

LinkTest™ SINGLE



Tests Async (Full / Half Duplex), Sync, T1, Fractional T1, E1 & Fractional E1

Hand-held Portable T1/E1 Test Set

Interfaces - V.35, RS232, RS422/RS530, X.21, T1/E1

Data rates from 50 bps to 10 Mbps

Built-in Speaker for Monitoring DS0s or Timeslots

Displays G.821 Performance Measurements

Front Panel, VT100 Console or Command Line Control

Overview

The GL's LinkTest™ SINGLE is a sophisticated bit error rate tester in a compact, hand held package. The unit can test a wide variety of communications facilities and equipment including Asynchronous (full-duplex and half-duplex), Synchronous T1, Fractional T1, E1, Fractional E1, Modems, Multiplexers, CSU/DSUs, T1 ESF CSUs, DTU, NTUs and TIUs. The LinkTest™ SINGLE is supplied with V.35, RS232, RS422/RS530, X.21, DS1 (T1, 1.544 Mbps) and G.703 (E1, 2.048 Mbps) interfaces. The tester is supplied with a wall-mounted AC transformer. A battery option is also available for complete portable operation. With the option, a nickel metal hydride battery and a recharger are built into the Tester.

Main Features

- Tests asynchronous (full-duplex and half-duplex), synchronous, T1 and fractional T1, E1 and fractional E1 facilities and equipment.
- Interfaces V.35, RS232, RS422/RS530, X.21, T1/E1.
- Data rates from 50 bps to 50 Mbps.
- Built-in speaker for monitoring DS0s or timeslots.
- Displays G.821 performance measurements.
- Terminate and monitor modes.
- Controlled from the front panel, VT100 console or command line interface.
- Works with AC or battery power.

Please visit <http://www.gl.com/linktestsingle.html> for more details.



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Operation

The LinkTest™ *SINGLE* includes a two-line LCD display and sixteen indicator lights that show selected mode, test and operating parameters. Parameters are selected by scrolling through values stored in the tester.

Applications

The LinkTest™ *SINGLE* is designed to fulfill the requirements of a broad range of applications that may be used to test data communications equipment, networks, systems and line facilities. It simulates real data passing through a data communications link, and then determines the performance of a piece of equipment or that of a network. Many standard data patterns may be generated and recovered.

LinkTest™ *SINGLE* can test:

- **Async Mode** - Tests asynchronous modems & CRT terminals.
- **Sync Mode** - Tests the customer interface on DDS, T1 and T3 CSU/DSUs, mux channels and synchronous modems.
- **T1 Mode** – Tests T1 lines, CSU/DSUs both short and long haul, T1 mux and drops from T3 mux.
- **E1 Mode** – Tests E1 lines, NTUs and DTUs, E1 muxes and drops from T3E3 mux.

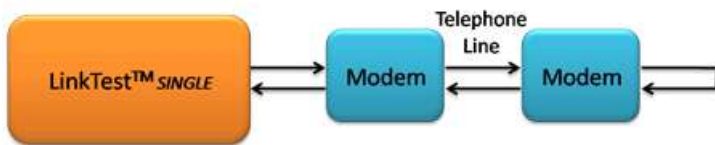


Figure: A LinkTest™ *SINGLE* testing a telephone line and a pair of modems, the remote modem is in loopback

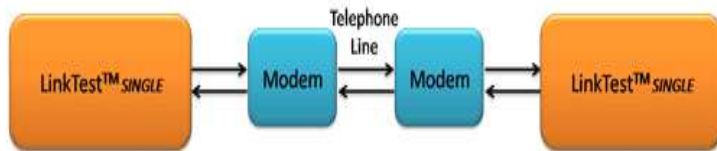


Figure: A pair of LinkTest™ *SINGLE* testing a telephone line and a pair of modems

T1 and E1 Testing

- Displays Bit errors.
- Transmit and receive frequency.
- Test seconds, bit error rate and G.821 performance measurements (erred seconds, severely erred seconds, degraded minutes and available and unavailable times) .
- A variety of test patterns can be inserted in all or selected time slots/DSOs, continuous or non-contiguous, making the Tester ideal for fractional T1 and E1 testing.
- In the T1 mode it also displays receive level.

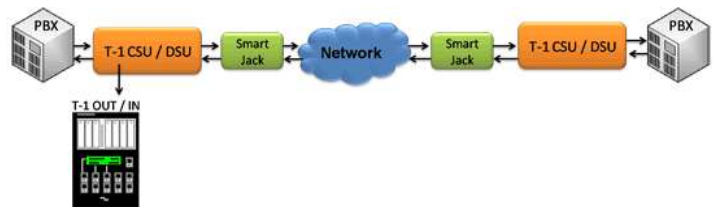


Figure: T1 testing using Monitor

Asynchronous and Synchronous Testing

In addition to T1 and E1, the LinkTest™ *SINGLE* provides asynchronous and synchronous test modes.

- Generates test data in a choice of patterns and formats.
- Users can choose from twenty-eight async and seventy-five sync test speeds.
- Displays bit errors, bit error rate, and total test seconds.
- In the async mode, it also displays characters received, character errors and erred seconds .
- Async mode can be configured to send BERT in full-duplex and half-duplex modes.
- In the sync mode, it also displays TX frequency, RX frequency, CTS delay, G.821 measurements and more.

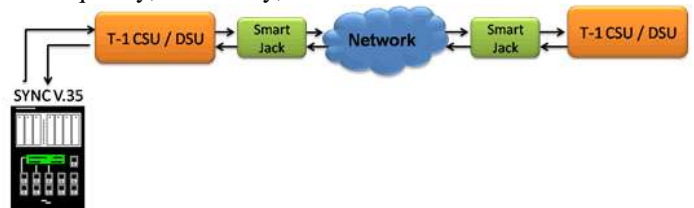


Figure: Testing a T1 facility with CSU/DSUs & V.35 interface (Sync)

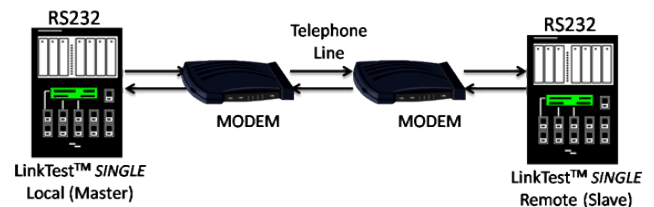


Figure: Testing for Async Terminal or Modem in Half-duplex operation

Specifications

ASYNCR

Speeds	50 to 115,000 bps
Displays	Character Errors, Characters Received, Total Test Seconds, Erred Seconds, Round Trip Delay and Elapsed Time
LEDS	Pattern Lock, Pattern Recovered, TXD, RXD, RTS, CTS, DSR, CD, and DTR
Patterns	2 ⁹ (511), 2 ¹¹ (2047), Binary, Fox Test, Mark, Space and Round Trip Delay
Loops	Self-Test
Interfaces	V.35, RS530, RS422 and RS232 Physical: DB 25 pin Female

SYNCR

Speeds	1,200 to 50,000,000 bps
Displays	Bit Errors, Bit Error Rate, Test secs, Erred secs, Severely Erred secs, Degraded mins, Available, Unavailable, RX Freq, TX Freq, Bits Received, RTS Time, Round Trip Delay and Elapsed Time
LEDS	Pattern Lock, Pattern Recovered, Transmit Data, Receive Data, RTS (C), CTS, DSR, CD (I), DTR, TXC, RXC (S), and External TXC
Patterns	2 ⁹ (511), 2 ¹¹ (2047), 2 ¹⁵ , ITU 2 ¹⁵ , QRSS, 2 ²⁰ , ITU 2 ²⁰ , 2 ²³ , ITU 2 ²³ , 1 of 8, 3 of 24, Alt, Mark, Space and Round Trip Delay
Loops	Self-Test and V.54
Interfaces	V.35/DB25, RS530/DB25, RS422/DB25, RS232/DB25, and X.21/DB15 pin

T1

Speeds	1,544,000 bps
Displays	Bit Errors, Bit Error Rate, Test Secs, Erred secs, Severely Erred secs, Degraded mins, Available, Unavailable, RX Freq, TX Freq, Signaling Bits, Density Errs, Frame Errs, CRC Error, BPV Error, RX Level Volts & dB, Slips, Round Trip Delay
LEDS	Pattern Lock, Pattern Recovered, Frame Lock, AIS (Blue), RLOS, CRC Error, BPV, D4, ESF, AMI, B8ZS and Yellow
Patterns	2 ⁹ (511), 2 ¹¹ (2047), 2 ¹⁵ , ITU 2 ¹⁵ , QRSS, 2 ²⁰ , ITU 2 ²⁰ , 2 ²³ , ITU 2 ²³ , 1 of 8, 3 of 24, T1 DALY, T1 DALY UF, 55 Octet, 55 Octet UF, Alt, Mark, Space, Digimwatt, User 3 - 32, Round Trip Delay, DDS OCU Loop, DDS CSU Loop and DDS DSU Loop
Loops	Self-Test, ATT Loop U/D, ANSI Loop U/D, ATT Payload, ANSI Payload, Smart Jack 1 & 2 (Framed & Unframed) and V.54
Speaker	Monitors selected TX or RX DS0 for voice
Interfaces	DS1 Bipolar, 110 Ohm, AMI/B8ZS Coding
Physical	RJ48C and Dual Bantam

E1

Speeds	2,048,000 bps
Displays	Bit Errors, Bit Error Rate, Test secs, Erred secs, Severely Erred secs, Degraded mins, Available, Unavailable, RX Freq, TX Freq, Slips, CRC Errs, BPV Errs and Frame Errs
LEDS	Pattern Lock, Pattern Recovered, Frame Lock, AIS (Blue), RLOS, CRC Error, BPV, DMFA and RRA
Patterns	2 ⁹ (511), 2 ¹¹ (2047), 2 ¹⁵ , ITU 2 ¹⁵ , QRSS, 2 ²⁰ , ITU 2 ²⁰ , 2 ²³ , ITU 2 ²³ , 1 of 8, 3 of 24, Alt, Mark, Space, Digimwatt and User 3 - 32
Loops	Self-Test and V.54
Speaker	Monitors selected TX or RX timeslot for voice
Interfaces	G.703/704, 75 & 120 Ohm, HDB3 Coding
Physical	Dual Bantam, Dual BNC and RJ48C

General Specifications

Switches

Ten momentary pushbuttons:

Mode

Display (Up button and Down button)

Configure (Up button and Down button)

Change (Up button and Down button)

Send (Loop and Error)

Test (Start)

Console Part

RS232 interface with speed of 9600 bps with 8 data bits, 1 stop and no parity

Supports dial-in modems

Control "D" used for disconnect

Power

North America Wall-mount power supply
90 – 130 VAC

Internationally Switching Mode - inline
100 to 240 VAC, 50 to 60 Hz

8 AA Nickel Metal Hydride Batteries

6 Watts, 21 BTU/hr

Physical Dimensions

Mechanical Measures 5" (12.7 cm) h x 7" (17.8 cm) w x 2" (5.1 cm) d

Weight 1 lb (.45 kg)

Environmental

Operating Temperature 0 to 50 degrees C, 32 to 122 F

Relative Humidity 0% to 95%, non-condensing

Buyers Guide

[LTS001](#) - LinkTest™ *SINGLE*, Hand Portable Single T1E1 Test Set

Related Hardware

[LTS002](#) - LinkTest™ *SINGLE+*, Portable Single T1E, T3E3 Test Set

[LTS003](#) - LinkTest™ *DUAL*, Portable Dual T1E1, T3E3 Test Set with full color display

[LTS101](#) - LinkSim™, Portable Dual T1E1 Data Simulator for delay/error insertion with full color display

[UTE001](#) - USB based Dual T1 or E1 Laptop Analyzer

[UTA001/UEA001](#) - Basic USB based Dual T1 or E1 Laptop Analyzer Software

[HTE001](#) - Universal HD T1 or E1 PCI Cards

[HUT001/HUE001](#) - Basic Universal HD T1/E1 Software