

LinkTest™ DUAL



Tests Async, Sync, T1 and FT1, E1 and FE1, and T3E3

Portable Dual T1E1, T3E3 Test Set

Interfaces V.35, RS232, RS422/RS530, X.21, HSSI, Dual T1E1, Dual T3E3

Built-in LAN Interface for TELNET and TFTP

Displays G.821 performance measurements

Front Panel, VT100 console or command line control

Remote control unit over LAN interface or VT100 interface

Overview

The GL's LinkTest™ DUAL is a sophisticated bit error rate tester in a compact, hand held package with dual interfaces and a full color display. The unit can test a wide variety of communications facilities and equipment including T1, fractional T1, E1, fractional E1, T3 and E3 modems, multiplexers, CSU/DSUs, T1 CSUs, DTUs, NTUs and TIUs.

The LinkTest™ DUAL can be controlled from the front panel or from the local or remote terminal. It includes built-in LAN interface which allows the unit to be controlled remotely using TELNET or TFTP. Also included is RS232 console port that allows unit to be controlled (locally & remotely over a dial modem path) using VT100 interface or using command line interface.

Main Features

- Tests asynchronous, synchronous, T1, fractional T1, E1 and fractional E1, T3 and E3 facilities and equipment.
- Interfaces V.35, RS232, RS422/RS530, X.21, HSSI, dual T1E1, dual T3E3 as standards.
- Data rates from 50 bps to 50 Mbps.
- Displays G.821 performance measurements.
- Command Line Interface control.
- Built-in LAN Interface for TELNET and TFTP.
- Generate and store reports useful for line turnovers, troubleshooting in the lab or diagnosing a communication line issue.
- Can be controlled from the front panel, VT100 console control, or from a local or remote terminal.
- Works on AC or battery power.

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



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Operation

The LinkTest™ *DUAL* includes a 35 by 21 character color LCD display and 22 LED indicators that show selected mode, test and operating parameters, and test data. Parameters are selected by scrolling through values stored in the tester.

The LCD display illuminates when the Tester is powered up.

Applications

It 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. It can then monitor the data passing through the data communications link, and indicates line quality by comparing the data that has been received with the data that was known to have been transmitted.

Typical applications include,

- Final test departments
- Field installations of data communications equipment
- Field evaluations of data communications equipment
- Field monitoring of data communications facilities
- Field problem isolation

LinkTest™ *DUAL* can test:

- Async Mode - Tests asynchronous modems and CRT terminals.
- Sync Mode - Tests the customer interface on DDS, T-1 and T-3 CSU/DSUs, mux channels and synchronous modems
- T-1 Mode – Tests T-1 lines, CSU/DSUs both short and long haul, T-1 muxes and drops from T-3 mux
- E-1 Mode – Tests E-1 lines, NTUs and DTUs, E-1 muxes and drops from T-3/E-3 mux
- T-3 Mode – Tests T-3 lines and muxes and T-1/E-1 channels on T-3 facilities
- E-3 Mode – Tests E-3 lines and mux

Dual T3 and E3 Testing

The LinkTest™ *DUAL* can test T3 and E3 networks and CSUs. It performs

- G.821 measurements and displays bit errors, bit error rate, frequency and more
- With the dual T3/E3 TX and RX framers and codecs, it can monitor both sides of the line and hence listen to voice on a DS0 or Timeslot on a channelized T3/E3

Dual T1 and E1 Testing

In the T1 and E1 modes, the LinkTest™ *DUAL*

- Displays Bit errors
- Transmit and receive frequency
- Test seconds, bit error rate and G.821 performance measurements
- A variety of test patterns can be inserted in all or selected DS0s/Timeslots, continuous or non-contiguous, making the LinkTest™ *DUAL* ideal for fractional T1 or E1 testing
- With two T1/E1 framers, it can measure bit and frame slips as well as monitor and listen to both the TX and RX DS0s and Timeslots simultaneously
- Also performs Drop/Insert (D/I) testing a single DS0 or Timeslot without interfering with the remaining ones

Asynchronous and Synchronous Testing

In an async and sync test mode, the LinkTest™ *DUAL* generates test data in a choice of patterns and formats.

- 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
- In the sync mode, it also displays TX frequency, RX frequency, CTS delay, G.821 measurements and more

Remote Operation

LAN Interface

The built-in LAN interface in the LinkTest™ *DUAL* can be used -

- To connect the unit directly to a PC or add to an existing LAN network to TELNET
- Download new firmware to the LinkTest™ *DUAL* unit using TFTP
- Upload a report to a PC using TFTP

Console Port – VT100 Interface

The LinkTest™ *DUAL* includes a serial RS232 Console Port which can be used as a VT100 port or a Command Line Interface. A console cable can be used to connect the LinkTest™ *DUAL* locally to a laptop. The serial port has modem control signals so that an external modem can be attached to the LinkTest™ *DUAL* for remote access. This path is password protected.



Specifications

T1

Framing	Framed or Unframed
Speed	1,544,000 bps
Displays	Bit Errors, Bit Error Rate, RX Level Volts/dB, Erred Secs, Severely Erred Secs, Degraded Mins, Available, Unavailable, RX Freq, TX Freq, Signaling Bits, Density Errs, Frame Errs, CRC Error, BPV Error, Slips, Round Trip Delay
LEDS	Line 1: Pattern Lock, Pattern Recovered, Frame Lock, AIS (Blue), RLOS, CRC Error, BPV, D4, ESF, AMI, B8ZS and Yellow Line 2: 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
Interfaces	Dual DS1 BiPolar, 110 Ohm, AMI/B8ZS Coding Physical: RJ48C & dual bantam

T1 on T3

Framing	Framed or Unframed
Speed	44,736,000 bps
Displays	Bit Errors, Bit Error Rate, T-3 RX Level, Erred Secs, Severely Erred Secs, Degraded Mins, Available, Unavailable, RX Freq, TX Freq, P-Bit Errs, C-Bit Errs, T3 & T2 Frame Errs, LCV Error, FEBE Error, Excessive 0s and LOS Secs
LEDS	Line 1: Pattern Lock, Pattern Recovered, Frame Lock, AIS (Blue), RLOS, LOF, LCV, FEBE, Yellow, M13 and C-Bit Line 2: Frame Lock, AIS (Blue), RLOS, LOF, LCV, FEBE, Yellow, M13 and C-Bit
Patterns	2 ⁹ (511), 2 ¹¹ (2047), 2 ¹⁵ , ITU 2 ¹⁵ , QRSS, 2 ²⁰ , ITU 2 ²⁰ , 2 ²³ , ITU 2 ²³ , 1111, IDLE 1100, AIS 1010, 0000, 1 of 8 and User 3 - 32
Loops	Self-Test, T1 CSU, T3 Chan and V.54
Interfaces	Dual DS3 BiPolar, 75 Ohm Physical: Dual Mini WECO 560A bantam

T3 Unchannelized

Framing	Framed or Unframed
Speed	44,736,000 bps
Displays	Bit Errors, Bit Error Rate, T-3 RX Level, Erred Secs, Severely Erred Secs, Degraded Mins, Available, Unavailable, RX Freq, TX Freq, P-Bit Errs, C-Bit Errs, T3 & T2 Frame Errs, LCV Error, FEBE Error, Excessive 0s and LOS Secs
LEDS	Line 1: Pattern Lock, Pattern Recovered, Frame Lock, AIS (Blue), RLOS, LOF, LCV, FEBE, Yellow, M13 and C-Bit Line 2: Frame Lock, AIS (Blue), RLOS, LOF, LCV, FEBE, Yellow, M13 and C-Bit
Patterns	2 ⁹ (511), 2 ¹¹ (2047), 2 ¹⁵ , ITU 2 ¹⁵ , QRSS, 2 ²⁰ , ITU 2 ²⁰ , 2 ²³ , ITU 2 ²³ , 1111, IDLE 1100, AIS 1010, 0000, 1 of 8 and User 3 - 32
Loops	Self-Test and CSU
Interfaces	Dual DS3 BiPolar, 75 Ohm Physical: Dual Mini WECO 560A

E1

Framing	Framed or Unframed
Speed	2,048,000 bps
Displays	Bit Errors, Bit Error Rate, E-1 RX Level, Erred Secs, Severely Erred Secs, Degraded Mins, Available, Unavailable, RX Freq, TX Freq, CRC Errs, BPV Errs and Frame Errs
LEDS	Line 1: Pattern Lock, Pattern Recovered, Frame Lock, AIS (Blue), RLOS, CRC Error, BPV, DMFA and RRA Line 2: 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
Interfaces	Dual G.703/704, 75 & 120 Ohm, HDB3 Coding Physical: RJ48C & dual bantam



E1 on T3 (G.747)

Framing	Framed or Unframed
Speed	44,736,000 bps
Displays	Bit Errors, Bit Error Rate, T-3 RX Level, Erred Secs, Severely Erred Secs, Degraded Mins, Available, Unavailable, RX Freq, TX Freq, CRC Errs, BPV Errs and Frame Errs
LEDS	Line 1: Pattern Lock, Pattern Recovered, Frame Lock, AIS (Blue), RLOS, CRC Error, BPV, DMFA and RRA Line 2: 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
Interfaces	Dual G.703/704, 75 & 120 Ohm, HDB3 Coding Physical: RJ48C & dual bantam

E1 on E3

Framing	Framed or Unframed
Speed	34,368,000 bps
Displays	Bit Errors, Bit Error Rate, E-3 RX Level, Erred Secs, Severely Erred Secs, Degraded Mins, Available, Unavailable, RX Freq, TX Freq, CRC Errs, BPV Errs and Frame Errs
LEDS	Line 1: Pattern Lock, Pattern Recovered, Frame Lock, AIS (Blue), RLOS, CRC Error, BPV, DMFA and RRA Line 2: 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
Interfaces	Dual G.703/704, 75 & 120 Ohm, HDB3 Coding Physical: RJ48C & dual bantam

Buyers Guide

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

Related Hardware

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

[LTS002](#) - LinkTest™ *SINGLE+* Portable Single T1E1, T3E3 Test Set

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

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

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

E3 Unchannelized

Framing	Framed or Unframed
Speed	34,368,000 bps
Displays	Bit Errors, Bit Error Rate, E-3 RX Level, Erred secs, Severely Erred secs, Degraded Mins, Available, Unavailable, RX Freq, TX Freq, LCVs, LOS secs and Frame Errors
LEDS	Line 1: Pattern Lock, Pattern Recovered, Frame Lock, AIS (Blue), RLOS, LOF, BPV, and RAI Line 2: Frame Lock, AIS (Blue), RLOS, LOF, BPV, and RAI
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, Alt, Mark, Space and User 3 - 32
Loops	Self-Test and LINE
Interfaces	Dual G.703/751, 75 Ohm, HDB3 Coding Physical: Dual Mini WECO 560A

Sync

Speed	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
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, X.21/DB15 and HSSI/50 pin

Async

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

Physical Dimensions

Dimension	8.75" (22.2 cm) H x 7.5" (19.1 cm) W x 4" (10.2 cm) D
Weight	4.4 lbs (1.81 kg)



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