NetTek® Backhaul T1 or E1 Tester

▶ YBT1E1

▶ Features & Benefits

T1 or E1 Circuit Testing Capability Adds to the Flexibility of the NetTek® BTS Field Tool

User-defined Pattern Sequence Testing and Timed Testing

Verify the Most Important T1 or E1 Characteristics for Field Testing: Signal Level, Line Coding, Frame Sync

Modular Instrument for Handheld NetTek, Which Allows for Easy Future Expansion for New Functions

▶ Applications

Timed T1 or E1 Acceptance Tests

Verification of DS0 Timeslot Configuration

Troubleshooting and Diagnosis of T1 or E1 Alarms and Errors

Affordable, Portable, Ready for the Field

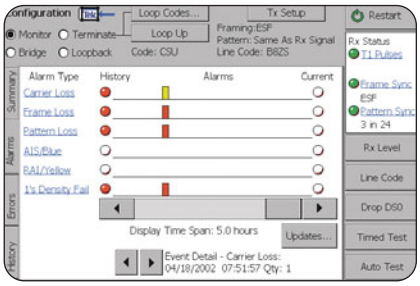
T1 or E1 Circuit Tester for NetTek BTS Field Tool

The Tektronix NetTek Analyzer is a revolutionary portable BTS field tool. The YBT1E1 Backhaul T1 or E1 tester enables mobile operators to troubleshoot the T1 or E1 connection to the base station.

Field Troubleshooting

The YBT1E1 card for the NetTek BTS Field Tool includes the most common measurements needed to uncover T1 or E1 problems affecting a live mobile network. The YBT1E1 can verify the presence and level of T1 or E1 signals. Frame format, synchronization and line coding are displayed.

The YBT1E1 also has the capability to display the alarm and error status of the T1 or E1 span.



The YBT1E1 allows users to gather detail on any of the alarm or error events. Simply touch any of the red events and the instrument provides detail about the network event. This detail includes the number of events and the time of the event, and provides useful information to correlate network logs to field data.

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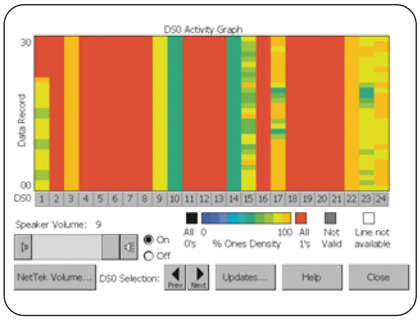
Installation Tests

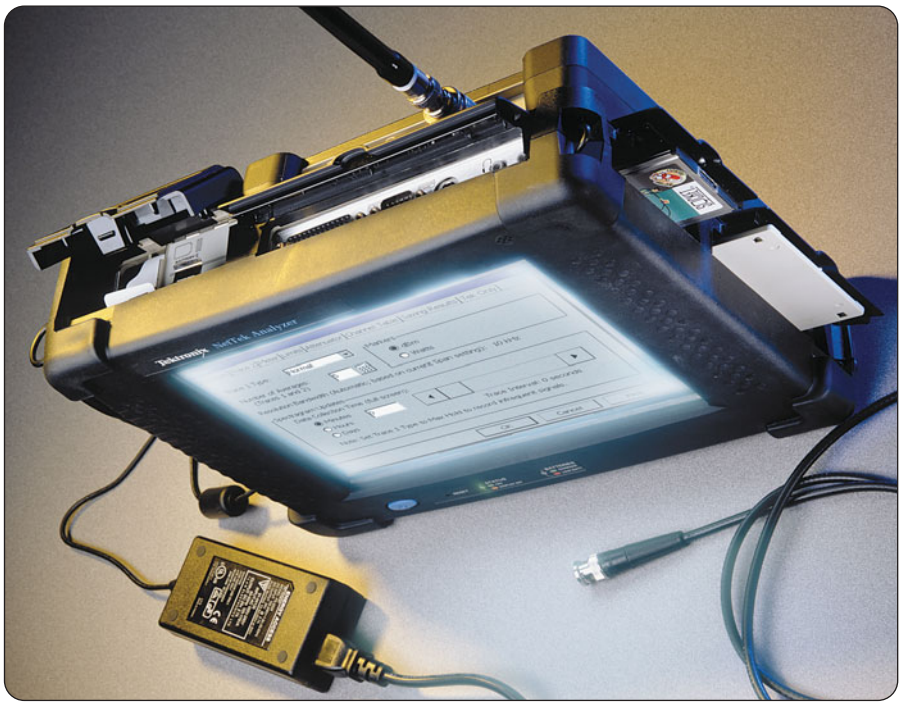
Many of the same tests available for field troubleshooting are also useful for installing the span. The YBT1E1, however, also supports measurements that specifically aid in the acceptance of a new, or repaired, T1 or E1 circuit.

The YBT1E1 provides a "channel gram" feature for monitoring the status of each of the 24 DS0s (forT1) or 32 DS0s (for E1) that make up a T1 or E1. This enables quick verification of data content of the span—this feature is particularly useful for checking the correct configuration of a multiplexed circuit.



The DS0 Activity Graph arranges the DS0s into columns. Time is the vertical axis and different densities are shown with different colors. With this unique feature, users can quickly verify the presence of traffic, signaling channels, etc., and how the data is changing over time.

User-defined multiple-pattern tests can be created with the YBT1E1. These are automated sequences that can be run for minutes, or hours, of performance testing. The sequence for the test and the length of time for each pattern can be selected. These sequences can be saved with a unique filename for future use, including e-mailing to multiple users so that all spans, even those in remote locations, are being tested with the same method.



The Modules and the Platform

The Tektronix NetTek® analyzer platform is required for using NetTek modules and cards. The platform includes the display, power supply, CPU and battery compartments. Modules can be attached to the back of the platform and PC cards (such as the YBT1E1) can be inserted into the PC card slots on the platform. Up to three modules can be attached at once. A variety of modules and options allows you to tailor the instrument to service the standards and interfaces for use in your network.

The modular design also means that the instrument can easily be upgraded. New measurements or standards can be added with software upgrades or with additional modules.

▸ Characteristics

YBT1E1 Measurement Characteristics for T1 Testing

Line Coding –
AMI.
B8ZS.
Framing Modes –
D4 (Superframe).
ESF (Extended Superframe).
Connection Configurations –
Monitor.
Terminate.
Loopback.
Bridge.
Impedance –
100 or 1000 Ω.
Circuit Status Reports –
T1 Pulses.
Line Coding.
Frame ID and Sync.
Pattern ID and Sync.
Alarm Detection –
Blue Alarms.
Yellow Alarms.
Error Detection –
Bit, CRC, Frame, BPV.
Error Insertion –
BPV, Bit Error, Framing, CRC.
Pattern Generation and Detection –
QRSS, 1-in-8, 2-in-8, 3-in-24, T1-1 (Min/Max), T1-2 (Trip Test), T1-3 (54 Octet), T1-4 (120 Octet), T1-5 (53 Octet), T1-6 (55 Octet), T1 Delay, User-defined, All zeros, All ones.
Loopback Codes –
CSU.
NIU.
User-defined.
In-Band or Out-of-Band.
Level Measurements – dBdsx or V_{p-p}.

YBT1E1 Measurement Characteristics for E1 Testing

Line Coding – AMI, HDB3.
Framing Modes –
Double frame: PCM30, PCM31.
Multi-Aframe: PCM30+CRC, PCM31+CRC.
Connection Configurations –
Monitor.
Terminate.
Loopback.
Bridge.
Impedance –
75, 120, or 1000 Ω.
Circuit Status Reports –
E1 Pulses.
Line Coding.
Frame ID and Sync.
Pattern ID and Sync.
Alarm Detection –
Blue Alarms.
Yellow Alarms.
Error Detection – Bit, CRC, Frame, BPV.
Error Insertion – BPV, Bit Error, Framing, CRC.
Pattern Generation and Detection –
PRBS20, PRBs-15, All ones, All zeros, Alternating, 3 in 24, User-defined, DS0 test.
Level Measurements – dBdsx or V_{p-p}.

General Characteristics

Temperature –
Operating: 0 ºC to +50 ºC.
Nonoperating: –40 ºC to +60 ºC.
Humidity –
Operating: 5% to 80% up to 30 ºC; 5% to 35% from 30 ºC to 50 ºC.
Altitude –
Operating: Up to 15,000 ft. (4,570 m).
Nonoperating: Up to 50,000 ft. (15,240 m).
Physical – PCMCIA Type II standard.
Warranty – One year parts and labor.

▸ Ordering Information

YBT1E1 Tester

PC Card without platform. NetTek® analyzer platform is required for using NetTek modules and cards.

Each Includes: YBT1E1 PC card, user manual, Software CD-ROM, RJ48C T1 and E1 dongle, Loopback plug, RJ48C-to-Bantam Y cable.

Additional Accessories

RJ48C T1 or E1 Dongle[*1] – Order 119-7145-00.
75Ω Adapter[*1] – Order 012-1687-00.
User Manual[*1] – Order 070-1664-00.
Software CD-ROM[*1] – Order 063-3834-00.
Standard Connector Kit[*1] – Order 020-2635-00.
RJ48 to Alligator Clip Cable – Order 174-4630-00.

[*1] Also included as standard accessories with YBT1E1.

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▶ YBT1E1

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Our most up-to-date product information is available at:
www.tektronix.com

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