To receive a calibration and/or repair quote-RMA from R.A.E. Services Inc.
Click here>> www.raeservices.com/services/quote.htm

TEREK® 2209

Calibration & Repair
www.raeservices.com

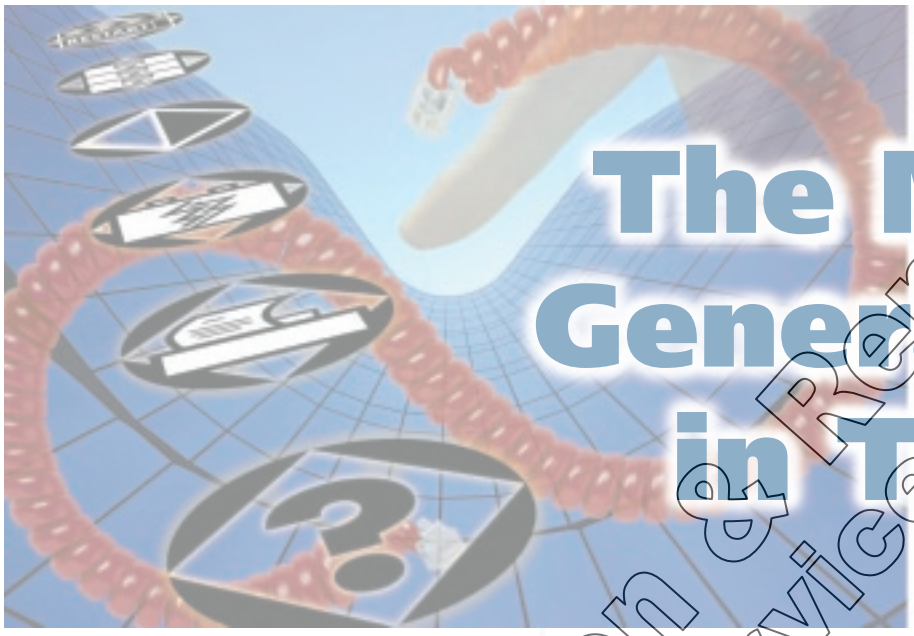
NIST, ISO, IEC, ANSI, NCSL, MIL-STD by www.raeservices.com

To receive a calibration and/or repair quote-RMA from R.A.E. Services Inc.
Click here>> www.raeservices.com/services/quote.htm

Calibration & Repair
www.raeservices.com

NIST, ISO, IEC, ANSI, NCSL, MIL-STD by www.raeservices.com

To receive a calibration and/or repair quote-RMA from R.A.E. Services Inc.
Click here>> www.raeservices.com/services/quote.htm



The Next Generation in Test

Calibration & Repair
www.raeservices.com

For more than a decade, communications service providers have relied on TTC's T-BERD® family of test instruments. Now our development team has created a revolutionary new T-BERD that looks, feels, and performs like no other test instrument available today – the T-BERD 2209.

Designed to help you maintain existing voice and data systems and install new revenue-producing services, the T-BERD 2209 is the unique solution your network demands. Fast, simple, and intuitive – just touch an icon on the screen, and the T-BERD 2209 instantly provides your test results. This easy operation reduces test time, boosts productivity, and minimizes training costs.

The T-BERD 2209 is the latest addition to our new hand-held TTC® 2000 platform. With an innovative touch-screen interface, compact modular architecture, flexible battery-powered operation, and two PCMCIA expansion slots – all in a rugged, field-tested package – the TTC 2000 platform defines the next generation in test.

Highlights

- It's easy to use. The T-BERD 2209's efficient design incorporates a large, icon-driven display – touch an icon to launch a test, and the T-BERD 2209 does the rest
- Protect your investment and maximize your test budget – the unique modular architecture of the new TTC 2000 platform offers unprecedented upgrade potential. And most upgrades can easily be made in the field
- A state-of-the-art nickel metal-hydride (NiMH) battery offers you increased battery life at a lower weight than other battery technologies
- Take advantage of a wide range of PCMCIA memory and communication products. The T-BERD 2209 includes a standard dual PCMCIA interface connection compatible with two Type II or one Type III cards
- Sturdy, yet lightweight, the T-BERD 2209 is designed to meet your requirements for field-ready toughness

NIST, ISO, IEC, ANSI, NCSL, MIL-STD by www.raeservices.com

To receive a calibration and/or repair quote-RMA from R.A.E. Services Inc.
Click here>> www.raeservices.com/services/quote.htm

Fast, Simple, Intuitive

Touch-Screen Graphical User Interface

The applications-oriented graphical user interface (GUI) is based on a powerful combination of touch-screen software and the largest VGA gray-scale display available in any product of its kind. No test instrument has ever been this simple or elegant. Testing is automatic – with one touch, your technicians can have the information they need and be on their way to the next test site.

Field-Replaceable Battery

The unpredictability of field testing demands battery operation. Powered by a state-of-the-art nickel-metal-hydride (NiMH) battery, the T-BERD 2209 goes wherever you need to go. The battery is small and easily accessible – so if it runs low on site, you can install a new one and resume testing in seconds. Advanced software and battery charge hardware allows the battery to charge in either trickle-charge or fast-charge modes.

Advanced Low-Power Technology

The T-BERD 2209 utilizes technology advances in low-power design, high-integration ASICs, and state-of-the-art memory and logic devices to minimize size and maximize battery life. You'll get three hours of uninterrupted battery operation on each charge.

Calibration & Repair
www.raeservices.com

To receive a calibration and/or repair quote-RMA from R.A.E. Services Inc.
Click here>> www.raeservices.com/services/quote.htm

Designed for the Way You Test

Rugged Field-Oriented Design

With more than 20 years of test experience, we know how and where you test. We've constructed the T-BERD 2209 with a tough rubber overmold and a sturdy custom display mounting to protect it against extreme temperatures, vibrations, and mechanical twists. Each instrument is durability-tested to stand up to the on-site conditions you face every day. We guarantee it with our industry-leading three-year warranty, and the service and support you've come to expect from TTC.

Modular Architecture

The T-BERD 2209's TTC 2000 platform sets a new standard for flexibility and future growth potential for lightweight, hand-held test instruments. The T-BERD 2209 application module separates easily from the TTC 2000 platform, so you can quickly plug in other applications as your testing needs change.

Dual PCMCIA Interface

Two PCMCIA slots add to your T-BERD 2209's power and versatility, making it easy to install future software upgrades. And the T-BERD 2209 is designed with non-volatile memory, so the loss of an upgrade card does not put you out of service.

Calibration & Repair
www.raeservices.com

To receive a calibration and/or repair quote-RMA from R.A.E. Services Inc.
Click here>> www.raeservices.com/services/quote.htm

The Logical Choice in Network Testing

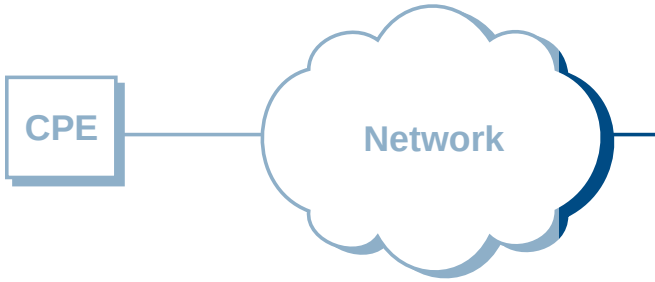
Maintaining telecommunications networks becomes more challenging every day. The industry is changing fast, with new technologies, new competitors, and new network service offerings. You need an instrument designed to simplify testing of today's most complex, far reaching networks. For highly integrated test applications on both the pipeline and service levels, the T-BERD 2209 is the logical choice.

The T-BERD 2209 is designed as a value-added tool to help you install and maintain revenue-earning networks and services quickly, easily, and inexpensively. With just a touch, you'll know that your network is performing as advertised, and you can rest assured that you are offering your customers the highest quality voice and data services available.

Calibration & Repair
www.raeservices.com

Dual-Receiver In-Service Monitoring

Use the dual-receiver capability of the T-BERD 2209 to perform in-service monitoring of both transmit and receive signals simultaneously.

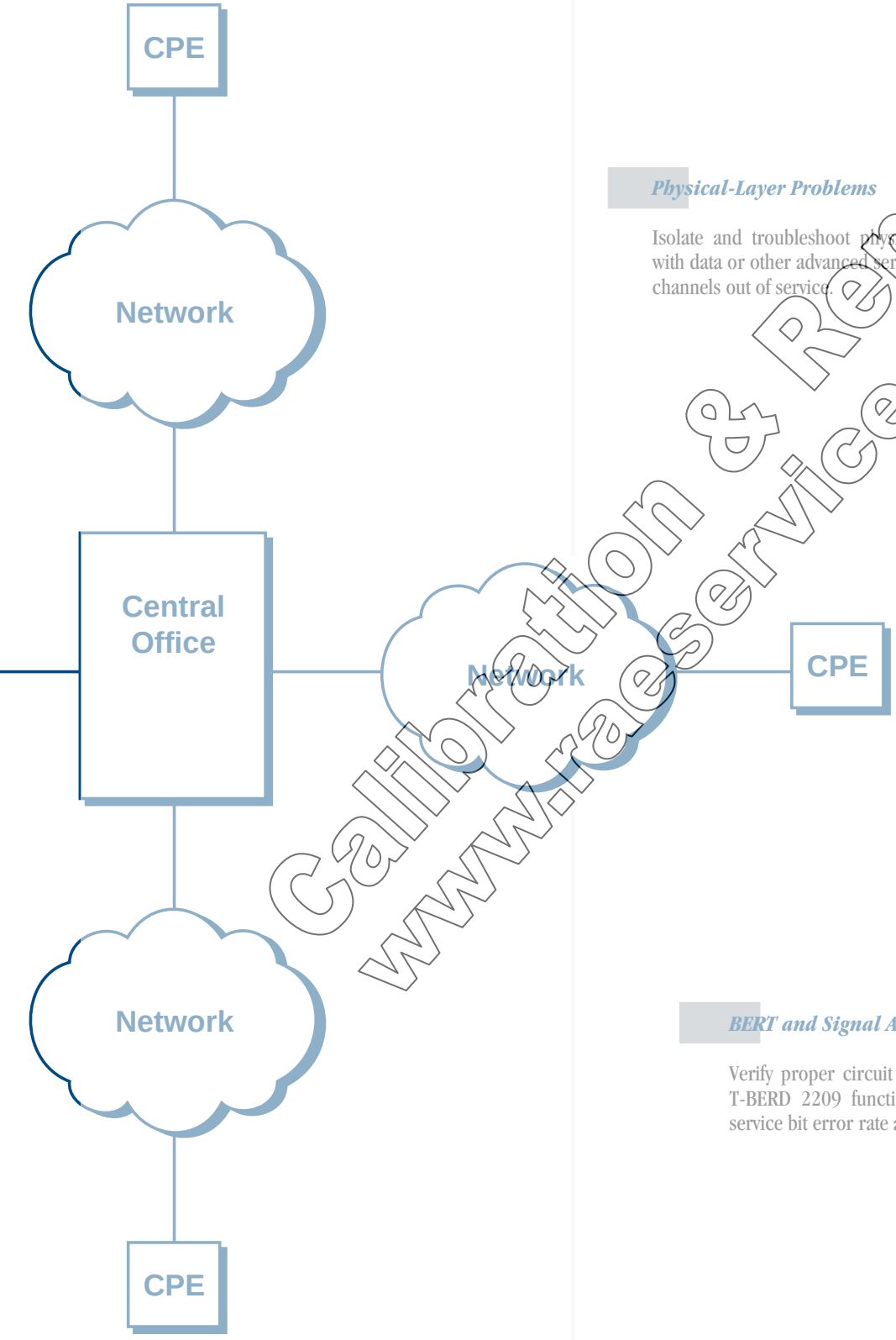


Advanced Timing Analysis

Pinpoint signal delays, timing slips, and mismatches between switch and remote equipment using the advanced timing analysis features of the T-BERD 2209.

NIST, ISO, IEC, ANSI, NCSL, MIL-STD by www.raeservices.com

To receive a calibration and/or repair quote-RMA from R.A.E. Services Inc.
Click here>> www.raeservices.com/services/quote.htm



Physical-Layer Problems

Isolate and troubleshoot physical-layer problems associated with data or other advanced services, without taking unaffected channels out of service.

BERT and Signal Analysis

Verify proper circuit operation throughout the network. The T-BERD 2209 functions include full in-service and out-of-service bit error rate and signal analysis features.

Calibration & Repair
www.raeservices.com

To receive a calibration and/or repair quote-RMA from R.A.E. Services Inc.
Click here>> www.raeservices.com/services/quote.htm

Features

The Right Touch for Telecommunications Testing

For customers deploying voice and data network technologies, the T-BERD 2209 combines essential installation and maintenance test functions in an intelligent, field-ready test instrument weighing less than five pounds.

The touch-screen interface simplifies complex test applications and results information, eliminating configuration errors and misdiagnosis of test results. Field technicians will be able to test effectively the first time, every time. The result is increased user efficiency and productivity and less lost revenue from network downtime.

Dual T1 Interface

Monitor and perform BERT testing in both directions of a circuit simultaneously. Identify and sectionalize circuit problems from network equipment faults. The T-BERD 2209 also provides a full range of signal, alarm, and timing tests to ensure proper performance from your T1 network connections.

Advanced Stress Patterns

Include several of the industry-recommended stress patterns in your circuit acceptance criteria to verify proper network performance. These pre-programmed long user patterns include 55 OCTET and T1 DALY.

VF Channel Access and PCM TIMS

Monitor the voice quality of your network with the internal channel monitor functionality of the T-BERD 2209. Verify individual channels and monitor data or signaling bits without disrupting network traffic. Transmit and measure tones on an individual PCM channel basis utilizing the T-BERD 2209's in-service channel access capabilities - affecting only the channel under test and without impacting other revenue-earning channels.

Fractional T1 Channels

Verify proper network routings and signal delays to ensure all channel signals are terminated properly and with the correct timing. Isolate single-circuit faults in rural locations or on the outer reaches of the service area without knocking out the entire line.

DS3 Testing

DS3 analysis tools let you qualify DS3 circuits with BERT patterns for both M13 and C-bit framing, insert test patterns on one or all DS3 channels, drop DS1 channels from DS3 signals to test and monitor, and verify frame synchronization on DS3 lines.

Signaling

Ensure high quality transmission and signaling performance of T1 voice trunks. Test the ability of a switch/PBX to handle incoming calls and emulate switch-to-switch communications. Place, receive, and monitor calls over several trunk types.

Calibration & Repair
www.raeservices.com

NIST, ISO, IEC, ANSI, NCSL, MIL-STD by www.raeservices.com

To receive a calibration and/or repair quote-RMA from R.A.E. Services Inc.
Click here>> www.raeservices.com/services/quote.htm

TTC Customer Care

When you buy a TTC product, you are getting not just a world-class test instrument, but also unsurpassed TTC service.

Warranty and Repair Service

TTC service excellence starts with a three-year warranty on all mainframes[1] and includes repair and calibration capabilities worldwide. We also offer extended warranty options, as well as customized maintenance/calibration plans. As part of our ISO-9000 approved quality system, all components are screen-tested before installation and each instrument is rigorously tested before being shipped.

Technical Support

To complement our instruments and systems, TTC offers superior technical support. Our engineers offer expert consultation on any technical problem from 8 a.m. to 8 p.m. Monday through Friday, ET (**1-800-638-2049** or **301-353-1550**).

Training

The right technical training can make you more productive and your test instrument more effective. Whether your goal is to shorten installation time, reduce downtime, or increase productivity, TTC's instructors can provide practical, hands-on training tailored to meet your needs, at any location you designate.

Summary

We designed the T-BERD 2209 to be exactly the rugged, portable, easy-to-use test instrument you need to install and maintain revenue-producing networks and services. Your technicians can get test results fast, whenever and wherever they need them. Just press an icon on the large touch-screen interface, and the testing begins, automatically. The battery-operated, hand-held T-BERD 2209 goes easily anywhere your network takes you.

Thank you for your interest in the T-BERD 2209. If you have any questions about TTC, the new TTC 2000 design, or about the T-BERD 2209's features, specifications, and capabilities, call **1-800-638-2049**, talk to your local Sales Engineer, or visit us on the Internet at **http://www.ttc.com**.

Calibration & Repair
www.raeservicesc.com

[1] See product manual for a description of limitations and exclusions.

NIST, ISO, IEC, ANSI, NCSL, MIL-STD by www.raeservices.com

To receive a calibration and/or repair quote-RMA from R.A.E. Services Inc.
Click here>> www.raeservices.com/services/quote.htm

Specifications

Dimensions and Weight

Overall Dimensions:
7.5 x 11.5 x 2.25 in. (19 x 29.2 x 5.7 cm)
Weight:
4.25 lb. (1.93 kg), with battery

Environment

Temperature Range:
Operating:
32°F to 122°F (0°C to 50°C)
Storage:
-40°F to 167°F (-40°C to 75°C)
Humidity:
10% to 90% relative humidity, non-condensing

Power Requirements

AC Adapter:
120 VAC to 18 VDC
Charging Time:
Maximum of 2 hours from full discharge
Battery Type:
10.8 V NiMH
Operating Time:
Typically 3 hours on a full charge (DS1 operation only)
Typically 2 hours on a full charge (DS3 operation only)

Display

One 6-inch diagonal monochrome graphic LCD

Input and Output Connectors

Bantam (4) and RS-232 (printer operation)

Input Impedance

BRIDGE:
≥1000Ω
TERM:
100Ω ±5%
DSX-MON:
100Ω ±5%

Receive Level

BRIDGE or TERM:
+6 to -35 dBdsx
DSX-MON:
+6 to -24 dBdsx (of resistive loss)

Line Build Out (LBO)

Range:
0, -7.5, -15.0, -22.5 dB
Accuracy:
±1 dB at 772 kHz

Transmit Timing Sources

Internal Clock, Recovered Clock

Line Codes

AMI, B8ZS

DS3 Specifications (Optional)

Input and Output Connectors

WECO 560A

Impedance

75Ω, nominal unbalanced to ground

Receiver (Single) Frequency

44.736 Mb/s ±300 ppm

Level (From Output or Monitor Jack)

HIGH:
Accepts Nominal 1.2 Vp, 0 ft of cable from High source
DSX:
Accepts Nominal 0.6 Vp, 450 ft of cable from High source
LOW:
Accepts Nominal 0.3 Vp, 900 ft of cable from High source

Transmitter (Single) Frequency

44.736 Mb/s ±20 ppm

Line Build Out (LBO)

HIGH:
Nominal 1.2 Vp. Signal meets ANSI specification T1.102-1993 and ITU-T G.703 when subjected to 450 feet of cable loss
DSX:
Nominal 0.61 Vp. Signal meets ANSI specification T1.102-1993 and ITU-T G.703
LOW:
Nominal 0.31 Vp

Line Code

B3ZS

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

Copyright 1997, 1999, TTC, a division of Dynatech, LLC. All rights reserved. TTC and T-BERD are registered trademarks of TTC, a division of Dynatech, LLC. All other trademarks and registered trademarks are the property of their respective owners.

Calibration & Repair
www.raeservices.com

NIST, ISO, IEC, ANSI, NCSL, MIL-STD by www.raeservices.com

To receive a calibration and/or repair quote-RMA from R.A.E. Services Inc.
Click here>> www.raeservices.com/services/quote.htm

Calibration & Repair
www.raeservices.com

NIST, ISO, IEC, ANSI, NCSL, MIL-STD by www.raeservices.com

To receive a calibration and/or repair quote-RMA from R.A.E. Services Inc.
Click here>> www.raeservices.com/services/quote.htm

World Headquarters

20400 Observation Drive
Germantown, Maryland 20876-4023 USA
USA 1-800-638-2049 • +1-301-353-1550 • FAX +1-301-353-0234
Canada 1-888-689-2165 • +1-905-812-7471 • FAX +1-905-812-3892
www.ttc.com

North American Offices

United States

Atlanta, Georgia • Chicago, Illinois • Dallas, Texas • Denver, Colorado
East Rutherford, New Jersey • Los Angeles, California
Roanoke, Virginia • San Jose, California

Canada

Calgary, Alberta • Laval, Quebec • Toronto, Ontario
Vancouver, British Columbia

International Offices

Australia	
Melbourne	+61-3-9563-4800
Sydney	+61-2-9936-1447
Benelux	+32-15-28-7686
China	
Beijing	+86-10-6460-5258
Hong Kong	+852-2892-0990
Shanghai	+86-21-6445-8958
France	+33-1-39-60-24-24
Germany	+49-6172-2911-00
United Kingdom	+44-1489-759696
European Freephone	+800-TTC-UKTAC (+800-882-85822)

International Distributors

Argentina • Brazil • Chile • Colombia • Czech Republic
Denmark • El Salvador • Finland • India • Indonesia • Ireland
Israel • Italy • Japan • Korea • Malaysia • Mexico • Norway
Peru • Philippines • Saudi Arabia • Singapore • Slovakia
South Africa • Spain • Sweden • Switzerland • Taiwan
Thailand • United Arab Emirates • Venezuela

Calibration & Repair
www.raeservices.com

TTC™
OPTIMIZING NETWORK PERFORMANCE

ISO 9001 CERTIFIED

NIST, ISO, IEC, ANSI, NCSL, MIL-STD by www.raeservices.com

TB2209-B-3/99