

## Wireless Communications Analyzer



**T**he market leader in innovative test solutions, TTC, has once again set a new standard for testing networks and the services they provide. Our development team has created a revolutionary new product for testing digital wireless networks that looks, feels, and performs like no other test instrument available today — the T-BERD® 2207.

Designed to help you maintain existing PCS-1900 (GSM) systems and install new revenue-producing services, the T-BERD 2207 is the unique solution your network demands. Fast, simple, and intuitive — just touch an icon on the screen, and the T-BERD 2207 instantly provides your test results. This easy operation reduces test time, makes your technicians more productive, and enables you to minimize or even eliminate training costs.

The T-BERD 2207 is the first application module for our new hand-held TTC® 2000 platform. With an innovative touch-screen interface, compact modular architecture, powerful battery-powered operation, and two flexible PCMCIA expansion slots, all in a rugged, field-tested package, the TTC 2000 platform defines the next generation in test.

## Highlights

- It's easy for your technicians to use. The T-BERD 2207's efficient design incorporates a large, icon-driven display — touch an icon to configure and initiate a test, and the T-BERD 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
- 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 2207 includes a standard dual PCMCIA interface connection compatible with two Type II or one Type III cards
- Sturdy, yet lightweight, the T-BERD 2207 is designed to meet your requirements for field-ready ruggedness



## 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 full VGA-compatible gray-scale LCD display technology available in any product of its kind. No wireless 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 associated with field testing demands battery operation. Powered by a state-of-the-art nickel-metal-hydride (NiMH) battery, the T-BERD 2207 goes wherever you need it. The battery is easily accessible — if it runs low, you can pop in 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 2207 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 four hours of uninterrupted battery operation on each charge.

## Designed for the Way You Test

### Rugged Field-Oriented Design

We understand the environment you work in, and we know that you need to have tough, ruggedly built test equipment. The T-BERD 2207 will never let you down. The mechanical enclosure is protected by a rubber overmold to absorb the impact of unexpected falls. In addition, we engineered a custom mounting to house our VGA LCD and touch screen digitizer to protect against unavoidable impacts and mechanical twists. Every instrument is durability-tested to stand up to heat, cold, and vibrations. We guarantee the performance of your instrument with an industry-leading three-year warranty.



### Modular Architecture

The T-BERD 2207's TTC 2000 platform sets a new standard for flexibility and future growth potential for lightweight, hand-held test instruments. The T-BERD 2207 application module separates easily from the TTC 2000 platform so you can plug in other applications as your testing needs change.



### Dual PCMCIA Interface

Two PCMCIA slots add to your T-BERD 2207's power and flexibility. Plus, the standard dual PCMCIA interface makes it easy to download future software upgrades — the T-BERD 2207 is designed with non-volatile memory, so the loss of an upgrade card does not put you out of service.



### Expandable DSP- and RISC-based Architecture

The DSP-based architecture of the T-BERD 2207 provides built-in growth potential for future signal analysis enhancements. Plus, the core processing functionality is managed by a RISC design, protecting your investment against changing standards.

## The Digital Wireless Solution

Installing and maintaining wireless networks becomes more challenging every day. The wireless industry is changing fast, with new technology deployments, new competitors, and new network service offerings. The first wireline test product that specifically targets the needs of digital wireless network field technicians, the T-BERD 2207 is the efficient solution your digital wireless network demands.

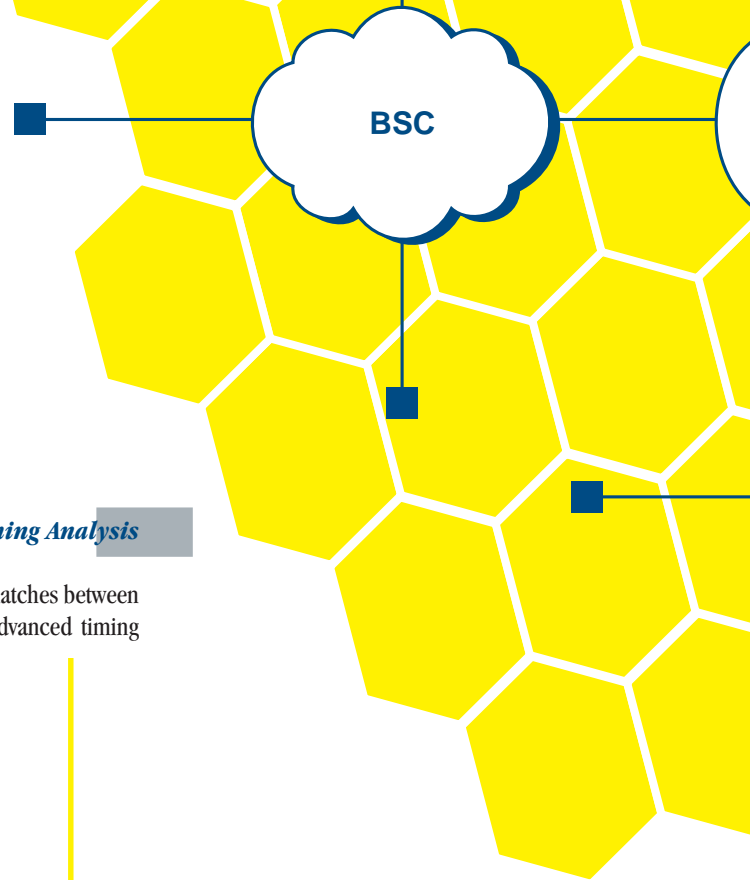
The T-BERD 2207 is designed as a value-added tool to help you install and maintain revenue-earning networks and services. With just a touch, you'll know that your wireless network is performing as advertised, and you can rest assured that you are offering your customers the highest quality personal communications services available.

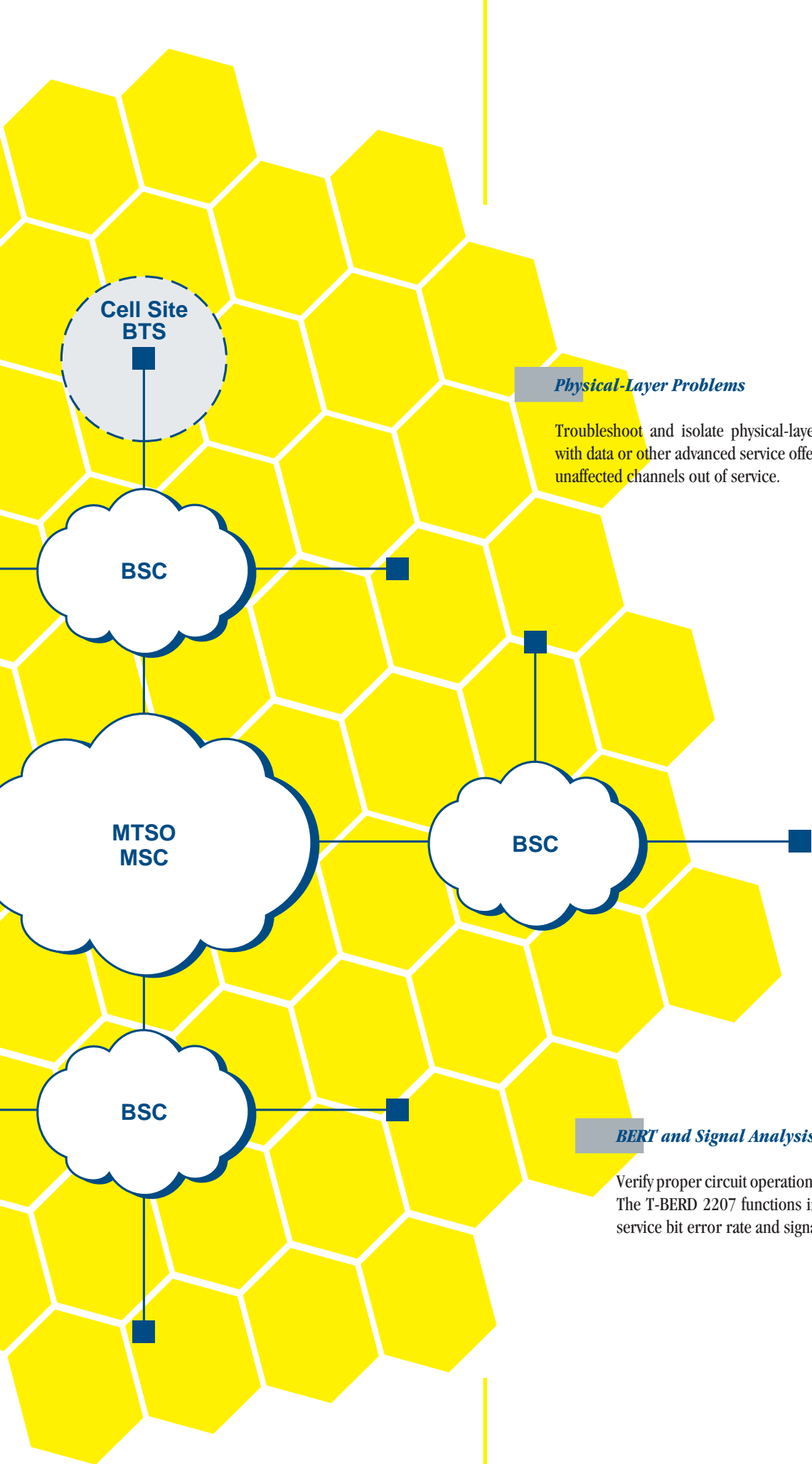
### *Dual-Receiver In-Service Monitoring*

Use the dual-receiver capability of the T-BERD 2207 to perform in-service monitoring of both the transmit and receive signals simultaneously.

### *Advanced Timing Analysis*

Determine and verify the signal delays and mismatches between the switch and remote equipment using the advanced timing analysis features of the T-BERD 2207.





***Physical-Layer Problems***

Troubleshoot and isolate physical-layer problems associated with data or other advanced service offerings — without taking unaffected channels out of service.

***BERT and Signal Analysis***

Verify proper circuit operation throughout the wireless network. The T-BERD 2207 functions include full in-service and out-of-service bit error rate and signal analysis features.

## The Right Touch for Wireless Testing

For customers deploying digital wireless network technologies, the T-BERD 2207 combines essential installation and maintenance test functions in an intelligent, field-rugged 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. Your field technicians will be able to test effectively the first time and every time. The result is increased user efficiency and productivity and less lost revenue from network down time.

### Dual T1 Interface

Monitor and perform physical-layer BERT testing in both directions of a circuit simultaneously. Identify and sectionalize leased-line circuit problems from switch and base station network equipment faults. The T-BERD 2207 provides a full range of physical-layer, signal, and timing test functionality 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 for compressed voice signals. The stress patterns emulate signals similar to those derived from digital compression techniques.



### VF Channel Access and PCM TIMS

Monitor the voice quality of your network with the internal channel monitor functionality of the T-BERD 2207. 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 2207'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 location faults on circuits with multiple location terminations — a growing application in rural locations or areas on the edge of service deployment.

### PCS-1900 (GSM) VF Channel Monitor

Verify proper voice quality on compressed sub-channels of new PCS-1900 (GSM) digital networks. Isolate and sectionalize problems between the switch and base station network equipment with this unique functionality of the powerful T-BERD 2207.

## 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<sup>1</sup> 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 screened 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 down time, 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 2207 to be exactly the rugged, portable, easy-to-use, test instrument you need to install and maintain revenue-producing wireless 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 2207 goes easily anywhere your digital wireless network takes you.

Thank you for your interest in the T-BERD 2207. If you have any questions about TTC, the new TTC 2000 design or about the T-BERD 2207'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>.

<sup>1</sup> See product manual for a description of limitations and exclusions.



## 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 lbs. (1.93 kg), with battery

### Environment

Temperature Range:  
Operating:  
32° to 122°F (0° to 50°C)  
Storage:  
-40° to 167°F (-40° 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 to 4 hours on a full charge

### Display

One 6-inch diagonal monochrome graphic LCD

### Input and Output Connectors

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

### Input Impedance

BRIDGE:  
 $\geq 1000\Omega$   
TERM:  
 $100\Omega \pm 5\%$   
DSX-MON:  
 $100\Omega \pm 5\%$

### Input Frequency Range

1.544 MHz  $\pm 5000$  Hz

### 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:  
 $\pm 1$  dB at 772 kHz

### Transmit Timing Sources

Internal Clock, Recovered Clock

### Line Codes

AMI, B8ZS

TTC  
Expect  
Excellence®

Sales Offices

### **TTC United States**

California, Colorado, Georgia, Illinois,  
Maryland, New Jersey, Texas, Washington

### **TTC Subsidiaries**

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