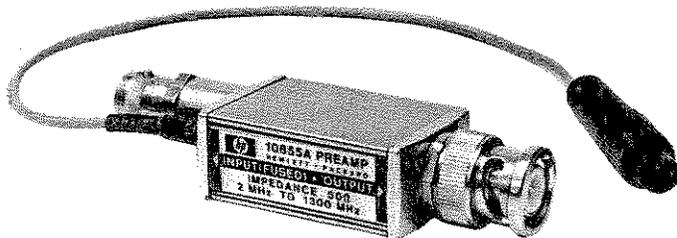


# PREAMP 10855A



 **HEWLETT  
PACKARD**

# PREAMP

## 10855A

### OPERATING AND SERVICE MANUAL

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5301 STEVENS CREEK BLVD., SANTA CLARA, CALIF. 95050

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Table 1. Specifications

**DESCRIPTION**

The Hewlett-Packard Model 10855A Preamplifier provides a minimum of 22 dB gain for low level signals in the range of 2 MHz to 1300 MHz. The preamp can be used with a variety of HP measuring instruments having probe power connectors or may be used with a separate power supply. It can be used with frequency counters, spectrum analyzers, network analyzers, sampling scopes, and other similar devices within its frequency range.

**DATE CODE**

The preamp's year and week of manufacture are stamped on the inside of the unit. Example 6-24 would be the 24th week of 1976. Production changes to the preamp are identified by date code. This manual applies to all date codes unless accompanied by a change sheet.

**INITIAL INSPECTION**

If damage to the shipping carton is evident, ask the carrier's agent to be present when the instrument is unpacked.

**Frequency range:** 2 MHz — 1300 MHz  
**3 dB Bandwidth:** 1 MHz — 1400 MHz, typical  
**Gain (minimum):** 22 dB; 24 dB typical  
**Gain flatness across full frequency range:**  $\pm 1$  dB  
**Noise figure:** <8.5 dB typical  
**Output power for 1 dB gain compression:** 0 dBm  
**Harmonic distortion:** -30 dB for -15 dBm output, typical  
**Output for <-60 dB harmonic distortion:** -25 dBm, typical

**VSWR:** Input and output, <2.2

**Impedance:** 50 $\Omega$  nominal

**Reverse isolation:** >45 dB

**Maximum Input:** 3.5V rms (+24 dBm), fuse protected

**GENERAL**

**Current required at +15V supply:** 40 mA (mating connector included)

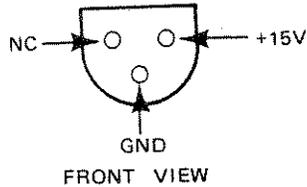
**Weight:** net, 0.03 kg (1 ounce); shipping, 0.1 kg (7 ounces)

**Dimensions:** 80 mm long (3-1/8"), 25 mm high (1"), 15 mm wide (9/16")

Inspect the instrument for mechanical damage. If damage is evident, notify the carrier and the nearest Hewlett-Packard field office immediately. The field office will arrange for replacement or repair of your instrument without delay for claim settlements against the carrier.

## POWER REQUIREMENTS

The 10855A requires +15 volts at 40 milliamps. Some HP instruments are equipped with a mating front panel connector. For other instruments, a mating connector (HP Part Number 5060-0467) is supplied. Wire the connector as follows:



**NOTE:** The GND pin is connected to the 10855A case, thus to the BNC connector's outer case. Be careful when connecting to floating power supplies.

If a separate power supply is desired, the HP 1122A Probe Power Supply is available.

## OPERATING INSTRUCTIONS

- a. Connect power lead to +15 volt receptacle.

### CAUTION

Do not apply more than +24 dBm to the input: the protective fuse will blow.

- b. Attach input and output cables.

## OPERATOR MAINTENANCE

The input fuse (.125 amp, 125V) is replaced by unscrewing the input BNC connector and installing a new fuse (HP Part Number 2110-0301). Use a BNC connector as a wrench to remove and tighten the fuse jack.

## REPAIR

*Cover Removal* is accomplished by applying pressure to cover edges. Note that the internal RF shield's crease contacts the IC when reinstalling the cover.

*Repair.* Figure 2 shows the schematic diagram and Table 2 lists the replaceable parts for the 10855A. Specifications in Table 1 should be checked using standard procedures. Figure 1 shows a test setup for checking flatness and VSWR.

C4 is selected for minimum VSWR and R1 is selected for the flatness specification.

Except for CR1, CR2 and R1, replacing parts requires microwave repair techniques. The small microchip capacitors should only be replaced by qualified microwave technicians with the proper equipment.

Figure 1A. Flatness Test Setup

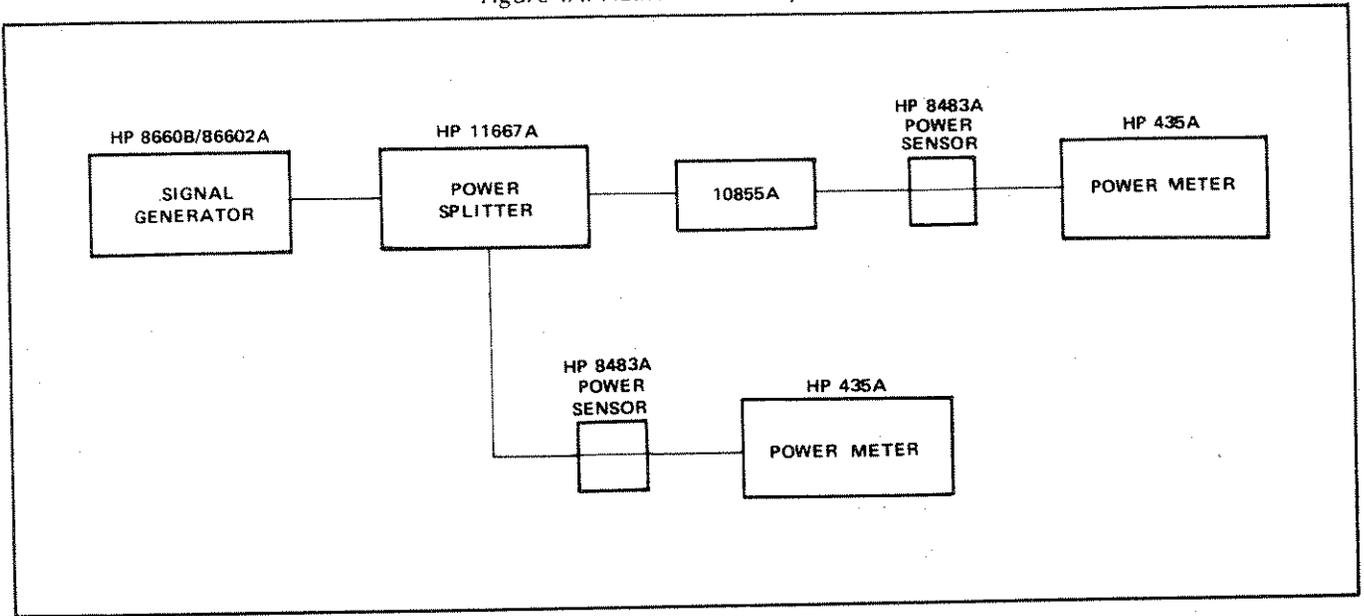


Figure 1B. VSWR Test Setup

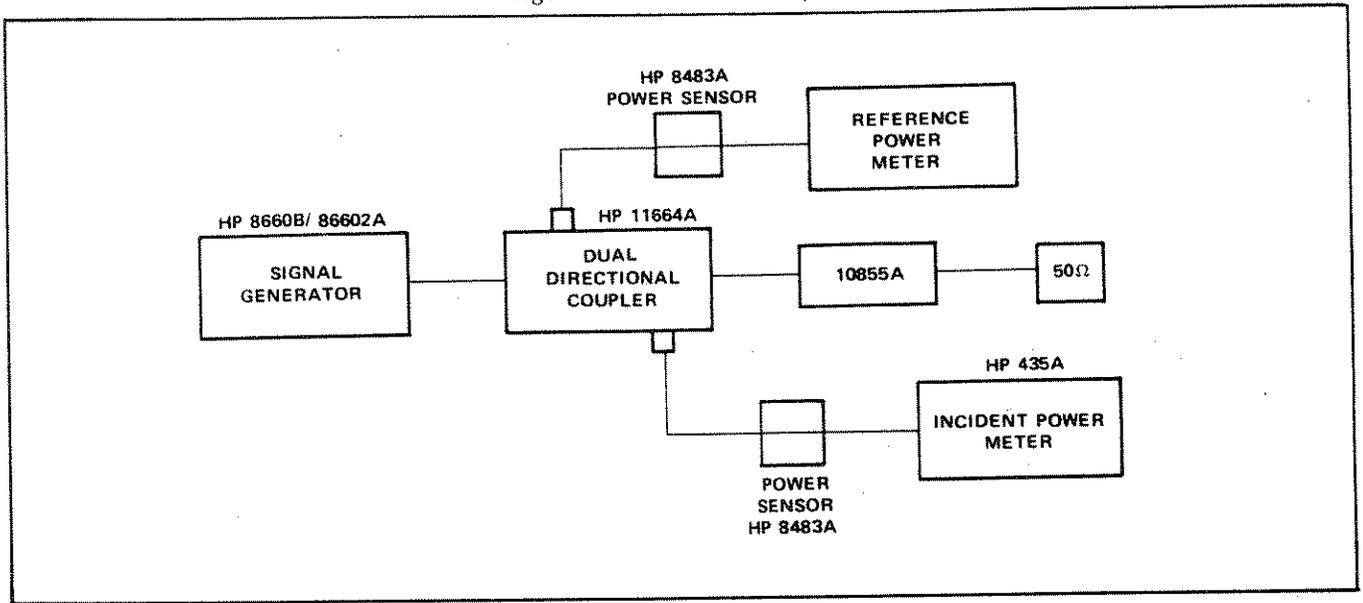


Table 2. 10855A Replaceable Parts

| Ref. Desig.           | HP Part No. | Qty. | Description  | Mfr Code | Mfr Part No.   |
|-----------------------|-------------|------|--|----------|----------------|
| C1                    | 0160-4241   | 2    | CAPACITOR-FXD .012 UF +-10% 50WVDC CER                                       | 26654    | 3BX050S123K(D) |
| C2                    | 0160-4241   |      | CAPACITOR-FXD .012 UF +-10% 50WVDC CER                                       | 26654    | 3BX050S123K(D) |
| C3                    | 0160-3878   | 1    | CAPACITOR-FXD 1000 PF +-20% 100WVDC CER                                      | 28480    | 0160-3878      |
| C4*                   | 0160-4445   | 1    | CAPACITOR-FXD 1.5PF +-10% 50WVDC CER   | 28480    | 0160-4445      |
| C4*                   | None        |      | May be omitted to set VSWR   |          |                |
| CR1                   | 1901-0050   | 2    | DIODE SWITCHING 80V 200MA 2NS DO-7   | 28480    | 1901-0050      |
| CR2                   | 1901-0050   |      | DIODE SWITCHING 80V 200MA 2NS DO-7   | 28480    | 1901-0050      |
| F1                    | 2110-0301   | 1    | FUSE .125A 125V FAST-BLO .281 x .093   | 75915    | 275.125        |
| J1                    | 05305-60205 | 1    | CONNECTOR-ASSY-BNC   | 28480    | 05305-60205    |
| J2                    | 1250-1233   | 1    | CONNECTOR-RF BNC M SGL HOLE FR   | 28480    | 1250-1233      |
| P1<br>(Part of<br>W1) | -----       | 1    | CONNECTOR: FEMALE, probe power<br>Order entire cable assy W1 for replacement |          |                |
| R1*                   | 0683-7505   | 1    | RESISTOR 75 OHM 5% .25W FC TC =-400/+500                                     | 01121    | CB7505         |
| R1*                   | 0683-8205   | 1    | RESISTOR 82 OHM 5% .25W FC TC =-400/+500                                     | 01121    | CB8205         |
| R1*                   | 0683-9105   | 1    | RESISTOR 91 OHM 5% .25W FC TC =-400+500                                      | 01121    | CB9105         |

Table 2. 10855A Replaceable Parts (Cont'd)

| Ref. Desig. | HP Part No. | Qty. | Description  | Mfr Code | Mfr Part No. |
|-------------|-------------|------|--|----------|--------------|
| U1          | 5088-7017   | 1    | 1.3 GHz AMPLIFIER  | 28480    | 5088-7017    |
| XF1         | 10855-20203 | 1    | HOLDER-FUSE  | 28480    | 10855-20203  |
|             | 05305-00010 | 1    | CLAMP-GROUNDING  | 28480    | 05305-00010  |
|             | 10855-00001 | 1    | STRAP-GROUND   | 28480    | 10855-00001  |
|             | 10855-20201 | 1    | CHASSIS  | 28480    | 10855-20201  |
|             | 10855-20202 | 1    | COVER  | 28480    | 10855-20202  |
| W1          | 10855-60100 | 1    | CABLE ASSEMBLY   | 28480    | 10855-60100  |
|             | 5060-0467   | 1    | CONNECTOR: MALE PROBE POWER<br>(Supplied as mating connector for P1) | 28480    | 5060-0467    |

\*Factory selected

Figure 2. 10855A Schematic Diagram

