

# 3456A-13A SERVICE NOTE

SUPERSEDES  
3456A-13

## -hp- MODEL 3456A DIGITAL VOLTMETER

Serial Numbers Prior To: 2201A05331

### MODIFICATION FOR DIGITAL CIRCUITRY ENHANCEMENT

Instruments in the above range of serial numbers may be subject to a wide variety of digital operational characteristics caused by intermittent IC sockets. The modification described below should be performed on each of these instruments the first time characteristics are observed.

#### CHARACTERISTICS

Intermittent IC sockets may manifest themselves through one or more of the following ways:

1. Unit "locks up" and won't respond to front panel commands.
2. Unit shows only a single very bright digit in the front panel display area.
3. Unit intermittently changes range, function, mode, etc. to some random setting.
4. Unit becomes unstable by cycling rapidly and randomly among modes, ranges, functions, etc.
5. Unit "hangs up" HP-IB or sends false SRQ.

These symptoms will almost always be intermittent and are likely to disappear temporarily upon any type of service effort, such as re-seating P.C. boards, cleaning contacts, etc. The suggested modification procedure is described below.

#### MODIFICATION PROCEDURE

Refer to the 3456A Operating and Service Manual (-hp- P/N 03456-90004) for board locations, disassembly procedures and safety precautions.

W/PM,OF/WO

3/88-09/AC

Printed in U.S.A.



3456A-13A

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FOR MORE INFORMATION, CALL YOUR LOCAL HP SALES OR SERVICE OFFICE or East (201) 265-5000 • Midwest (312) 255-9800 • South (404) 955-1500 • West (213) 970-7500 or (415) 968-9200; OR WRITE, Hewlett-Packard, 1501 Page Mill Road, Palo Alto, California 94304. IN EUROPE, CALL YOUR LOCAL HP SALES OR SERVICE OFFICE OR WRITE, Hewlett-Packard S.A., 7, rue du Bois-du-Lan, P.O. Box CH-1217 MEYRIN 2 -Geneva, Switzerland. IN JAPAN, Yokogawa-Hewlett-Packard Ltd., 9-1, Takakura-cho, Hachioji-shi, Tokyo, Japan 192.

**CAUTION**

*The assemblies and components involved in the following steps are all static sensitive, and should only be handled at a static free work area, and in accordance with approved procedures.*

- 1. Remove the Outguard Controller (A4), Inguard Controller (A30), and HP-IB/Isolation Logic (A3) assemblies from the instrument.*
- 2. Remove ICs A4U15, A3U13, and A3U9 from their sockets and set aside, preferably on a piece of conductive foam.*
- 3. Remove and discard the sockets from which these ICs came. These will be the 40 pin red sockets. Do not remove any of the other IC sockets from the boards, as they are necessary for service.*
- 4. Return the ICs to their original locations and orientations on the boards, soldering them directly in place.*
- 5. Return the boards to their original positions in the instrument, reconnect all cables and reassemble.*

**VERIFICATION**

To verify proper operation, perform the digital self-tests as follows:

1. Press the "SELF TEST" button. The instrument should respond by alternately displaying all LEDs and annunciators, blanking out, and then repeating the cycle again. Press the "SELF TEST" button to resume normal operation.
2. Any display other than that mentioned indicates failure. A full description of this test and hints are given in the Service Group sections of the 3456A Operating and Service Manual.

The most complete way to verify the HP-IB/Isolation Logic board (A3) involves connecting a controller to the 3456A and testing various types of commands for proper operation.