

HEWLETT-PACKARD
MODELS 4960B/4961B PAIR IDENTIFIER SYSTEM
CABLE PAIR IDENTIFICATION

1. GENERAL

1.01 This section is a cover sheet for the Hewlett-Packard Models 4960B/4961B Pair Identifier System, Cable Pair Identification, Section 4960B/4961B. PTEL 2027 authorizes the use of this equipment in Pacific Company and Nevada Bell.

1.02 (Reserved for future use)

1.03 This system uses a field unit and an office unit to identify a cable pair, test it and display its condition in the field.

1.04 If corrections are required in the manufacturer's instruction, use Form E 3973-1PT as described in Section 000-010-901PT to process the correct information.

1.05 If equipment design and/or manufacturing problems should occur, refer to Section 010-700-011PT for procedures on how to file an Engineering Complaint for General Trade Products (GTPs).

1.06 When revised instructions reflect changes due to modification of equipment, retain the superseded information until equipment is modified.

Note: Equipment shall *not* be modified without the approval of the Equipment Maintenance Engineer.

2. TRAINING

2.01 Representatives of Hewlett-Packard may be contacted for demonstrations or training

on the use of the pair identification system. In addition, a videotape training package on the operation and maintenance of the 4960B/4961B is available.

3. MAINTENANCE

3.01 Except for replacement of those parts listed in Section 106-310-903PT (Tables 1 and 2), repairs should be made only by the manufacturer's representative or specifically authorized repair shops.

4. ORDERING PROCEDURES

4.01 Order the Hewlett-Packard 4960B and 4961B test sets from the Regional Procurement Organization (RPO) on Form P 505, specifying Master Agreement Number *ATT-120D*.

5. REPAIR/RETURN

5.01 The test sets are warranted for one year from the shipping date against defects in parts and workmanship. For replacement or repairs, ship the defective set as follows:

- *Northern California and Nevada* –
Hewlett-Packard
Customer Service Center
333 Logue Avenue
Mountain View, CA 94043
(415-968-9200)
- *Southern California* –
Hewlett-Packard
5400 West Rosecrans Boulevard
Los Angeles, CA 90009
(213-970-7500)

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Attachment:

Hewlett-Packard, Section 4960B/4961B, Issue A, November 1979

NOTICE

Not for use or disclosure outside the
Bell System except under written agreement

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PAIR IDENTIFICATION USING
THE HEWLETT-PACKARD
MODELS 4960B/4961B PAIR IDENTIFIER SYSTEM

| | CONTENTS | PAGE |
|----|--------------------------------------|------|
| 1. | GENERAL. | 1 |
| 2. | OFFICE UNIT HOOKUP. | 1 |
| 3. | OFFICE UNIT SELF CHECK. | 4 |
| 4. | OFFICE UNIT SHOE CHECK. | 4 |
| 5. | FIELD UNIT SELF CHECK. | 5 |
| 6. | FIELD UNIT SHOE CHECK. | 6 |
| 7. | FIELD UNIT SCAN OPERATION. | 6 |
| 8. | FIELD UNIT SELECT OPERATION. | 7 |

1. GENERAL

1.01 This section covers the use of the Hewlett-Packard Models 4960B/4961B Pair Identifier System. Refer to Section 106-310-903PT for description and maintenance of this test set.

1.02 The Pair Identifier System is composed of the 4960B Pair Identifier Office Unit and the 4961B Pair Identifier Field Unit.

2. OFFICE UNIT HOOKUP

2.01 The office unit has a detachable AC power cord. Connect the power cord to the receptacle on the rear panel of unit and to 117 Volts AC, 60 Hz power source. WARNING: Always connect to properly grounded AC outlet with 3-wire cord.

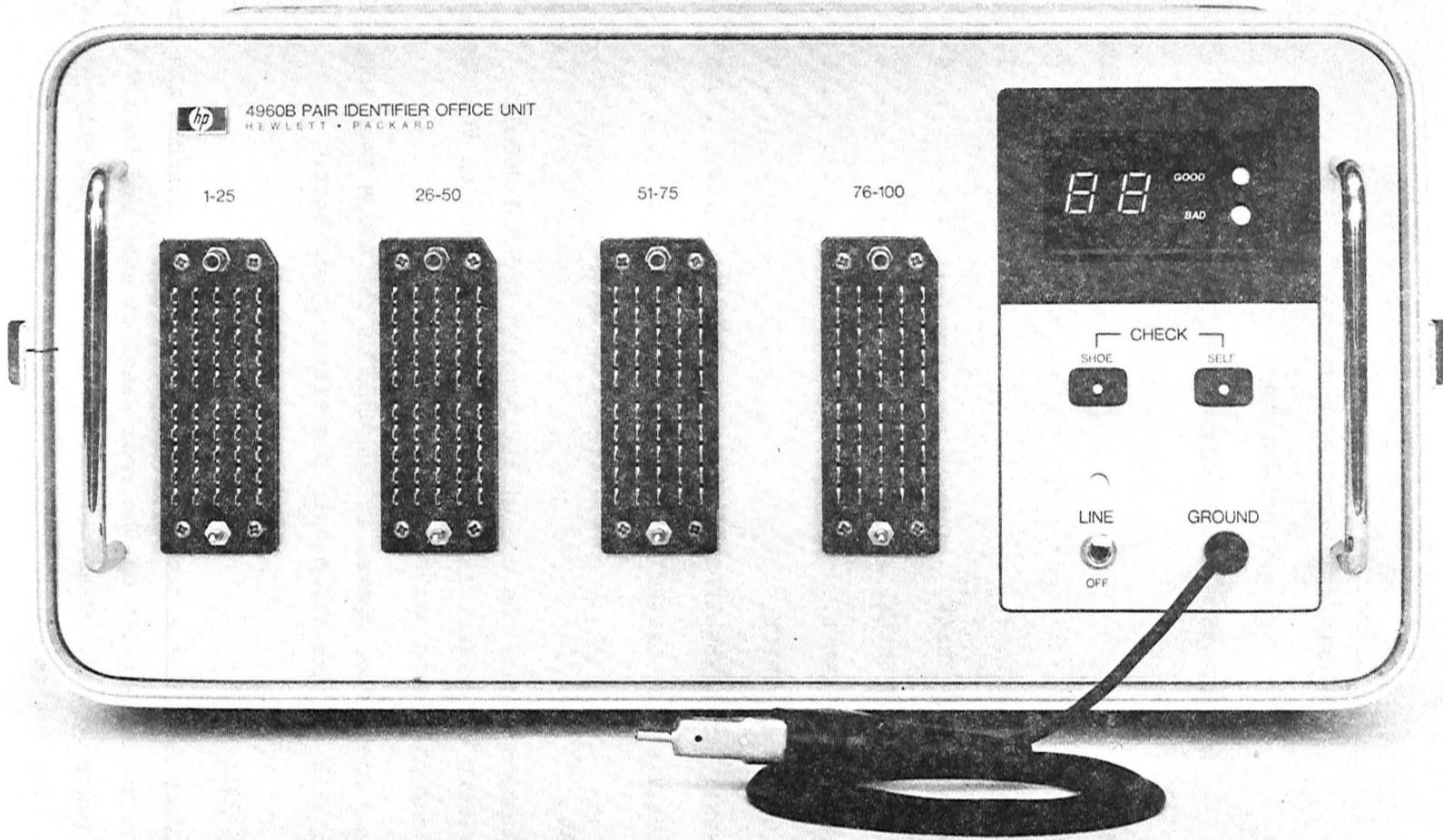


Figure 1. Hewlett-Packard Model 4960B Pair Identifier Office Unit

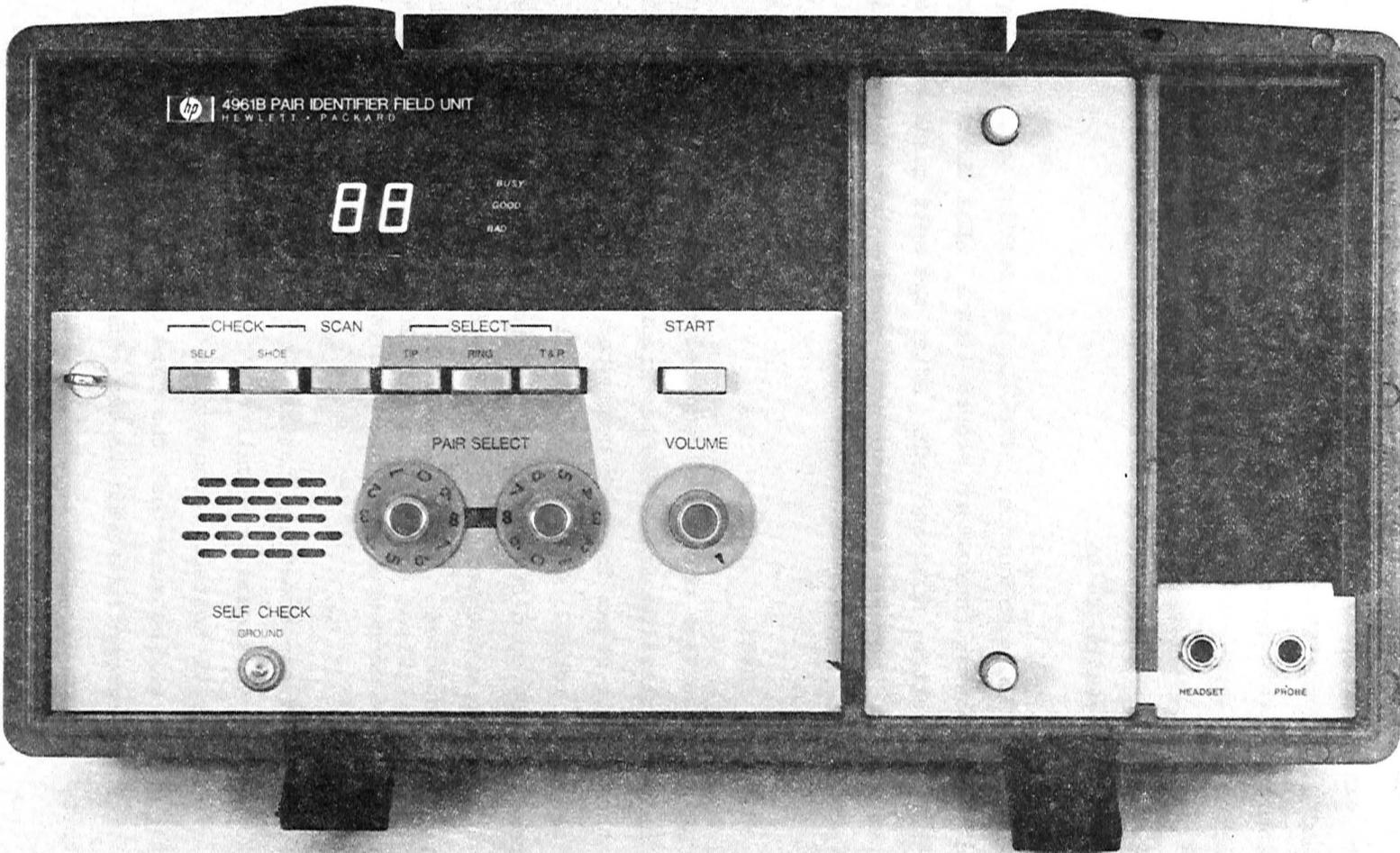


Figure 2. Hewlett-Packard Model 4961B Pair Identifier Field Unit

3. OFFICE UNIT SELF CHECK

3.01 The SELF CHECK mode makes an operational check of the office unit's internal circuitry and permits a visual check of all front panel lamps and displays. There should be no connections to the shoe cord connectors when performing SELF CHECK. Connect shoe cords to 4960B after completing a successful SELF CHECK.

3.02 Be certain the set is connected to a 117V, 60 Hz power source and switch the LINE switch to ON.

3.03 Press the SELF CHECK pushbutton. The digital readout will display 88, and the following indicators should light: SELF CHECK pushbutton, SHOE CHECK pushbutton, GOOD and BAD. After the self check test is completed, the GOOD or BAD indicator will remain lighted, indicating the outcome of the test.

4. OFFICE UNIT SHOE CHECK

4.01 Two 50-pair P-100A type cords are required to connect the office unit to the main distribution frame (MDF). Prior to connecting the P-100A cords, the 25-pair count for each connector should be labeled at both ends of the cords. Connect the PAIR 1-25 connector to the corresponding shoe cord connector on the front panel of the office unit. The mating connectors are keyed so that they will mate only when properly connected. Tighten the thumb screws on the P-100A connector finger tight. Likewise, connect the PAIR 26-50, PAIR 51-75 and PAIR 76-100 connectors to the corresponding shoe cord connectors.

4.02 Two 50-pair front tap shoes are required to connect the P-100A cords to the MDF verticals. Install the front tap shoes on the 100-pair count to be tested. Connect the P-100A cords to the front tap shoes, making sure that the cord connector pair count agrees with the connections made to the office unit shoe cord connectors.

- 4.03 Connect the 4-foot black ground cord to the MDF ground buss.
- 4.04 The SHOE CHECK mode tests the connections between the front tap shoes and MDF verticals for each of the 100 pairs. In order to pass this test, both sides of the pair must be making good contact through the tap shoe and MDF, and there must be at least 300 feet of shielded cable connected to the MDF.
- 4.05 Press the SHOE CHECK pushbutton. The SHOE CHECK pushbutton light should appear. After approximately eight seconds, the GOOD readout will light if there are at least 300 feet of shielded cable attached to the frame on all 100 pairs and all the shoe connections are good. The BAD readout and the pair number will be displayed for two seconds when a pair is scanned that does not meet these conditions.
5. FIELD UNIT SELF CHECK
 - 5.01 The SELF CHECK mode makes an operational check of the field unit's internal circuitry and test cables and permits a visual check of all lamps and displays.
 - 5.02 Connect the ground clip to the GROUND SELF CHECK terminal. Short the line clip tip and ring contacts together with a short piece of wire. Set PAIR SELECT switches to 88. Plug tone pickup probe into PROBE jack and adjust VOLUME CONTROL to mid-range. Press the SELF CHECK pushbutton.
 - 5.03 Press START pushbutton. All three status annunciators as well as a flashing horizontal bar should appear, followed by display of the number 88. The number will flash for three seconds, then remain solid for three seconds. Finally, the GOOD readout should appear.
 - 5.04 While the digital display is active, hold the tone pickup probe close to the display and verify an audible tone in the speaker.

6. FIELD UNIT SHOE CHECK (From Field Location)

6.01 The SHOE CHECK mode remotely tests the connections between the front tap shoes and MDF verticals for each of the 100 pairs. In order to pass this test, both sides of the pair must be making good contact through the tap shoe and MDF, and there must be at least 300 feet of shielded cable connected at the MDF.

6.02 Connect the ground clip to a solid ground or to the cable shield. Connect the line clip to any previously identified pair (the ring to the red side of the clip). Press the SHOE CHECK pushbutton.

6.03 Press the START pushbutton. The GOOD readout will be displayed if there are at least 300 feet of shielded cable attached to the frame on all 100 pairs and all the shoe connections are good. The BAD readout and the pair number will be displayed for two seconds when a pair is scanned that does not meet these conditions.

7. FIELD UNIT SCAN OPERATION

7.01 The SCAN mode is used to determine the number (1 through 100) of a cable pair. The field unit transmits a command signal to the office unit on the pair to be identified. The office unit scans the cable, locates the pair to be identified and transmits a pair identification signal to the field unit. The field unit displays the pair number on its digital display. At the same time, the pair is tested and the condition of the pair is displayed on the field unit status annunciators.

7.02 Connect the ground clip to a solid ground or to the cable shield. Connect the line clip to the pair to be identified (the ring to the red side of the clip). Press the SCAN pushbutton.

7.03 Press the START pushbutton. The digital display will flash a horizontal bar for a few seconds, then one of the following indications will appear:

- a. A pair number (the pair is identified correctly and passes all the tests).

- b. A pair number and the BUSY readout (the pair is identified, but is busy).
- c. A flashing pair number (the pair is identified correctly but is reversed).
- d. Two pair numbers displayed alternately and the BAD readout. (The two pairs are crossed or split. The numbers of both pairs are displayed).
- e. A pair number and the BAD readout (the pair is identified correctly, but does not pass the fault tests).
- f. A BAD readout only (identification is impossible because of cable faults or improper system hookup).

8. FIELD UNIT SELECT OPERATION

- 8.01 The SELECT mode is used to instruct the office unit to transmit an audible identification tone on either the tip, ring, or tip and ring of a selected pair. The office unit locates this pair and transmits the audible identification tone on the specified side of the selected pair. The selected pair is located with the tone pickup probe, which produces an audible tone in the field unit speaker or headset when the conductor insulation is touched with the probe tip.
- 8.02 Connect the ground clip to a solid ground or to the cable shield. Connect the line clip to any pair in the cable bundle. Press either SELECT TIP, SELECT RING, or SELECT T & R pushbutton. SELECT TIP and SELECT RING apply signal between tip or ring and ground. SELECT T & R applies signal between tip and ring. Set PAIR SELECT switches to the number of the pair to be selected.
- 8.03 Press the START pushbutton. The digital display will flash a horizontal bar for a few seconds, then the selected pair number will be displayed momentarily, followed by a slower flashing horizontal bar. Tone will remain on the pair for five minutes or until another function is selected.

8.04 The selected pair can be located with the tone pickup probe.
If a BUSY readout appears, tone is being transmitted in the
simplex mode so that no interference will result on this
busy line.