

■ DISPLAYS

AMPLITUDE – REAL TIME
AMPLITUDE – MEMORY
DELAY*– REAL TIME
DELAY*– MEMORY
AMPLITUDE AND DELAY*– ANY COMBINATION OF ABOVE
WIDE-RANGE AMPLITUDE – REAL TIME
WIDE-RANGE AMPLITUDE – MEMORY
WIDE-RANGE AMPLITUDE – REAL TIME/MEMORY
X-Y* IMPAIRMENT (PHASE/AMPLITUDE)

■ DUAL AMPLITUDE/DELAY RANGES**■ +10 TO -70 DBM WIDE-RANGE AMPLITUDE DISPLAY****■ 4 KHZ AND 20 KHZ FREQUENCY SCALES****■ INDIVIDUAL MEMORY ENTER AND CLEAR BUTTONS****■ COMPLETELY FILLS MEMORY IN A SINGLE SWEEP****■ INSTANT AND COMPLETE ERASURE OF MEMORY****■ 256 BIT MEMORY RESOLUTION****■ BAR GRAPH X-Y IMPAIRMENT DISPLAY****■ FOUR SINGLE-WIDTH MODULES WIDE**

*When used with appropriate modules.

The Model 3980 CRT Display presents amplitude, delay and dynamic phase and amplitude jitter impairment displays in a four-unit wide module that plugs into the Model 3900 Communications Test System. These real time and memory (digital stored) CRT displays augment the standard X-Y plotter outputs of the Model 3900 Basic Unit to provide true flexibility in measurement presentation. All real time measurements displayed on the CRT screen are simultaneously displayed to full measurement accuracy by the digital readouts of the Basic Unit and other plug-in modules.

Normal, expanded and wide-range amplitude displays may be made directly using the Model 3980 CRT Display. The ± 10 dB normal range and the ± 4 dB expanded range allow excellent resolution during line conditioning and detailed channel response measurements. The 80 dB wide-range amplitude display provides a level versus frequency presentation when a wide dynamic range display is desired.

Delay measurements from the Model 3912 (USA) Delay or Model 3917 (CCITT) Delay modules may be displayed with or without the amplitude traces for detailed channel response presentations. An 8.0 millisecond normal range and a 2.0 millisecond expanded range are provided.

A flexible Basic Unit generator with single and continuous sweeps, variable sweep rates and front panel adjustable sweep limits increases the usefulness and convenience of the CRT presentation.

The X-Y impairment display accepts the phase and amplitude jitter signals from the Model 3913 Hits/Jitter module and provides a real time visual display for evaluating a facility's short term and transient behavior.

The Model 3980 is a four-unit wide module weighing approximately 6½ pounds. It may be located in any plug-in location including the Model 3910 Expander Unit, and can be easily inserted and extracted without the use of hand tools.

SPECIFICATIONS

DISPLAY MODES

Amplitude — real time
 Amplitude — memory
 Delay — real time
 Delay — memory
 Amplitude/Delay — any of above
 Wide-Range Amplitude — real time
 Wide-Range Amplitude — memory
 Wide-Range Amplitude — real time and memory
 X-Y Impairment (Phase/Amplitude)

Sweep Rate*

Wide-Range Amplitude —
 16 Hz (4 kHz range)
 77 Hz (20 kHz range)
 8 Hz per second to 1 kHz per second

MEMORY ENTER TIME

Complete trace storage in a single sweep

MEMORY CLEAR TIME

Instantaneous

X-Y IMPAIRMENT
 DISPLAY

Phase
 Amplitude

Range — 0° to $\pm 30^{\circ}$
 Range — 0% to $\pm 30\%$ amplitude modulation

AMPLITUDE/DELAY DISPLAY

Display Range Expanded — ± 4 dB amplitude
 +1.5 to -0.5 ms delay
 Normal — ± 10 dB amplitude
 +6.0 to -2.0 ms delay
 Accuracy $\pm 5\%$ of F.S.
 Resolution — Real Time Infinite
 Resolution — Memory Expanded — 0.03 dB amplitude; 8 μ s delay
 Normal — 0.08 dB amplitude
 31 μ s delay
 Accuracy $\pm 5\%$ of F.S.
 Number of Traces 4 maximum
 Trace Identification Amplitude — continuous
 Delay — dashed

GRATICULE SIZE

80 mm (X axis) x 70 mm (Y axis)

MODULE SIZE

4 single-width module spaces
 5.4 in. (13.7 cm) W x
 6.75 in. (17.2 cm) H x
 13.88 in. (35.3 cm) D

MODULE WEIGHT

6 lbs. 8 oz. (2.95 kg.)

OPTIONS

.01 — X-Y Vector Display**
 .02 — Deletes dashed delay trace identification

WIDE-RANGE AMPLITUDE DISPLAY

Display Range +10 to -70 dB
 Resolution — Real Time Infinite
 Resolution — Memory 0.31 dB

FREQUENCY SCALE

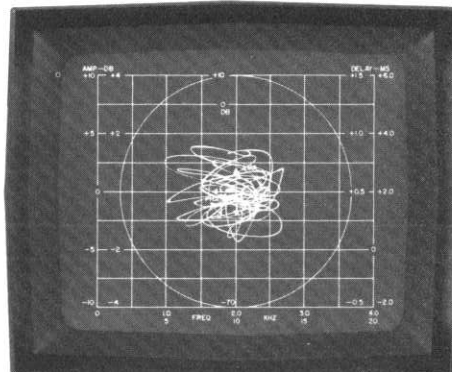
Scale Range* 40 Hz to 4 kHz
 40 Hz to 20 kHz
 Resolution — Real Time Infinite
 Resolution — Memory Amplitude/delay —
 32 Hz (4 kHz range);
 155 Hz (20 kHz range)

* Specification dependent on Basic Unit

** Licensed from Bradley Telcom, U.S. Patent No. 3,906,173

HLI reserves the right to make changes in specifications at any time without notice.

X-Y VECTOR DISPLAY (OPTION .01) —**
 Provides phase and amplitude jitter display in real time.



HEKIMIAN LABORATORIES, INC.
 PHONE (301) 840-1217 TELEX 89-8399

9298 GAITHER ROAD
 GAITHERSBURG, MARYLAND 20877 USA