TLP-3C

2M Transmission Analyzer

Introduction:

2M Transmission Analyzer is a multi-functional and full- featured digital transmission system test device, designed for the installation test, engineering check and acceptance, daily maintenance of digital networks, mainly performing channel test, alarm analysis, fault finding and signalling analysis. In addition, this instrument further provides various protocol converters with one-way and bi-directional bit error test function. These capabilities make it ideal for field use.

Basic Functions:

- 1) 2M testing
  - 75Ω and 120Ω line interfaces
  - HDB3 and AMI line codes
  - Out-of-service 2Mb/s, N×64kb/s BER testing
  - In-service framed and unframed double-channel testing
  - "PCM simulator" mode testing
  - Frame data control and monitoring
  - Timeslot activity monitoring, FAS, N-FAS, TS16MFO analysis
  - Built-in 64kb/s tone channel listen capability
  - CAS and CCS signaling generation and monitoring
  - Round trip delay measurement
  - APS delay measurement
  - Extensive error and alarm generation
  - VF tone generation and measurement
  - Level measurement
  - Pulse mask measurement
  - Jitter measurements to ITU-T standard O.172
  - Frequency and offset measurement
  - Clock slip measurement
  - Up to ±999ppm transmit clock deviation
  - Clock source: Internal, Interface or External 2M clock/signal
  - Real-time transmit circuit open/short indication
- 2)Datacom testing
  - Datacom (V.24, V.35, V.36, X.21, RS-449, RS-485, EIA-530 and EIA-530A) interfaces BER Testing
  - ASYNC BER testing with baud rate 300b/s~38.4Kb/s
  - SYNC BER testing with data rate 300b/s~8Mb/s
  - DTE or DCE emulation
  - SYNC clock source and sense selection
  - Frequency measurement
- Handshaking signals control and monitoring

3) G.703 CO testing
- G.703 CO 64kb/s BER testing
- Octet timing control and monitoring
- Frequency and offset measurement

- Clock source: Internal, Interface selectable

4) Protocol converter testing
- 2M-Datacom SYNC 64k or N×64kb/s BER testing
- 2M-G.703 CO SYNC 64kb/s BER testing
- Frequency and offset measurement
- Handshaking signals monitoring

- 2M frame data and alarm monitoring

5) Other functions
- Real-time clock
- Test pattern: PRBS, Fixed Code and 16-BIT User Word
- Error injection: Single and Fixed Rate
- Manual and auto-timer measurement
- ITU-T G.821, G.826, and M.2100 performance analysis

Main Features:

- Handheld design and easy-to-use
- Full-featured measurements to 2M, Datacom
- High resolution backlit large LCD screen, with adjustable contrast
- Smart navigation mode and multi-languages displays
- Extensive error and alarm generation, detection and indication
- Histograms analysis of alarm and error events
- Up to 99 days continuance test performance
- Save/Recall of up to 7 user-defined setups and 70 sets of results
- Up to 6 hours operation from a single battery charge
- Built-in Li rechargeable battery and smart charger circuit
- Can be charged with automobile cigarette lighter battery adapter
- Ungradable software via an integrated RS232C interface
- Test results uploaded, conserved and printed by PC Manager software

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Specifications:

Item	Description		
2M	Internal Clock	2048kb/s ± 10ppm	
	Frequency Deviation	±999ppm	
	Line Interface	75Ω (Unbalanced), 120Ω (Balanced); High Input Impedance >2KW	
	Line Code	HDB3, AMI	
	Framing	Unframed, PCM30, PCM30CRC, PCM31, PCM31CRC	
	Receive Sensitivity	> -43dB	
	Tx Clock Source	Internal, Interface and External 2MHz clock or signal	
	Pulse Mask Measurement	Comply with G.703	
	Jitter Measurement	Comply with O.172	
	Frequency Measurement	Accuracy: ±1Hz	
	Offset Measurement	Accuracy: ±1ppm Range: -999ppm～+999ppm	
	VF Injection	Frequency: 200Hz～3400Hz, Step: 10Hz	
		Level: -60dBm～+3dBm	
	VF Measurement	Frequency: 200Hz～3400Hz, Accuracy: ±1Hz	
		Level range :-60.00dBm～+3.14dBm -60.00dBm～-21.00dBm, accuracy: ±2.87dBm -20.00dBm～+3.14dBm, accuracy: ±0.21dBm	
	Delay Measurement	Accuracy: ±1μs	
G.703 CO	Line Rate	64kb/s ± 100ppm	
	Line Interface	120Ω, Balanced	
	Line Code	AMI	
Datacom	Line Interfaces	V.24, V.35, V.36, X.21, RS-449, RS-485, EIA-530, EIA-530A	
	Data Rate	ASYNC	300, 600bit/s, 1.2, 2.4, 4.8, 7.2, 9.6, 19.2, 38.4kb/s
		SYNC	300, 600bit/s, 1.2, 2.4, 4.8, 7.2, 9.6, 19.2, 38.4kb/s, N×64kb/s (N=1～32),4M,8Mkb/s
Test Patterns	PRBS	2^{23}-1,2^{20}-1, 2^{15}-1, 2^{11}-1, 2^{9}-1,2^{6}-1	
	Fixed Code	1111, 0000, 1010	
	16-BIT	User Programmable Word	
LED Alarm Indicators	Signal Loss, AIS, Frame Loss, MFrame Loss, Pattern Loss, Remote Alarm, Error, Clock Slip.		
Error Injection	Type: BIT, FAS, CRC4, CODE, E-BIT		
	Single, Fixed Rate : 10^{-2}, 10^{-3}, 10^{-4}, 10^{-5}, 10^{-6}, 10^{-7}		
Performance Analysis	ITU-T G.821, G.826 and M.2100		
Display	320x240 pixel backlit monochromatic LCD		
Serial Port	RS-232C		
Rechargeable Batteries	5×1.2V AA NiMH batteries, continuous working for 6 hours		
Recharge Time	Approx. 2 hours		
AC Power Adapter	Input: 100V～240VAC, 50/60Hz Output: 12VDC/1.5A		
TestManager Pro	WIN98/ME/NT/2000/XP		
Dimensions	L×W×H 200mm × 160mm × 45mm		
Operating Temperature	0℃～50℃		
Storage Temperature	-20℃～70℃		
Humidity	5%～95% non-condensing		

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Ordering Information:

Standard Accessories:

Standard Items	Unit	Qty.	Standard Items	Unit	Qty
TLP-3C 2M Transmission Analyzer	pcs.	1	Simulation software	pcs.	1
75Ω testing line	pcs.	2	Carrying case	pcs.	1
75Ω line interface	pcs.	1	User's manual	pcs.	1
RS232 serial upgrading cable	pcs.	1	Warranty card	pcs.	1
DATA converting line(36PIN to 44PIN)	pcs.	1	Certificate of conformity	pcs.	1
X.21 testing line	pcs.	1	V.35 testing line	pcs.	1
V2.4 testing line	pcs.	1	V.11 testing line	pcs.	1
			AC adapter	pcs.	1

Optional Accessorie:

120 testing line	**pcs.**	**2**	**64K testing lines**	**pcs.**	**1**

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