

# WAN Tester IIID



- Tests asynchronous, synchronous, DDS, T-1, fractional T-1, E-1 and fractional E-1, T-3 and E-3 facilities and equipment
- V.35, RS232, RS422/RS530, X.21, DDS, dual T-1, dual E-1, dual T-3 and dual E-3 interfaces
- Data rates from 50 bps to 50 Mbps
- Displays G.821 performance measurements
- Front panel Color LCD Display, TELNET, VT100 and Command Line Interface control
- Includes a built-in LAN Interface for TELNET and TFTP
- AC and battery power

The Telinc WAN Tester IIID is a sophisticated bit error rate tester in a compact, hand held package. It can test a wide variety of communications facilities and equipment including T-1, fractional T-1, E-1, fractional E-1, T-3 and E-3 modems, multiplexers, CSU/DSUs, T-1 CSUs, DTUs, NTUs and TIUs. It is supplied with user changeable nickel metal hydride batteries and a built-in charger.

## Dual T-1 and E-1 Testing

In the T-1 and E-1 modes, the Tester 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 Tester ideal for fractional T-1 or E-1 testing. Because it contains two T-1/E-1 framers, it can measure bit and frame slips as well as monitor and listen to both the TX and RX DS0s and TimeSlots simultaneously. It can also perform Drop/Insert (D/I) testing a single DS0 or TimeSlot without interfering with the remaining ones

## Dual T-3 and E-3 Testing

The WAN Tester IIID can test T-3 and E-3 networks and CSUs. It performs G.821 measurements and displays bit errors, bit error rate, frequency and more. With the dual T-3/E-3 TX and RX framers and codecs, it can monitor both sides of the line so it can listen to voice on a DS0 or Timeslot on a channelized T-3/E-3.

## DDS Testing

The Tester also includes a DDS analyzer. It can operate at speeds from 2400 to 72,000 bps. It can simulate a CSU/DSU to test networks or a network to test CSU/DSUs.

## Async and Sync Testing

In the async and sync test mode, the Tester generates test data in a choice of patterns and formats. The user can choose from twenty-eight async and seventy-five sync test speeds. In the async mode, it displays characters received, character errors and errored seconds. In the sync mode, it displays bit errors, bit error rate, TX frequency, RX frequency, CTS delay, G.821 measurements and more.

## Reports

The WAN Tester IIID can generate and store reports useful for line turnovers, troubleshooting in the lab or diagnosing a communication line issue.

## Easy to use

The WAN Tester IIID can be controlled from the front panel or from a local or remote terminal and TELNET. It includes a 320 x 240 Color LCD display that shows selected mode, test and operating parameters. Parameters are selected by scrolling through values stored in the Tester.

# WAN Tester IIID

## Specifications

### T-1

Framing:	D4, ESF, Unframed
Function:	Terminate, Monitor, Drop/Insert, Drop/Insert Monitor, Bridge
Speed:	1,544,000 bps
Displays:	Bit Errors, Bit Error Rate, RX Level Volts/dB, Errored Secs, Severely Errored Secs, Degraded Mins, Available, Unavailable, RX Freq, TX Freq, Signalling Bits, Density Errs, Frame Errs, CRC Err, BPV Err, Slips, Round Trip Delay
LEDS:	Line 1: Pattern Lock, Pattern Recovered, Frame Lock, AIS (Blue), RLOS, CRC Err, BPV, D4, ESF, AMI, B8ZS and Yellow Line 2: Frame Lock, AIS (Blue), RLOS, CRC Err, BPV, D4, ESF, AMI, B8ZS and Yellow
Patterns:	2 <sup>9</sup> (511), 2 <sup>11</sup> (2047), 2 <sup>15</sup> , ITU 2 <sup>15</sup> , QRSS, 2 <sup>20</sup> , ITU 2 <sup>20</sup> , 2 <sup>23</sup> , ITU 2 <sup>23</sup> , 1 of 8, 3 of 24, T-1 DALY, T-1 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
Features:	Monitor ISDN Primary Rate D Channel View the contents of a selected DS0 View ATT 54016 FDL Messages View ANSI T1.403 FDL Messages Generate ATT 54016 FDL and view response messages Generate time-stamped report based on errors or time Listen to full duplex telephone conversation on any DS0 View all signalling bits in all DS0s in both directions simultaneously
Interfaces:	Dual DS1 BiPolar, 110 Ohm, AMI/B8ZS Coding Physical: RJ48C & dual bantam

### T-1 on T3

Framing:	Cbit, M13, Unframed
Function:	Terminate, Monitor, Drop/Insert, Drop/Insert Monitor
Speed:	44,736,000 bps
Displays:	Bit Errors, Bit Error Rate, T-3 RX Level, Errored Secs, Severely Errored Secs, Degraded Mins, Available, Unavailable, RX Freq, TX Freq, P-Bit Errs, C-Bit Errs, T3 & T2 Frame Errs, LCV Err, FEBE Err, 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 <sup>9</sup> (511), 2 <sup>11</sup> (2047), 2 <sup>15</sup> , ITU 2 <sup>15</sup> , QRSS, 2 <sup>20</sup> , ITU 2 <sup>20</sup> , 2 <sup>23</sup> , ITU 2 <sup>23</sup> , 1111, IDLE 1100, AIS 1010, 0000, 1 of 8 and User 3 - 32
Loops:	Self-Test, T-1 CSU, T-3 Chan and V.54
Features:	Monitor ISDN Primary Rate D Channel on any 1 of 28 DS1s View the contents of a selected DS0 on any 1 of 28 DS1s Listen to full duplex telephone conversation on any DS0 on any 1 of 28 DS1s View all signalling bits in all DS0s in both directions simultaneously on any 1 of 28 DS1s Generate time-stamped report based on errors or time Generate and view Far End Alarm & Control (FEAC) messages Drop any 1 of 28 T-1 lines out the T-1 interface
Interfaces:	Dual DS3 BiPolar, 75 Ohm Physical: Dual Mini WEC0 560A

### T-3 Unchannelized

Framing:	Unchannelized or Unframed
Function:	Terminate, Monitor
Speed:	44,736,000 bps
Displays:	Bit Errors, Bit Error Rate, T-3 RX Level, Errored Secs, Severely Errored Secs, Degraded Mins, Available, Unavailable, RX Freq, TX Freq, P-Bit Errs, C-Bit Errs, T3 & T2 Frame Errs, LCV Err, FEBE Err, 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 <sup>9</sup> (511), 2 <sup>11</sup> (2047), 2 <sup>15</sup> , ITU 2 <sup>15</sup> , QRSS, 2 <sup>20</sup> , ITU 2 <sup>20</sup> , 2 <sup>23</sup> , ITU 2 <sup>23</sup> , 1111, IDLE 1100, AIS 1010, 0000, 1 of 8 and User 3 - 32
Loops:	Self-Test and CSU
Features:	Generate time-stamped report based on errors or time
Interfaces:	Dual DS3 BiPolar, 75 Ohm Physical: Dual Mini WEC0 560A

# WAN Tester IIID

## Specifications

### DDS

Function: Terminate  
Patterns: 2<sup>9</sup> (511), 2<sup>11</sup> (2047), 2<sup>15</sup>, ITU 2<sup>15</sup>, QRSS, 2<sup>20</sup>, ITU 2<sup>20</sup>, 2<sup>23</sup>, ITU 2<sup>23</sup>, 1 of 8, 3 of 24, Alt, Mark, Space and Round Trip Delay  
Loops: Self-Test and V.54  
Speeds: 2,400 to 72,000 bps  
Displays: Bit Errors, Bit Error Rate, Test Secs, Errored Secs, , Secondary Errors, Severely Errored Secs, Degraded Mins, Available, Unavailable, RX Freq, TX Freq, Bits, RX Level dB, Simplex Current, Round Trip Delay and RLOS Secs  
LEDS: Pattern Lock, Pattern Recovered, CMI (IDLE), All 1s, All 0s, RLOS, OOF, OOS, CSU Loop, DSU Loop and V.54 Loop  
Features: Generate time-stamped report based on errors or time  
Interfaces: Four-wire, BiPolar Physical: RJ48S

### E-1

Framing: Framed or Unframed  
Function: Terminate, Monitor, Drop/Insert, Drop/Insert Monitor  
Speed: 2,048,000 bps  
Displays: Bit Errors, Bit Error Rate, E-1 RX Level, Errored Secs, Severely Errored 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 Err, BPV, DMFA and RRA  
Line 2: Frame Lock, AIS (Blue), RLOS, CRC Err, BPV, DMFA and RRA  
Patterns: 2<sup>9</sup> (511), 2<sup>11</sup> (2047), 2<sup>15</sup>, ITU 2<sup>15</sup>, QRSS, 2<sup>20</sup>, ITU 2<sup>20</sup>, 2<sup>23</sup>, ITU 2<sup>23</sup>, 1 of 8, 3 of 24, Alt, Mark, Space, Digimwatt and User 3 - 32  
Loops: Self-Test and V.54  
Features: Monitor ISDN Primary Rate D Channel  
View the contents of a selected Timeslot  
Generate time-stamped report based on errors or time  
Listen to full duplex telephone conversation on any Timeslot  
Interfaces: Dual G.703/704, 75 & 120 Ohm, HDB3 Coding Physical: RJ48C & dual bantam

### E-1 on T-3 (G.747)

Framing: Cbit, M13, Unframed  
Function: Terminate, Monitor, Drop/Insert, Drop/Insert Monitor  
Speed: 44,736,000 bps  
Displays: Bit Errors, Bit Error Rate, T-3 RX Level, Errored Secs, Severely Errored 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 Err, BPV, DMFA and RRA  
Line 2: Frame Lock, AIS (Blue), RLOS, CRC Err, BPV, DMFA and RRA  
Patterns: 2<sup>9</sup> (511), 2<sup>11</sup> (2047), 2<sup>15</sup>, ITU 2<sup>15</sup>, QRSS, 2<sup>20</sup>, ITU 2<sup>20</sup>, 2<sup>23</sup>, ITU 2<sup>23</sup>, 1 of 8, 3 of 24, Alt, Mark, Space, Digimwatt and User 3 - 32  
Loops: Self-Test and V.54  
Features: Monitor ISDN Primary Rate D Channel on any 1 of 21 E1s  
View the contents of a selected Timeslot on any 1 of 21 E1s  
Listen to full duplex telephone conversation on any Timeslot on any 1 of 21 E1s  
Generate time-stamped report based on errors or time  
Drop any 1 of 21 E-1 lines out the E-1 interface  
Interfaces: Dual G.703/704, 75 & 120 Ohm, HDB3 Coding Physical: RJ48C & dual bantam

### E-1 on E-3

Framing: Framed or Unframed  
Function: Terminate, Monitor, Drop/Insert, Drop/Insert Monitor  
Speed: 34,368,000 bps  
Displays: Bit Errors, Bit Error Rate, E-3 RX Level, Errored Secs, Severely Errored 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 Err, BPV, DMFA and RRA  
Line 2: Frame Lock, AIS (Blue), RLOS, CRC Err, BPV, DMFA and RRA  
Patterns: 2<sup>9</sup> (511), 2<sup>11</sup> (2047), 2<sup>15</sup>, ITU 2<sup>15</sup>, QRSS, 2<sup>20</sup>, ITU 2<sup>20</sup>, 2<sup>23</sup>, ITU 2<sup>23</sup>, 1 of 8, 3 of 24, Alt, Mark, Space, Digimwatt and User 3 - 32  
Loops: Self-Test and V.54  
Features: Monitor ISDN Primary Rate D Channel on any 1 of 16 E1s  
View the contents of a selected Timeslot on any 1 of 16 E1s  
Listen to full duplex telephone conversation on any Timeslot on any 1 of 16 E1s  
Generate time-stamped report based on errors or time  
Interfaces: Dual G.703/704, 75 & 120 Ohm, HDB3 Coding Physical: RJ48C & dual bantam

# WAN Tester IIID

## Specifications

### E-3 Unchannelized

Framing: Framed or Unframed  
Function: Terminate, Monitor  
Speed: 34,368,000 bps  
Displays: Bit Errors, Bit Error Rate, E-3 RX Level, Errored Secs, Severely Errored Secs, Degraded Mins, Available, Unavailable, RX Freq, TX Freq, LCVs, LOS Secs and Frame Errs  
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<sup>9</sup> (511), 2<sup>11</sup> (2047), 2<sup>15</sup>, ITU 2<sup>15</sup>, QRSS, 2<sup>20</sup>, ITU 2<sup>20</sup>, 2<sup>23</sup>, ITU 2<sup>23</sup>, 1 of 8, Alt, Mark, Space and User 3 - 32  
Loops: Self-Test and LINE  
Features: Generate time-s stamped report based on errors or time  
Interfaces: Dual G.703/751, 75 Ohm, HDB3 Coding Physical: Dual Mini WECO 560A

### SYNC

Speeds: 1,200 to 16,128,000 bps  
Displays: Bit Errors, Bit Error Rate, Test Secs, Errored Secs, Severely Errored 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<sup>9</sup> (511), 2<sup>11</sup> (2047), 2<sup>15</sup>, ITU 2<sup>15</sup>, QRSS, 2<sup>20</sup>, ITU 2<sup>20</sup>, 2<sup>23</sup>, ITU 2<sup>23</sup>, 1 of 8, 3 of 24, Alt, Mark, Space and Round Trip Delay  
Loops: Self-Test and V.54  
Features: Generate time-stamped report based on errors or time  
Interfaces: V.35/DB25, RS530/DB25, RS422/DB25, RS232/DB25 and X.21/DB15 pin

### ASync

Speeds: 50 to 115,000 bps  
Displays: Character Errors, Characters Received, Total Test Seconds and Errored Seconds  
LEDS: Pattern Lock, Pattern Recovered, TXD, RXD, RTS, CTS, DSR, CD, and DTR  
Patterns: 2<sup>9</sup> (511), 2<sup>11</sup> (2047), Binary, Fox Test, Mark and Space  
Loops: Self-Test  
Features: Generate time-stamped report based on errors or time  
Interfaces: V.35, RS530, RS422 and RS232 Physical: DB 25 pin Female

**Mechanical:** The WAN Tester IIID measures 8.75" (22.2 cm) H x 7.5" (19.1 cm) W x 4" (10.2 cm) D and weighs 4.4 lbs (1.81 kg)

### Part number for ordering

TL2087D WAN Tester IIID



The WAN Tester IIID is supplied complete with all the interfaces pictured above except the HSSI connector is replaced by an RJ48S modular connector for DDS.

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