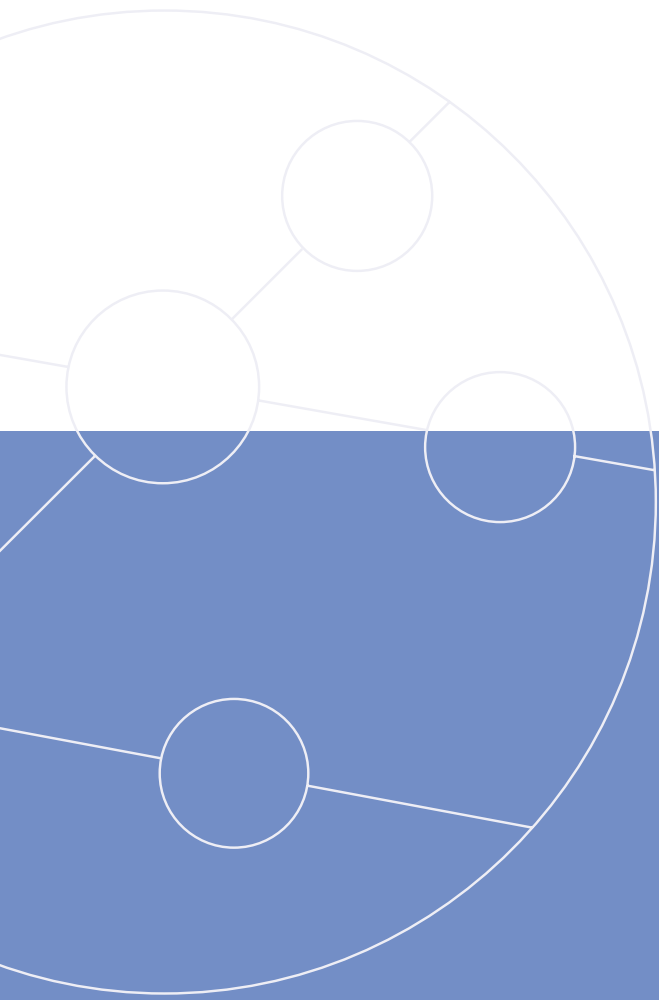


LT2000



xDSL test equipment



xDSL

Copper pair qualification for the new digital age



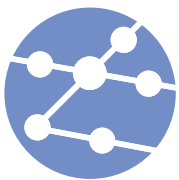
TrendCommunications

Selective level meter

Trend Communications is renowned for its aurora family of world-class testers for ATM, Frame Relay and ISDN. This family is now expanded by the introduction of the **LT2000** Line Tester – an easy to operate, battery powered and cost effective field instrument for verifying the quality of copper pairs for analogue and digital transmissions with a bandwidth requirement up to 2 MHz.

The **LT2000** can perform measurements for Noise, Level, Attenuation, Crosstalk and Return Loss for a variety of transmission systems including Base Band, 160 kbit/s, 1.5 Mbit/s, 2 Mbit/s, HDSL and ADSL.

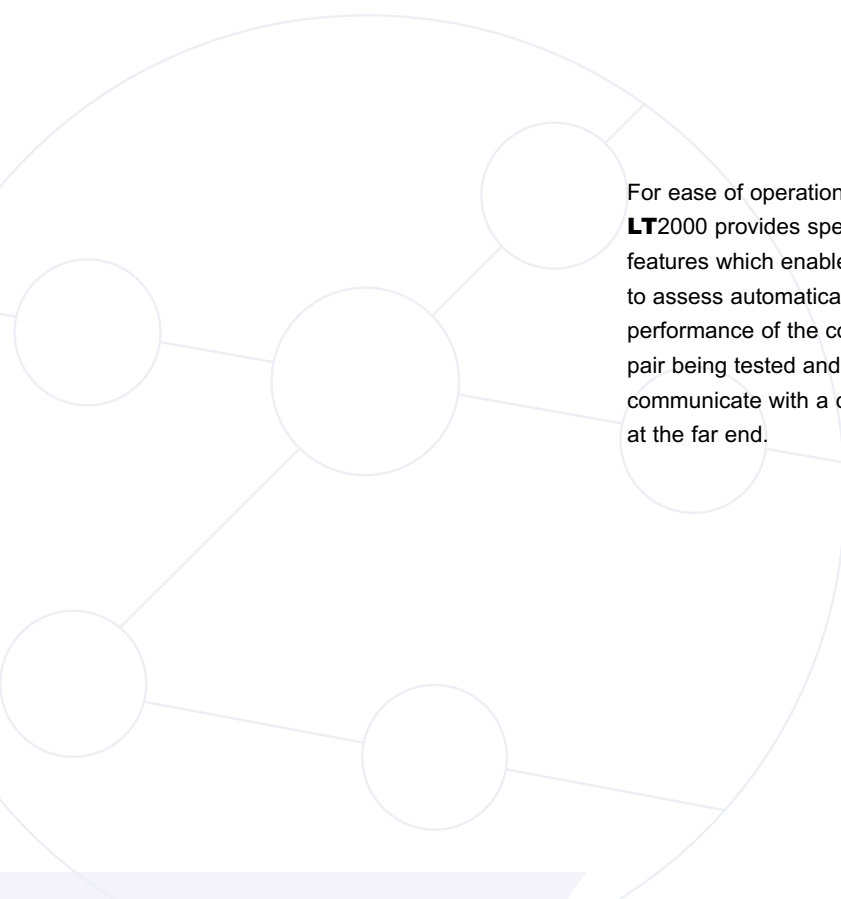
A standard tool for the line plant technician, the **LT2000** provides all of the information required about the transmission parameters of copper pairs to determine their suitability for Digital Subscriber Loop deployment. Used pre- and post-installation, and for maintenance trouble-shooting, the **LT2000** can pin-point any degradation of a pair's performance which could lead to transmission problems and downtime.



LT2000
Line tester



Special features



For ease of operation the **LT2000** provides special features which enable the user to assess automatically the performance of the copper pair being tested and to communicate with a colleague at the far end.

Automatic measurements in Sweep Mode

The generator and level meter can be set to automatically sweep the required part of the frequency spectrum to measure the minimum and maximum values of the noise level, return loss and cross talk, and the frequencies at which these occur.

Intercom facility between a local and remote user using the line under test.

Applications

The parameters which can affect the performance of a copper pair and hence its suitability for DSL transmission are measured using either one **LT2000** at one end of the line or one at each end. Measurements are compared to standard limits to result in a pass or fail for the line.

Attenuation meter

– using an **LT2000** at each end of the line, one as a generator and one as a receiver, to measure the attenuation of the line over the frequency spectrum.

Noise and level meter

– using an **LT2000** at one end of the line to measure noise.

Return loss meter

– using an **LT2000** to measure the level of echo-signal caused from the impedance mismatching of the line.

Applications

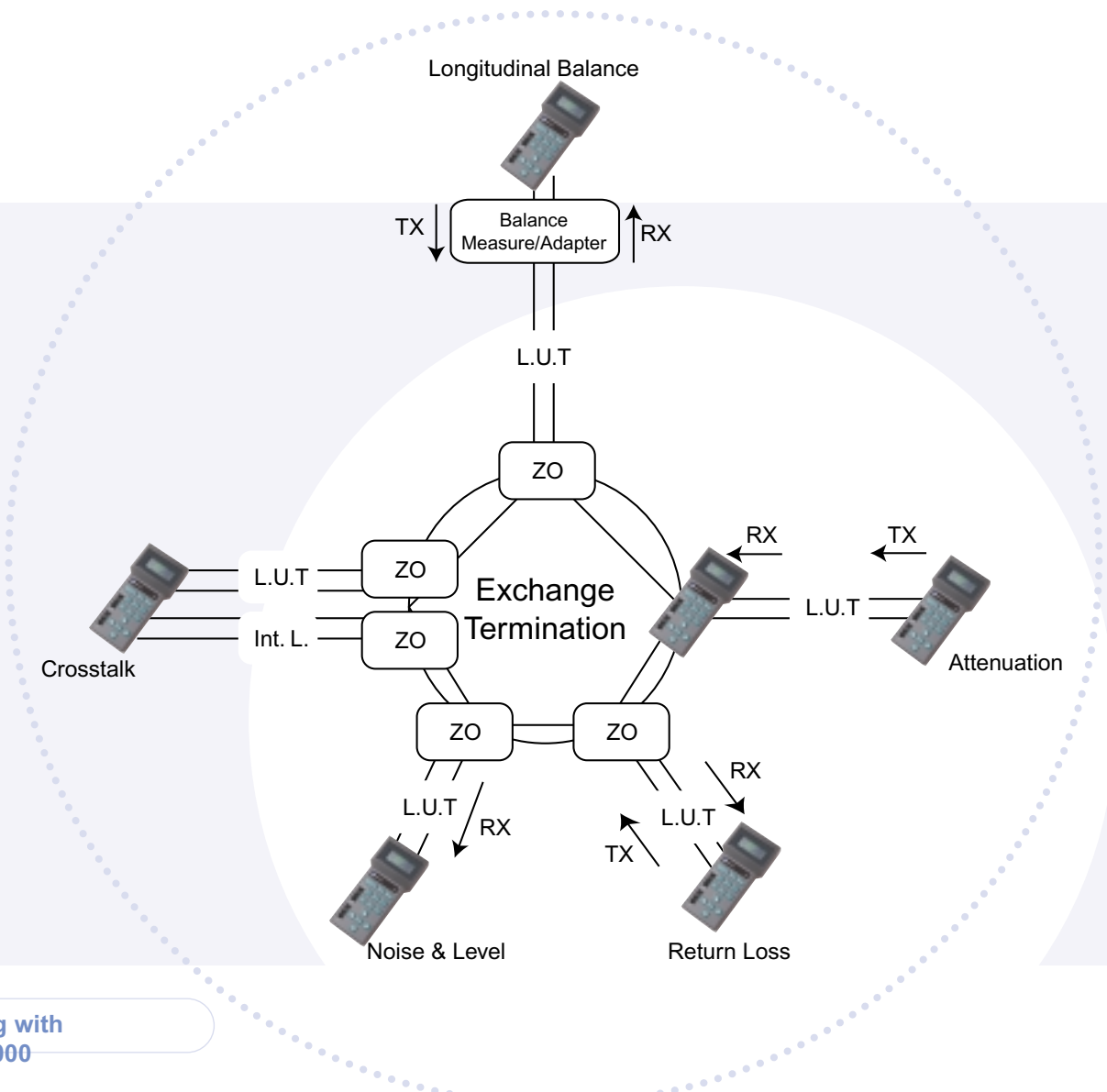
continued

Crosstalk meter

– Near End Crosstalk (NEXT) using an **LT2000** at one end of the line to measure how much signal is coupled from the transmitting line to the receiving line. The **LT2000** can also be used to measure Far End Crosstalk (FEXT).

Longitudinal balance meter

– using one **LT2000** and a special adaptor to measure the balance attenuation of the line referred to ground or another conductor.



General

Display LCD; 4 lines x 16 characters
Connectors Input connector "RX" triple banana jack (a-b-Gnd)
 Input/output connector "TRX" triple banana jack (a-b-Gnd)
 Polarised connector for external power/charger
 FCC68 4-4 connector for headset
Power supply Internal; NiMh rechargeable batteries
 (3 hours of operational use)
 External; 11 to 32 Vdc/1.5 to 0.6 A
Dimensions 100 x 40 x 210 mm
Weight 1Kg
Temperature Operational; 0°C to 50°C Storage; -10°C to 60°C

Level Generator

Output impedances <10Ω, 150Ω (120 or 135Ω optional), 600Ω balanced (≈ 5μF series).
Output frequency bands 200Hz to 2MHz.
Resolution 1Hz from 200Hz up to 10kHz; 100Hz from 10kHz up to 2MHz.
Frequency accuracy/stability ≤± 15ppm.
Harmonic distortion ≤0.5 %.
Output level 0.0dBm ± 0.2dB @ 10kHz

Output level accuracy vs. frequency (referred to 10 kHz)

	-2 to -1 dB	-1 to -0.5 dB	-0.5 to -0.2 dB	± 0.1 dB	± 0.3 dB
Zo Out 600Ω			200Hz	800Hz	800kHz
Zo Out 120 to 150Ω	200Hz	300Hz	600Hz	2kHz	800kHz
					2000kHz

Selective Level Meter

Input impedances 150Ω (120 or 135Ω optional) 600Ω, ≥ 200 kΩ balanced (≈ 5μF series)
Tunable frequencies Tracking with TX frequency (200Hz to 2MHz)
Resolution 1Hz from 200Hz up to 10kHz; 100Hz from 10kHz up to 2MHz
Tuning accuracy/stability ≤± 15ppm
Selectivity (fo > 800Hz) ≤-0.5dB @ + 30Hz fo; ≥ -50dB @ + 500Hz fo
Level measurements absolute (dBm) and relative (dBr)
Input range ≤-100 to +5dBm/resolution: 0.1dB
Hybrid circuit – Return Loss ≥40dB with nominal load
Noise floor (TX off) ≤-100dBm @ 600; ≤ -95dBm @ 120 to 150Ω
Intrinsic cross talk ≤-90dBm @ 1MHz
Freq. image/spurious rejection ≥60dB (fo ≥ 800Hz)

Level accuracy vs. input level (referred to 10 kHz):

	± 0.3 dB	± 0.2 dB	± 0.5 dB	± 1 dB	± 2 dB
Zo In 600Ω	+5 dBm	0 dBm	-70 dBm	-85 dBm	-95 dBm
Zo In 120 to 150Ω	+5 dBm	0 dBm	-70 dBm	-80 dBm	-90 dBm
					-100 dBm

Level accuracy vs. frequency (referred to 10 kHz/0 dBm):

	-2 to -1 dB	-1 to -0.5 dB	-0.5 to -0.2 dB	± 0.1 dB	± 0.3 dB
Zo Out 600Ω			200Hz	800Hz	800kHz
Zo Out 120 to 150Ω	200Hz	300Hz	600Hz	2kHz	800kHz
					2000kHz

Automatic measurements in sweep mode

Automatic measurements:

- Noise (or Level)** – frequency & level readout of min. and max. noise level
 – RMS noise level readout on programmed wideband
Return-loss – frequency & level readout of min. and max. echo level
Near Cross talk – frequency & level readout of min. and max. cross level

Operating programmable bands

(1 step/sec. speed)
 "base band" from 200Hz min. to 10kHz max.
 (100, 200, 400, 1000Hz selectable step)
 "high band" from 10kHz min. to 2MHz max.
 (0.1, 0.2, 0.4, 1, 2, 4, 10 and
 20kHz selectable step)

Sweep generator

(10 step/sec. speed)
 "base band" from 200Hz min. to 10kHz max.
 (100, 200, 400, 1000Hz selectable step)
 "high band" from 10kHz min. to 2MHz max.
 (0.1, 0.2, 0.4, 1, 2, 4, 10 and
 20kHz selectable step)

Standard Equipment

The LT2000 is supplied as a package containing the tester, softpack carrying case, 2 x Banana/Crocodile cables, a 150Ω/600Ω balanced measurement adaptor, 2 x 150Ω terminations and 2 x 600Ω terminations.

Optional accessories

Headset
 Fixed Balanced Attenuator 3, 6, 10, 20, 30 or 40db: 150Ω (120 or 135Ω 150) 600Ω.
 Resistive Termination 120 or 135Ω
 Balance Measure Adapter 120 or 135Ω/600



Trend Communications Ltd
Knaves Beech Estate
Loudwater
High Wycombe
Buckinghamshire
HP10 9QZ
United Kingdom

TrendCommunications

International: +44 (0)1628 524977

United Kingdom: 01628 524977

France: 01 69 35 54 70

Deutschland: 089 32 30 09 11

Italia: 02 73 91 414

España: 93 300 3313

India: 022 859 7463

Email: infoline@trendcomms.com

Web: www.trendcomms.com

A Member of the Telematrix plc Group



Distributor

To arrange a demonstration or to obtain the latest information on the Trend **LT2000** or any of Trend's other test equipment, contact your nearest Trend Distributor.