

The Model 3916 Return Loss Module provides full return loss and singing point measurement capability in a single-width module that plugs into the Model 3900 Communications Test System. Designed to Bell System specifications, it allows ERL, SRL, SRL HI, sine wave return loss, and singing point measurements to be made by the Basic Unit. The module incorporates generators for all required test signals and the echo suppressor disable tone.

This module expands the 2-wire and 4-wire sine wave return loss measurements made by the Basic Unit to include echo return loss (ERL), low frequency singing return loss (SRL), high frequency singing return loss (SRL HI), and singing point margin. A phase change of 180° for singing point measurements is provided by the POLARITY switch. Return loss measurements are displayed directly in dB by the Basic Unit and the singing point margin in dB is obtained by subtracting the REL REF thumbwheel settings from SEND LEVEL thumbwheel settings in the Basic Unit.

Built-in generators provide the weighted transmit signals for the ERL, SRL, and SRL HI measurements and send them to the Basic Unit for send level control and line interfacing. Sine wave return loss measurements use the Basic Unit generator.

Echo suppressors on the circuit under test are disabled by a tone burst that is automatically activated when the module is turned on, or by pushing the ECHO SUPPRESS pushbutton at any time after the module is turned on.

The "Exclusive Measurement" interlock ensures that no conflicting modules are active during these measurements.

The Model 3916 is a single-width module weighing 14 oz. 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*

MEASUREMENT MODES

SRL HI
SRL
ERL
Sine wave return loss
Singing point margin

ALL RETURN LOSS MEASUREMENTS

Measurement Range 0.0 dB to +50.0 dB (2W)
-9.9 dB to +50.0 dB (4W)
Accuracy ± 0.5 dB (4W)
Standard Impedance 600 Ω , 900 Ω , $\pm 1\%$ in series with 2.16 μ F, $\pm 1\%$ or external standard (2W)

SINGING POINT MEASUREMENT

Net Gain/Loss Adjustable from +49.8 dB to -49.8 dB via SEND LEVEL and REL REF thumbwheel switches on the basic unit.

Polarity Changes phase of singing point gain/loss by 180°

ECHO SUPPRESSOR DISABLE

Provides nominal 1 second burst of 2150 Hz to disable any echo suppressors in test path. Automatically provides burst upon enabling of module. Can be activated at any time when module is ON by pressing ECHO SUPPRESS switch.

GENERATOR

Transmitted Signal Weighting

Send Level

Level Stability
Harmonic Distortion
Sine Wave Signal

MODULE INTERLOCKS

INDICATOR

MODULE SIZE

MODULE WEIGHT

OPTIONS

Designed to meet Bell PUB 41009 for ERL, SRL, SRL HI

Adjustable from 0.0 dBm to -39.9 dBm. Controlled by basic unit.

± 0.5 dB

At least 30 dB down

Uses basic unit generator

"Exclusive Measurement" interlock

Module ON

Single-width module

14 oz. (397 g.)

.04 Remote control

*All stated and unstated specifications are intended to comply with Bell System standards as contained in Bell System Technical Reference PUB 41009 dated May 1975

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

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