TFN T5500A 10 Gigabit Network Comprehensive Tester

An all-in-one, portable multi-service test platform integrating IPRAN/OTN, Ethernet, E1/V.35, and optical power testing, covering all transmission and data network scenarios

Product Introduction

The T5500A is a high-performance, handheld tester that integrates 10 Gigabit Ethernet, IPRAN/OTN, E1/V.35 interfaces, an optical power meter, and an infrared light source. It supports a wide range of functions, including 10M to 10G full-rate testing, RFC2544, TCP latency, E1 bit errors, and V.35 protocol emulation. It is ideal for commissioning, maintaining, and troubleshooting transmission and data networks in industries such as carriers, military, electric power, and railways, making it an efficient, all-in-one testing partner for field engineers.

Core selling point (solving customer pain points)

1. Multi-service all-in-one device: One device covers Ethernet, E1, V.35, optical power, and infrared light source testing, reducing the number of devices carried out in the field and improving operation and maintenance efficiency.
2. 10G capability + multi-interface integration: Supports 10G optical ports, Gigabit optical/electrical ports, E1 (75 Ω/120 Ω), and V.35/V.24, meeting the testing needs for a smooth transition from traditional TDM to modern IP networks.
3. Intelligent operation and maintenance assistance: supports IP/VLAN automatic discovery, port positioning, loop detection, ARP scanning, TCP delay testing, and rapid location of network fault points.
4. Portable design and long battery life: Weighing only about 1 kg, it has a large 7-inch screen, a 12000mAh battery that supports 6 hours of continuous operation, and supports in-vehicle charging, making it suitable for outdoor mobile operations.
5. Full protocol coverage: supports RFC2544, DHCP detection, frame relay, PPP/HDLC, MPLS, etc., with carrier-grade testing capabilities.

Main Features

- Ethernet testing: 10M/ 10G traffic generation, RFC2544 (throughput, latency, packet loss, back-to-back), Jumbo frame support (maximum 10,000 bytes)
- IP toolset: Ping, Trace Route, TCPING (SYNACK/FINACK delay), ARP scanning, DHCP detection, broadcast storm monitoring

- E1 testing: BERT error detection (G.821/G.826/M.2100), frame format identification, NX64K timeslot analysis, frequency measurement, and alarm statistics
- V.35/V.24 testing: protocol emulation (PPP/HDLC/FR), automatic IP acquisition, fast PING, frame relay monitoring
- Optical power meter: wavelength range 850 - 1650nm, measurement range 70dBm to +6dBm, accuracy ±0.25dB
- Red light source: 650nm wavelength, output power>10mW, supports constant light/flash mode
- Management functions: topology discovery, USB/WiFi data export, electronic signature, 8GB TF card storage

Product Parameters

General features:

User Interface	
Display	6.5-inch TFT touch screen display (640×480 resolution)
Business Interface	
USB data port	USB2.0, Type A interface, 2; USB2.0 MiniB interface, 1
Ethernet port	Ethernet 10/100, interface: RJ45 (port)
Storage capacity	8G
Other interfaces	
Audio Interface	For connecting optional headphones, 3.5mm diameter jack
Other Features	
Size and weight	FT100: 319(H)x 202 (W) x 105(D) mm; 2.8kg OTM2602: 25(H) x 97 (W) x 259(D) mm; 0.4kg OTM2610 : 25(H)x 97 (W) x 259(D) mm; 0.4kg
temperature	Operating temperature: -10°C to 50°C; Storage temperature: -40°C to 70°C
relative humidity	0% to 95% (non-condensing)
vibration	<1.5g from 10Hz to 500Hz (on all three major axes)
Mechanical shock	<760 cm on six sides and eight main edges (according to GR-196-CORE standard)
EMC	EN55022/CIPSR22, EN61000-3-2, EN55024
Battery and power supply	
Battery	Rechargeable and replaceable lithium-ion battery Working time: 8 hours (typical) Charging time: 6 hours (typical) (25°C)
powered by	Input: 100 to 240V (AC), 50Hz/60Hz, 1.6A Output: 19V, 4A

Technical Specifications:

Test interface	2 RJ45 interfaces, 10/100/1000M Base-T 2 SFP modules, 100/1000M Base-X 1 XFP module, 10G Base -X
Ethernet functionality	Auto-negotiation, 10/100/1000M full-duplex and half-duplex, 10G full-duplex, flow control
Test Configuration	Monitor/Generate, Through Mode

Encapsulation	Ethernet Type II, IEEE802.3 with 802.2, IEEE802.3 with SNAP
Configuration, monitoring, and generation patterns	
Traffic Generation	Variable line traffic generation, up to line speed Traffic generation mode: continuous, burst, incremental, n-frame, n-burst, n-incremental Variable frame length from 64 to 16,000 bytes Frame length: fixed, increasing, decreasing, random (same below) User-definable traffic flows that mix unicast and broadcast frames Fixed or auto-incrementing MAC address Fixed or auto-incrementing IP address indication Configurable IP and Ethernet source/destination addresses (supports IPv4 and IPv6 addresses) Support IP advanced TOS/DS editing Supports auto-increment, auto-decrement or random address User editable TCP/UDP addresses Supports generation and response of PAUSE frames ARP reply and PING request (on/off)
Multi-layer VLAN	Supports Layer 3 optional VLAN VLAN tag parameters: Ethernet Type II 0x8100(802.1Q), 0x88a8(802.1ad), 0x9100 or 0x9200 User-defined VLAN ID, CFI and VLAN priority VLAN ID supports auto-increment, auto-decrement and random generation
Multi-stream	Number of streams: Gigabit supports the production and analysis of 8 data streams ; 10 Gigabit supports the generation and analysis of up to 512 data streams
Error production	FCS, IP Checksum Error, IP fragment, CRC4 Error, BIT error, error sequence error
Alarm generation	No connection, remote failure
Results, Monitoring and Production Models	
state	Link status, interface type, small frame detection, frame, MPLS/VLAN, rate, full/half duplex, receive Ethernet signal rate, auto-negotiation complete Receiver capability: rate/duplex Utilization indicators, throughput and error frames Ethernet optical interface signal level indication
Performance Statistics	Utilization, throughput, frame rate
Frame Statistics	Total frames, total valid frames, unicast/multicast/broadcast frames, PAUSE frames VLAN frame count MPLS frames and Total error frames, overlong and undershort frames, FCS error frames,
Frame distribution	Total valid frames: <64, 64-127, 128-511, 512-1023, 1024-1518, >1518 Frame size

statistics	
Multi-stream statistics	Information about each stream: Frame loss number/rate, throughput, latency, packet jitter, number of frames and bytes received and sent
Sending Statistics	Total frames, unicast/multicast/broadcast frames,
Filter	Filter conditions can support: IP/MAC source address, IP/MAC destination address, broadcast address, encapsulation type, VLAN ID and VLAN priority, MPLS, TCP/UDP source and destination port
Error code testing and service interruption time	
Bit error test	Generate and detect test patterns, count received bit errors, pattern generation: unframed (Layer 1), framed Ethernet MAC header (Layer 2), framed Ethernet MAC header and IP header (Layer 3), or framed MAC header, IP header, and TCP/UDP header (Layer 4) Number of dropped frames and frame drop ratio Throughput measurement results include the following information: , physical layer, link layer, network layer and data layer Test pattern: PRBS9, PRBS11, PRBS15, PRBS20, PRBS23, PRBS31, HF test pattern, CRPRJ, JTPAT, SPAT, user programmable 32 bits
Error	FCS, wrong IP checksum, CRC4 Error, BIT, wrong sequence error
Service interruption testing	Service interruption testing as part of bit error testing Multi/average service interruption test with 0.1us resolution Number of service interruptions
Loopback and pass-through	
Loopback test	Loopback test capability for unframed (Layer 1), framed Ethernet MAC header (Layer 2), framed Ethernet MAC header and IP header (Layer 3), or framed MAC header, IP header and TCP/UDP header (Layer 4) Advanced loopback impairment test capability Packet loss settings: by ratio, by number of packets, by time Loopback drop enable: protocol drop, protocol pass, control frame, CRC error, IP/TCP/UDP error
Through-test	Through-hole monitoring function through 2 RJ45 or 2 SFP interfaces Advanced penetration damage testing capabilities: Packet loss settings: by ratio, by number of packets, by time Pass-through discard enable: protocol discard, protocol pass, control frame, CRC error, IP/TCP/UDP error
RFC3393	
Jitter test	Jitter testing of VoIP packets such as G.711, G.723.1, and G.729 Jitter results: number of samples, minimum value, maximum value, current value, average value
RFC2544	
RFC2544 test	Switch/router test and single-ended network test modes: Throughput, frame loss, latency or packet jitter, back-to-back frames (burst capability) End-to-end network test mode (two OTP6126 meters set to local and

	remote modes respectively) Throughput, frame loss, back-to-back (burst capability)
Service Activation Test (Y.1564)	
Service activation test	ITU-T Y.1564 service activation test: Each port supports 8 service flows Color perception and non-color perception Test mode: single-ended (unidirectional or bidirectional, symmetrical and asymmetrical), loop Service acceptance criteria: CIR, EIR, overshoot, frame transmission delay, frame jitter, frame loss rate,
Business configuration test	Subtests: CIR (Committed Information Rate), EIR (Excess Information Rate), Traffic Shaping, CBS (Committed Burst Size), EBS (Excess Burst Size) Step length: 1-60s (user-settable) Results: Pass/Fail indication, IR (small/average/large), FL (Count/FLR), FTD, FDV (small/average/large/(during test))
Business performance testing	Simultaneous testing of all services at CIR rates Test time: 15 minutes, 2 hours, 24 hours or user-defined Results: Pass/Fail indication, IR (small/average/large), FL (Count/FLR), FTD, FDV (small/average/large/(during test)),
Remote intelligent loopback test function	
Remote intelligent loopback	Applicable to one instrument controlling another instrument to perform asymmetric testing of RFC2544 and Y.1564; Supports remote intelligent loopback testing of unframed (Layer 1), framed Ethernet MAC header (Layer 2), framed Ethernet MAC header and IP header (Layer 3), or framed MAC header, IP header and TCP/UDP header (Layer 4)
IP Advanced Test Tools	
PING	For connection and configuration checking: Round Trip Time (RTT) Support IPv4 and URL addresses
Trace Route	Tracing IP routes on an IP network Information about each hop: PING time (maximum/minimum/average), number of PING timeouts
VCT Cable Testing	For CAT5 cable fault testing: Status: Pass/Fail Fault location Channel Polarity Latency
Flow Control	Flow control time, us Total pause time, last value, maximum value, minimum value Pause frame number TX, RX
FTP Upload/Download	Used for simulation testing of FTP servers and clients: Support IPv4, address

	Username/Password File upload/download Results: Pass/Fail, upload and download time display
HTTP	WEB Browsing Support IPv4, address Web page opening success/failure
Online business scanning	Online scanning of various service types in the network, including: MAC, IP, VLAN ID, MPLS Label, and port number. Statistics: utilization, number of frames received
Advanced PING (Topology)	PING test within a certain IP address range IP address range start and end Number of times sent Timeout (ms) Status: Pass/Fail
MPLS	
Number of MPLS headers	Users can set up to 3 MPLS headers
Parameters of each MPLS header	In each MPLS header, users can define Label, Exp and TTL fields. Label increment, decrement and random generation
statistics	MPLS frame number
MPLS-TP OAM	Compliant with ITU-T G.8113.1 Supported OAM messages ITU-T Y.1731: CCM, LBM, LBR, LTM, LTR, AIS, LCK, TST, MCC, LMM, LMR, 1DM, DMM, DMR, EXM, EXR, VSM, VSR, SLM, SLR IEEE 802.1ag: CCM, LBM, LBR, LTM, LTR
Ethernet OAM	
Ethernet OAM Standards	ITU-T Y.1731 (Service Layer OAM) IEEE802.1ag (Link Layer OAM) IEEE802.3 (formerly IEEE802.3ah) (Access Link OAM)
Support Message	Generates and receives the following OAM messages: ITU-T Y.1731: CCM, LBM, LBR,LTM,LTR,AIS,LCK,TST,MCC,LMM,LMR,1DM, DMM, DMR, EXM,EXR,VSM,VSR,SLM,SLR IEE802.1ag: CCM, LBM, LBR, LTM, LTR IEEE802.3ah: information, variable request, variable response, loopback control
IEEE802.3ah Function	Discover Loopback activation/entering loopback mode
Synchronous test (only supports Gigabit test interface)	
SyncE Function	Compliant with ITU-T G.826X standard Specifies the quality level (QL) of the Ethernet signal being sent. Analyze the quality level (QL) of the received Ethernet signal and the alarm of QL loss SyncE results: SSM RX count and rate, SSM TX count, indicated QL

	statistics, and SSF seconds ESMC message capture and export in Wireshark format
IEEE 1588v2 PTP function	Each port of the Ethernet interface can be used as a timing master or slave Supported modes: multicast (native PTP) and unicast (G.8265.1) Support PTP message over Ethernet and PTP message over UDP over IPv4 Configuration parameters (per port): clock identity, port number, priority 1/2, domain number, clock category, slave clock mode only, clock source, encapsulation, receive timeout, clock accuracy, clock distribution mode, announce interval, synchronization interval, delay request interval, and unicast duration. IEEE1588v2 clock results: clock status, announcement count, synchronization count, tracking count, delay request/response/tracking count, equal delay request/response/tracking count Small/Large/Average: Offset, offset error, average channel delay, equal average channel delay, channel delay variance Master clock results: identity, port number Slave clock results: identity, category, accuracy, priority 1/2, announced and observed offset changes Recorded IEEE1588 events: clock state transitions, state transition events, master clock failures and changes IEEE1588 message capture and output in Wireshark format
Ethernet frame capture	
Capture Cache	100M When the capture buffer is full: stop
Capture frame packet length	If activated, the first 64 or 128 bytes of the frame are intercepted (the rest of the frame is ignored). The byte length can be defined.
Capturing Data	CAP format can be displayed in Wireshark
10G WAN-PHY	
WAN Test Mode	10Gbps Ethernet
standard	SDH/SONET
Error Insertion	SDH: FAS, B1, B2, MS-REI, B3, HP-REI SONET: FAS, B1, B2, REI-L, B3, REI-P
Alarm generation	SDH: LOS, LOF , OOF, MS-AIS, MS-RDI, MS-TIM, AU-AIS, AU-LOP, HP-PLM, HP-UNEQ, HP-TIM, HP-RDI SONET: LOS, LOF, OOF, AIS-L, RDI-L, AIS-P, LOP-P, PLM-P, UNEQ-P, TIM-P, RDI-P
Error monitoring	SDH: FAS, B1, B2, MS-REI, B3, HP-REI SONET: FAS, B1, B2, REI-L, B3, REI-P
Alarm Monitoring	SDH: LOS, LOF , OOF, MS-AIS, MS-RDI, MS-TIM, AU-AIS, AU-LOP, HP-PLM, HP-UNEQ, HP-TIM, HP-RDI SONET: LOS, LOF, OOF, AIS-L, RDI-L, AIS-P, LOP-P, PLM-P, UNEQ-P, TIM-P, RDI-P
Spend editing and	Generate user-defined overhead bytes

monitoring	Monitoring and display of current overhead bytes

Ordering Information:

model	Product Name
Host	
FT100	Intelligent, modular test platform
T 5 500A(1) module	Dual-optical and dual-electrical Gigabit packet network test module
T 5 500A(2) module	Single-port 10G packet network test module
Standard accessories	
16080010	Instrument interface —LC/PC fiber optic test patch cord, 3 meters long
16060040	Ethernet electrical interface test jumper, CAT5 test cable
14020090	1.25G 1310nm 15km LC SFP optical module. 2 pcs
14020180	10G 1310nm 10km LC XFP optical module, 1 piece
43170020	19V power adapter for FT100 platform.
16060010	2-meter power cable.
43160031	FT100 platform 2 parallel 4 series lithium-ion rechargeable battery
18080010	FT100 electronic CD-ROM.
19070010	FT100 instrument package.
	Three-year warranty for the main unit and one-year warranty for the adapter and battery
Software Options	
OPAP-8023ahAGeEth	GE IEEE802.3ah OAM test function
OPAP-Y1564AGeEth	GE Y.1564 test function
OPAP-IPv6AGeEth	GE IPv6 test function
OPAP-ScanAGeEth	GE online business scanning function
OPAP-EautoAGeEth	GE advanced auto-negotiation test function
OPAP-ErrorITAGeEth	GE damage test function
OPAP-LoneBandAGeEth	GE layer 1 bandwidth test function
OAPA-EPINGAGeEth	GE Advanced PING Test Function
OPAP-3MPLSAGeEth	GE Layer 3 MPLS testing function
OPAP-GECapture	GE Packet Capture and Parsing
OPAP-BidRFC2544AGeEth	GE RFC2544 asynchronous test
OPAP-Y1731AGeEth	GE Y.1731 OAM test function
OPAP-G81131AGeEth	GE Y.8113.1 OAM test function
OPAP-FXAGeEth	100Base-X interface test function option
OPAP-SyncAGeEth	GE Sync-E test function
OPAP-8023ahTGeEth	10GE IEEE802.3ah OAM test function
OPAP-Y1564TGeEth	10GE Y.1564 test function
OPAP-IPv6TGeEth	10GE IPv6 test function
OPAP-ScanTGeEth	10GE online service scanning function
OPAP-LoneBandTGeEth	10GE layer 1 bandwidth test function
OAPA-EPINGTGeEth	10GE advanced PING test function

OPAP-3MPLSTGeEth	10GE Layer 3 MPLS testing function
OPAP-10GECapture	10GE packet capture and analysis
OPAP-Y1731TGeEth	10GE Y.1731 OAM test function
OPAP-G81131TGeEth	10GE Y.8113.1 OAM test function
OPAP-128StreamsTGeEth	10GE 128- stream test function
OPAP-512StreamsTGeEth	10GE 512- stream test function
OPAP-10GWANATGeEth	10GE WAN test function
Hardware options	
43160031	FT100 platform 2 parallel 4 series lithium-ion rechargeable battery
14020180	10G XFP optical module, 1310nm , 10km , LX
14020170	10G XFP optical module, 1550nm , 80km , ZX
14020160	1.25G SFP optical module, 850nm , 550m , SX
14020090	1.25G SFP optical module, 1310nm , 15km , LX
14020340	1.25G SFP optical module, 1550nm , 40km , ZX

Applicable Scenarios

1. Operator IPRAN/OTN network deployment and maintenance
2. Construction and inspection of power, railway and highway dedicated networks
3. Military communication system integration and troubleshooting
4. Optical cable construction and fiber connectivity verification
5. Enterprise data center and campus network performance testing

Why choose T5500A?

Designed with the concept of "one device, multiple functions," the T5500A breaks the functional boundaries of traditional testers, integrating 10 Gigabit Ethernet testing with traditional E1/V.35 and optical power measurement capabilities. Whether targeting modern IP networks or legacy TDM systems, the T5500A provides lightweight, efficient, and professional-grade testing support, helping users reduce equipment costs and improve operational response times.