circuit amplifiers. The thin film amplifiers are hermetically sealed and feature low noise, low distortion, flat frequency response, and long term stability and reliability.

3. The HP Model 8447D Amplifier is a preamplifier that provides 26 dB of gain to signals from 100 kHz to 1.3 GHz. It can be used to increase the sensitivity of any lab, shop or field device operating within its frequency range.

4. The HP Model 8447E Amplifier is a power amplifier that provides 22 dB of gain to signals from 100 kHz to 1.3 GHz. It can be used to increase the output power of signal generators, sweepers and similar devices operating within its frequency range.

5. The HP Model 8447F Amplifier contains a preamplifier and a power amplifier — the same thin film amplifiers used in the HP 8447D and HP 8447E. The input and output ports of both amplifiers are available on the front panel; they can be used separately or cascaded to provide 48 dB of gain.

Table 1. Specifications

	8447D	8447E	8447F	
	PRE AMP	POWER AMP	PRE AMP	POWER AMP
Frequency Range	0.1 to 1300 MHz	0.1 to 1300 MHz	0.1 to 1300 MHz	0.1 to 1300 MHz
Typical 3 dB Bandwidth	.05 to 1400 MHz	.05 to 1400 MHz	.05 to 1400 MHz	.05 to 1400 MHz
Mean Gain ($20^{o} - 30^{o}$C)	26 dB Minimum	22 dB ±1.5 dB	26 dB Minimum	22 dB ±1.5 dB
Gain Flatness Across Full Frequency Range	±1.5 dB	±1.5 dB	±1.5 dB	±1.5 dB
Noise Figure	< 8.5 dB	< 11 dB (Typical)	< 8.5 dB	< 11 dB (Typical)
Output Power for 1 dB Gain Compression	>+7 dBm (Typical)	>+15 dBm	>+7 dBm (Typical)	>+15 dBm
Harmonic Distortion	−30 dB for 0 dBm output (Typical)	−30 dB for +10 dBm output	−30 dB for 0 dBm output (Typical)	−30 dB for +10 dBm output
Typical Output for < −60 dB Harmonic Distortion	−30 dBm	−20 dBm	−30 dBm	−20 dBm
VSWR, 1 to 1300 MHz	< 2.0 INPUT < 2.2 OUTPUT	< 2.2	< 2.0 INPUT < 2.2 OUTPUT	< 2.2
Impedance	50Ω	50Ω	50Ω	50Ω
Reverse Isolation	>40 dB	>40 dB	>40 dB	>40 dB
Maximum DC Voltage Input	±10 V	±10 V	±10 V	±10 V
Typical Risetime	400 psec	420 psec	400 psec	420 psec
Typical Group Delay	1.1 nsec*	1.5 nsec**	1.1 nsec*	1.5 nsec**

Table 1. Specifications (Cont'd)

	8447D PRE AMP	8447E POWER AMP	8447F	
			PRE AMP	POWER AMP
Net Weight;	3 lbs., 8 oz. (1,59 kg.)	3 lbs., 8 oz. (1,59 kg.)	3 lbs., 14 oz. (1,75 kg.)	
Option 001	3 lbs., 14 oz. (1,75 kg.)	—	—	—
Option 010	3 lbs., 10 oz. (1,64 kg.)	3 lbs., 10 oz. (1,64 kg.)	4 lbs., 1 oz. (1,84 kg.)	
Option 011	4 lbs., 1 oz. (1,84 kg.)	—	—	—
Dimensions	8-1/2 inches (216 mm) by 5-1/8 inches (130 mm) by 3-3/8 inches (85, 8 mm)			
Power Requirements	115 or 230 Vac ±10%, 48 to 440 Hz, 15 Watts, 27 VA max.			

* Variation over any 50 MHz band from 0.1 — 1300 MHz is typically < 0.15 nsec.

**Variation over any 50 MHz band from 0.1 — 1300 MHz is typically < 0.25 nsec.

6. OPTIONS

7. The HP Model 8447D is a single preamplifier with BNC connectors. However, to provide flexibility, three options are offered:

a. Option 001 — dual preamplifier, BNC connectors.

b. Option 010 — single preamplifier, Type N connectors.

c. Option 011 — dual preamplifier, Type N connectors.

8. The HP Model 8447E is a power amplifier with BNC connectors; one option is offered: Option 010 — Type N connectors.

9. The HP Model 8447F is a preamplifier and a power amplifier with BNC connectors; one option is offered: Option 010 — Type N connectors.

NOTE

All dual amplifier options with Type N connectors are furnished with a rigid coaxial cable (W6) that can be used to cascade the amplifiers with minimum loss.

10. INSTRUMENTS COVERED BY MANUAL

11. This manual fully documents the HP 8447D, HP 8447E and the HP 8447F. Any references in the manual apply to all three amplifiers unless otherwise noted.

12. Each amplifier has a ten digit serial number on the serial plate on the rear panel; the first five digits of the serial number are a prefix. The contents of this manual apply directly to instruments with the same serial number prefix as listed after SERIAL NUMBERS on the inside title page.

13. Revisions required to adapt the manual to other serial number prefixes are contained in a yellow "Manual Changes" insert supplied with the manual. For information about serial number prefixes not listed on the title page or in the insert, contact your nearest Hewlett-Packard office.

14. INITIAL INSPECTION

15. Mechanical Check

16. If damage to the shipping carton is evident, ask the carrier's agent to be present when the instrument is unpacked. Inspect the instrument for mechanical damage. Also check the cushioning material for signs of severe stress.