# S E R V I C E   N O T E

SUPERSEDES: NONE

## E1652A 75000 Series 90 Modular Analyzer

**Serial Numbers:** 0000A00000 / 9999Z99999

**Duplicate Service Notes:** E1650A-05, E1652A-04

**Situation:**
Alternative Test Procedure for TOH and POH ports of the E1671/2/3/4A and E1681/2A modules used in these systems.

The following alternative method can be used to check the operation of the Path and Overhead ports on these modules. This ensures that the test can be performed where a 16520A Pattern Generator and 16510A Logic Analyzer are not available.

**Solution/Action:**
Use the following alternative procedure, where appropriate, as an alternative to the TOH and POH port tests in Module Users Manual.

**Test Accessory required:**
Using a 15 pin D-type male mating connector. Connect the pins 2, 4, 6, 8 together. Connect the pins 3, 5, 7, 9 together. A 1Kohm resistor and leads are also required to allow the two groups of pins to be connected to +5V via 1K ohm or to GND as required.

*Continued*

DATE: 16 May 1994

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:

# INFORMATION ONLY

| AUTHOR: | ENTITY: | ADDITIONAL INFORMATION: |
|---------|---------|--------------------------|
| DG | 1400 | |

Agilent Technologies

**TOH Modules E1671/2/3/4A TOH In/Out Port Tests**

1. Connect the TOH modules for Back to Back operation, e.g connect Clock and Data cables between the TOH Transmit and Receive ports. Set the TOH I/P=Section DCC and TOH O/P = Section DCC on module SETUP pages.

2. Apply +5V DC (available at pin 15) via a 1 Kohm resistor to the TOH Generator d1, d3, d5, d7 (pins 2, 4, 6, 8), connect d2, d4, d6, d8 (pins 3, 5, 7, 9) to GND. Check the corresponding TOH RECEIVER Out port pins to confirm that the appropriate TTL High/Low signals are received. Repeat the test with the GND and +5V (via 1Kohm) connection reversed.

3. Use the TOH Receiver STATUS page capture mode to check that the values of the d1, d2 and d3 bytes show the HEX value AA or 55 depending on the input connection to TOH In port. (Note re-capture using the receiver after changing input 5V/GND configuration).

4. Change the TOH generator SETUP selection to I/P = Line DCC. TOH Receiver O/P = Line DCC.

5. Repeat step 2 and use the TOH Receiver STATUS page capture mode to check the values of the d4-d7 bytes.

6. Change the TOH Generator and Receiver SETUP to I/P & O/P User Chan.

7. Repeat step 2 and use the TOH Receiver capture mode the values of the FI byte.

8. Check that the Frame and Clock signals are present for each of the following SETUP selections:

| TOHG | TOHR | pins | Frequency | Level |
|---------|---------|------|-----------|-------|
| Section | Section | 11 | 8 kHz | TTL |
| Section | Section | 13 | 24 kHz | TTL |
| User | User | 11 | 8 kHz | TTL |
| User | User | 13 | 8 kHz | TTL |
| Line | Line | 11 | 8 kHz | TTL |
| Line | Line | 13 | 724 kHz | TTL |

### E1681A/E1682A Modules POH In/Out Port Checks

1. Configure the system as follows:

   E1671/2A or E1673/4A Format to STS-3
   E1671/3A or Channel STS#1 to ON
   E1681A Channel to STS#1 POH In to Path OH
   E1682A POH Out to PATH OH

   TOH modules connected Back to Back by linking Clock and Data between modules.

2. Check that there is an 8 Hz signal at the Frame pins of E1681/2A and a 72 kHz signal at the Clock pins.

3. Apply a +5V signal via 1 K to the d1, d2, d4, d8 and d3, d5, d7, d9 of the E1681A POH port using a similar technique to that used for TOH ports.

4. Check that the corresponding Path O/P pin waveform changes (inverts) when the TTL level at the Path I/P is changed.

5. Use the E1682A STATUS page PATH capture feature to observe the Path byte values in Column 1 Frame 0 to check these changes when the Path I/P is changed and received POH is re-captured. (Note some bytes in this column are not changed from external port, e.g, B3, H4.)