TFN T6300A All-in-One PRI & Multi-service Network Tester

Product Overview

The T6300A is a groundbreaking handheld integrated test instrument, recognized as the world's first to combine PRI, E1, V.35/V.24, Gigabit Ethernet, OTDR, and optical power meter functionalities into a single, portable device. It is designed for telecommunications carriers and enterprise network teams to efficiently install, commission, and maintain multi-technology networks, significantly reducing the need for multiple specialized tools.

Key Features & Benefits (Solving Customer Pain Points)

- Ultimate Convergence: Replace an entire toolkit with one device. Handles PRI signaling, E1/V.35 data circuits, Ethernet performance, and fiber optic testing, reducing capital expenditure and simplifying field operations.
- Deep PRI/ISDN Analysis: Comprehensive 30B+D signaling testing, call simulation (TE/NT), and voice channel monitoring for rapid PRI service activation and fault isolation.
- Powerful Ethernet & IP Testing: Perform RFC2544 benchmarks (Throughput, Latency, Jitter, Frame Loss), IP Ping, Trace Route, and packet capture on 10/100/1000M copper and fiber interfaces.
- Integrated Fiber Optics: Builtin OTDR functionality and a high precision optical power meter (800-1700nm) allow for complete fiber link characterization and fault finding without external devices.
- Visual Network Intelligence: The 7inch touchscreen displays automated network topology discovery, loop-back status, and real-time traffic statistics, providing an intuitive overview of network health.
- Protocol Versatility: Supports a wide range of protocols including HDLC, PPP, Frame Relay, and IPRAN/MSTP technologies, making it ideal for hybrid network environments.

Core Functions

1. PRI/ISDN Testing: 30B+D Signaling Analysis (Q.921/Q.931), Call Simulation, Voice Insertion/Extraction.
2. E1 / V.35 / V.24 Testing: BERT (G.821/G.826), Protocol Analysis (HDLC, PPP, FR), Loop-back Ping, Auto IP Discovery.
3. Gigabit Ethernet Testing: RFC2544, Y.1564, Traffic Generation & Monitoring, Packet

Capture, Ping/Trace Route.

4. Fiber Optic Testing: OTDR Trace Analysis, Optical Power Measurement, SFP DDMI Monitoring.
5. Network Discovery: Automatically maps layer 2 network topology.
6. Multi - service Validation: IPRAN, MSTP, and DHCP testing capabilities.

Technical Specifications

10/100/1000M Gigabit Ethernet	
Provides 10/100/1000M electrical port and 100/1000M optical port connectivity verification services	
Dual optical and electrical ports, the optical port supports 850/980/1300/1310/1490/1550nm	
Statistics on packets sent, received, error packets, packet loss and packet loss rate	
Support RFC2544 Layer 1/Layer 2/Layer 3 testing functions	
RFC2544 standard test: packet loss rate test, throughput test, latency test, back-to-back test, up to Gigabit line speed	
Provides Ethernet link fast traffic PING and loopback PING, jumbo frame and jumbo packet PING tests	
Support IP RAN test, physical loopback, layer 2 loopback, layer 3 loopback, layer 4 loopback FTP bandwidth test, network discovery, packet capture analysis, route tracking, ARP scanning	
Fine flow monitoring in through-flow mode	
DHCP automatically obtains and configures an IP address	
Loop discovery display	
Section E1	
Divided into E1 interface error test and IP Ping (PPP/HDLC/Frame Relay) function test	
Test purpose: 1. Loopback test E1 link bit error rate and transmission performance 2. Loopback IP ping link is smooth 3. Online monitoring E1 physical layer link for bit errors	
Specific indicators	
Test rate	2.048Mbps, N (continuous) and M (non-continuous) x 64Kbps (N&M = 1 to 31) Insert/remove N or M x 64kbps
Line Coding	HDB3&AMI
Frame Type	Unframed, PCM-30, PCM30c, PCM-31, PCM-31c, compliant with ITU- T G.704
Online and offline testing functions	
Sending end	
Clock source, internal clock: 2.048MHz±50ppm	
Receive: Locks onto the received signal	
Line coding: HDB3 and AMI	
Pulse waveform: Compliant with ITU-T G.703	
Error insertion: BIT, CODE, BIT+CODE; single or 1x10-7 to 1x10-7 rate	
Receiver	
Frequency range: 2.048Mbps±50ppm	
Input sensitivity: 0 to -43dB	

Return loss performance complies with ITU-T G.703 jitter capacitance
Compliant with ITU-T G823
Measurement
E1 receiving signal level
E1 receiving frequency measurement
E1 interface voltage
Code/BPV errors (error count and ratio)
Frame errors (FAS, MFAS, and CRC-4 error counts and error ratios), LOS, Sync loss, LOF, AIS, FAS, RAI, and MFAS second counts , G.821 analysis, G.826, M.2100/550 testing, E-bit error counts and ratios
Supports analysis of PPP and HDLC layer 2 routing protocols
Fast flow IP ping function test and loopback ping
Automatically display loop detection
Section V.35/V.24
v. 35 interface error test and IP Ping (PPP/HDLC/Frame Relay) function test
Test Purpose : 1. The instrument automatically detects the remote router protocol type and IP address, and performs IP Ping function to perform connectivity test function 2. V.35 link layer error test
Specific indicators Test rate: Nx64Kbps (N=1 to 31)
V.35, DCE/DTE access mode & V.24 synchronous test mode test pattern
PRBS: 2n-1, n=9, 11, 15, 20, 23, compliant with ITU-T 0.152, 0.153
BERT error characteristic test complies with G.821 analysis
Provide V.35/V.24 monitoring function
Supports analysis of PPP and HDLC layer 2 routing protocols
Fast flow IP ping function test and loopback ping
Frame Relay part
Support E1, V.35/V.24 physical interfaces
UNI DTE/DCE Frame Relay monitoring and simulated customer premises equipment (CPE) testing
Compliant with standards: ITUQ.933, ANSI T1.618/T1.617, CISOCO LMI, LMI analysis, PVC status
DLCI statistics (provides 32 DLCIs at the same time)
CIR service quality test
Timer: T391, T392, N391, N392, N393
Performance Statistics
Supports automatic detection of link IP addresses and testing of fast traffic IP PING functions
Automatically display loop detection
Optical Power Meter (OPM) section
Advantages: The optical power is tested through an independent optical power meter interface, and the test accuracy is much higher than that of SFP optical modules.

Wavelength range: 800nm~1700nm
Calibrated wavelengths: 850/980/1300/1310/1490/1550 nm
Probe type: InGaAs
Power measurement range: -70dBm~+6dBm
Uncertainty: ± 0.25dB
Linearity: 0.03dB
Display resolution: 0.01dB
Visual Fault Locator (VFL) section
Operating wavelength: 650nm
Fiber output power: >10mW
Flashing frequency: Constantly bright/2Hz
OTDR part
Measurement wavelength : 1550nm±10nm
Laser type : pulsed FP laser
Dynamic range: 20dB
Measuring range : 500m/1Km/2.5Km/5Km/10Km/20Km/40Km
Pulse width : 10ns/25ns/50ns/100ns/250ns/500ns/1us/2.5us/5us/10us
Blind zone : event blind zone <4m, attenuation blind zone <10m
General Characteristics/Environment
Can store 1000 test results, which can be displayed on the screen or printed
High-resolution 7.0-inch color LCD display with LED backlight
Internal battery: polymer lithium battery 6000mA , 4.2V
Battery operating time: 6 hours; Charging time: 5 hours
Operating temperature: 0℃ to 50℃
Storage temperature: -20℃ to +70℃
Temperature: 5% to 90% non-condensing
Size: 190mmx120mmx35mm
Weight: less than 1 kg

Ideal Applications

- Telecom Access Network (PRI, E1) Installation & Maintenance
- Enterprise Private Line (E1/V.35/Ethernet) Service Acceptance
- Data Center and IPRAN/MSTP Network Operation
- System Integration & MultiProtocol Network Commissioning
- Fiber Cable Maintenance and Fault Localization (OTDR)

Why Choose the T6300A?

The T6300A redefines portability and capability in network testing. By integrating critical technologies into one intuitive handheld unit, it empowers technicians to tackle complex, multi-vendor network challenges with unprecedented speed and efficiency. Minimize downtime, accelerate service delivery, and future-proof your toolkit with the T6300A.