

3779D-49A

S E R V I C E N O T E

SUPERSEDES:3779D-49

HP 3779D Primary Multiplex Analyzer

Serial Numbers: 0000U00000 / 999U99999

Duplicate Service Notes: 3779C-45 A

Improved GvL Measurement when high noise levels are present.

Situation:

Inconsistent inaccurate results may be obtained when using the HP 3779D to perform measurements on lines where excessive levels of spurious Out-of-Band transverse or common-mode noise are present - refer to Service Note 3779D-16 for more information on this.

This Service Note provides details of an alternative Gain v Level Measurement which will provide improved accuracy under these adverse conditions.

Explanation

The alternative measurement uses the 3779D Independent TX-RX facility to perform the equivalent of the Gain v Level measurement. This eliminates inaccuracies due to insufficient autorange settling time, as the complete measurement is performed in separate steps controlled by the operator.

DATE: 31 May 1994

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:

INFORMATION ONLY

AUTHOR:

ENTITY:

ADDITIONAL INFORMATION:

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Procedure

1. Connect the 3779D to the System under Test and setup System and Channel Parameters to match this system - see the HP 3779D Operating Manual (HP part number 03779-90007) for full setup detail.
2. Select Independent Tx-Rx on the 3779D.
3. Setup the 3779D Display as described on page 4-11 (A-A), 5-13 (A-D), or 5-22 (D-A) of the HP 3779D Operating Manual RX FILTER 2 (40Hz), RX FREQUENCY 1.01kHz, TX SIGNAL TONE 1 (Tone), TX FREQUENCY 1.01kHz and TX LEVEL -10dBm0 (reference).
4. Run the measurement and note the result. Subtract -10dBm0 from this result to get the Reference Gain. Call this A dB. For example, if the result is -10.5dBm0, A will be -0.5dB.
5. Set the Tx Signal Level to the first value required to be measured and run the measurement, noting the new result. Subtract the Tx Level from this result to get the measured gain. Call this B dB. For example, if the Tx Level is set to -40dBm0 and the result is 40.9Bm0 then B will 0.9dB.
6. Subtract A from B to get the first GvL value. Call this C dB. In the above example, C will be -0.4dB.
7. Repeat steps 5 and 6 for each value of Tx Signal Level to be measured.