

TPI™ 550B+

ISDN Test Set



# The Latest in Portable Intelligent Testing™

## TPI™ 550B+ ISDN Test Set

**T**he increased implementation of ISDN makes meeting customer requirements for service and reliability more challenging than ever before. In today's competitive telecommunications environment, technicians require an easy-to-use, portable test set to handle the job the first time out. That is why service users of all types rely on TTC's TPI 550B+ ISDN Test Set to validate their internal communications networks.

Rugged and compact, the 550B+ offers a full array of features, functions, and performance capabilities with considerable built-in flexibility to turn-up and troubleshoot Basic Rate ISDN (BRI), EBS (P-Phone), and POTS, and supports all U.S. call controls and ISDN central office switches. New enhancements verify teleconferencing technology, and give the TPI 550B+ the ability to test G.821 in BERT as well as providing more BERT patterns and 3.1K audio bearer capabilities. Other added enhancements include test macros, parameter download, AutoSPID, and IDSL testing. A three-year Firmware Enhancement Option enables easy upgrades to meet evolving test requirements and ensures a solid return on investment.

### Highlights

#### Intelligent Testing™ Features

- Local/Distant bearer capability tests quickly confirm that calls can be placed to the local switch and to a distant subscriber using four different bearer capabilities.

#### Pinpoint ISDN Problems

- Auto SPID feature reports and displays the SPIDs, allowing you to select the correct SPID for testing.
- SPID Guess determines the SPID after the 10-digit directory number has been entered.

#### Built for Today's Technology

- Auto Video Test auto-answers and loops both B channels for video calls.

#### User-Friendly Design

- Technicians with limited training can do the job quickly and correctly in the shortest possible time.

#### Test Anywhere

- Compact, lightweight and weather-resistant, the TPI 550B+ goes wherever your testing needs take you.

*Intelligent Testing (IT)  
enhancements for the TPI 550B+  
simplify test routines—so the test  
set does most of the work for you.*



## Ready for Service

Lightweight and compact, the TPI 550B+ is the ideal solution for portable ISDN testing. Battery-powered and weather-resistant, the TPI 550B+ is built to test lines under all field conditions—anywhere, anytime. A built-in speaker and microphone enable hands-free operation and an optional handset can be used in high-noise areas. An optional 12VDC charger/adaptor ensures that the TPI 550B+ is always ready for service. For protection, connectors are secured behind a weather-resistant lid.

## A Test Solution for Every Application

For service turn-up, the TPI 550B+ will reliably:

- Verify customer services for Voice, Data, and Packet (B and D channel) services
- Determine line quality with BER testing (via pre-qualification with LT/NT Emulation Mode)
- Provide dual call support, including dual channel BERT and inter-channel delay testing to make the TPI 550B+ particularly useful in multimedia applications such as video conferencing

## New Enhancements - Added Value

- One of the TPI 550B+ differentiators is the ability to perform an inter-B channel delay measurement, display the results, then run dual BERT at 64K to assure videoconferencing success.
- Other new enhancements include G.821 for BERT, more BERT patterns, and 3.1K audio bearer capabilities. Additional enhancements include test macros, parameter download, AutoSPID, and IDSL testing.

## Troubleshooting

The TPI 550B+ isolates and resolves problems quickly, using selectable interfaces and test modes.

- U and S/T Interface Testing
- U-Monitor capability—An optional U-Monitor interface allows bi-directional monitoring of in-service D-channel signaling messages with storage, on screen LCD display, or RS-232 data port output.
- 2-Wire Interface capability—The TPI 550B+ can test the ISDN network at the 2-wire U interface using 2B1Q line coding and at the 4-wire S/T interface. Testing at these interfaces can include Margin Analysis using selectable dB Loss Pads. LEDs indicate vital information for each interface, including Sync, Active, and Ready status.
- Emulation—Because the TPI 550B+ can emulate the NT1 or the TE (i.e., an ISDN phone), or a combination of the two (NT1/TE), it is capable of testing these elements in isolation—an important problem-solving feature.

*The Interface Connector Panel is secured behind a weather-resistant lid.*



## Detailed Analysis

Analysis of Layers 1, 2 and 3 and D-channel messaging is provided. D-channel messaging is decoded into English and formatted for easy reading when transmitted to a PC or printer via the Data Access Port. With the U-Monitor option, the TPI 550B+ can be placed in-line with customer equipment to monitor and display the active circuit.

## Intelligent Testing™

Intelligent Testing (IT) enhancements for the TPI 550B+ enable you to verify the time-consuming aspects of ISDN turn-up and troubleshooting quickly and easily by simplifying test routines—so the test set does the work for you.

Working in concert with the latest developments in switch technology (i.e., AutoSPID), IT provides capabilities not offered by switches (Auto Bearer Capabilities) or other test sets, including test routines which address specific ISDN applications such as videoconferencing (Auto Answer/Loop, BERT/Inter-Channel Delay Combo).

## ViTL™

Increase the power of your test set with Virtual Test Link (ViTL) software that streamlines and enhances circuit turn-up and maintenance processes by providing remote access to the TPI 550B+. This access allows centrally-located technicians to effectively support technicians in the field—reducing time to turn-up and trouble resolution.

## IDSL Testing

With 128K/144K BER testing speeds selection the TPI 550B+ can be used to turn-up and troubleshoot IDSL circuits. With the U-Monitor option, the TPI 550B+ can recover timing from a CLEC DSLAM for use in testing and troubleshooting IDSL circuits.

## Total Reach™

With the TPI 550B+ ISDN or DDS Total Reach option, the test set can be used in turning-up and troubleshooting Adtran's Total Reach circuits.

## Customer Care

### Technical Support

To complement our instruments and systems, engineers at TTC's Technical Assistance Center offer expert consultation on any technical problem. Call 800-638-2049 or 301-353-1550 between 8 a.m. and 8 p.m. EST, Monday through Friday.

### Training

Our instructors provide practical, hands-on training that can be tailored to your specific needs. Classes are provided at locations across the country, or at a location that you choose.

### Warranty and Repair Service

Customer Care starts with a comprehensive warranty on all mainframes. We also offer extended warranty options, as well as service/calibration plans to meet your unique needs. As part of our ISO-9001 approved quality system, all components are screened before installation and each instrument is rigorously tested before being shipped.

### Software Enhancement Agreement

TTC offers individual software subscription services for the TPI 550B+. This service provides software upgrades, release notices that detail new features and their applications, and complete installation instructions with every software upgrade package. **Visit us on the Internet at [www.ttc.com](http://www.ttc.com).**

### Firmware Enhancement Option

TTC service excellence starts with a three-year hardware warranty. We are dedicated to keeping your test set current by providing firmware upgrades to support evolving service developments through our three-year Firmware Enhancement Option. Your complete satisfaction is our goal and we continually strive to exceed your expectations for product excellence and customer service. As part of our ISO 9001-approved quality system, our instruments are subjected to shock, vibration, and environmental testing prior to design approval. In addition, all instruments undergo full functional testing prior to shipment.

## Specifications

### Interfaces

- U interface 2B1Q
- S/T interface
- Virtual Test Link (ViTL) Remote Control
- U-Monitor – option
- EBS (P-Phone)/POTS interface – option
- Total Reach-ISDN interface – option
- Total Reach-DDS interface – option

### Voice capability

- Hands-free operation & handset interface
- DTMF dialing
- B-channel selection
- Dual call capability
- Selectable call appearance
- Calling party ID
- Speed dialing (10, 30-digit #'s)
- Redial

### Data Capability

- Circuit switched data calls
- Selectable for 56 kbps or 64 kbps
- B and D channel packet data calls
- Dual call capability
- RS-232/DB 9-pin data access port
- Speed dialing (10, 30-digit #'s)
- Redial

### Analysis

- 8-special status LEDs
- Layer 1 states
- Layer 2 (LAPD) states
- Layer 3 (Call Status) states
- Cause messages
- Loopbacks
- D-channel decode monitor (DB-9)
- D-channel message capture/LCD display/state

## Measurements

### ISDN Testing

- Call controls (National, AT&T & NTI Custom)
- Modes: NT1, NT1/TE, TE, LT Emulate, U-Monitor, TR-ISDN
- U-interface: 2B1Q/CRC/FEBE errors/error seconds
- S/T interface: frame/BPV errors/error seconds
- PS1, PS2, PS3 voltage/polarity indicators
- Single and dual channel BERT
- Independent of call set-up
- BER testing patterns (511, 2047, 2<sup>15-1</sup>, 2<sup>20-1</sup>, 2<sup>23-1</sup>, Zeros)
- Supporting PVC service testing
- IDSL testing
- BER testing at 128 kbps & 144 kbps
- Line audio monitor w/speaker
- Timed tests

### Network Loopbacks Supported

- User-configured loopbacks
- Margin testing (dB Loss Pad Selection) U & S/T
- 5ESS BRITL test support
- Parameter download support
- BRIV (Basic Rate Interface Verification) support
- Inter-channel delay (2B)
- Call appearance
- 40 kHz test tone generation
- IT™ Intelligent Testing
- Auto SPID testing
- SPID Query feature
- SPID Guess feature
- Auto video answer & loop mode
- Video macro capability
- Auto bearer capability

- Local testing mode
- Distant testing mode
- IT™ BERT macro feature
- Auto call control detect feature
- Auto CACH (Call Appearance Call Handling) detect feature

### EBS/POTS Testing Option

- Device emulation (EBS)
- Primary or extension phones & add-on units
- Control message decode and english formatted output (EBS)
- Signal level (8 kHz)/(EBS)
- Line voltage (EBS)
- Line resistance (EBS)
- Calling party ID (POTS)
- Place and receive calls
- Sealing current/polarity

### U-Monitor Option

- Capture of D-channel message traffic
- On-screen decode (LCD)
- Store results
- Direct results for external analysis (DB-9)

### Total Reach-ISDN Option

- Emulates the TRI-R Total Reach remote unit
- Span power status
- LED indicators (sync., error, seal. cur., lpbk)
- Responds to EOC loopbacks
- BER testing (511, 2047, 2<sup>15-1</sup>, 2<sup>20-1</sup>, 2<sup>23-1</sup>, zeros)
- Signal level indication

### Total Reach-DDS Option

- Emulates the TRDDS-R Total Reach remote unit
- Span power status
- LED indicators (sync., error, seal. cur., lpbk)
- Responds to loopbacks (CSU, NEI, USW/OCU)
- BER testing (511, 2047, 2<sup>15-1</sup>, 2<sup>20-1</sup>, 2<sup>23-1</sup>, zeros)
- Signal level indication

## General

### Physical

- Hand-held (4.5" W x 9.5" L x 2.5" D)
- Weight: 2.5 lb
- Weather-resistant, ruggedized plastic case with lid
- Quick reference lid label

### Power

- Rechargeable & field-replaceable
- NiCd battery w/AC charger/adaptor
- 8 hours continuous use on fully-charged battery
- Auto shut-off mode
- Power monitor LEDs

### Controls

- Speaker phone w/volume adjust
- Dial pad w/special function keys
- 8-line graphics-capable LCD with backlight and variable contrast
- User-friendly menu selections with soft keys

### Accessories

- Handset
- Test cords
- Soft pack carrying case
- "Heat-Coil" access cord
- Vehicle charger/adaptor

### Firmware

- Field-replaceable (PCMCIA-Style) card

**NOTE:** Specifications, terms, and conditions are subject to change without notice.

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