Digital Data Communication Test Equipment

This Product Survey presents the salient characteristics of digital data communication test equipment marketed by manufacturers and sales/leasing firms for general-purpose data transmission applications. The models presented in this survey test data communication terminal equipment (DTE), data circuit terminating equipment (DCE), and conventional voice-grade or wideband transmission facilities, including the public telephone network (DDD), dedicated (leased) lines, and private facilities provided by either the user or telephone company, which can include metallic circuits and coaxial cable. This edition of the Product Survey presents specifications and pricing on over **120 test equipment models** marketed by **36 vendors.**

Listings in this Survey are arranged alphabetically by vendor name, then by specific test equipment model. Each model entry is further divided into 8 logical categories that define application, device type, packaging, functions, parameters, characteristics, features and options, and pricing and service support. Specific topic areas within each section are further delineated with a solid dot (●). The Test Equipment Outline table below is a quick reference guide to vendors whose product parameters match specific user requirements. The Test Equipment Outline parameters define the tester type, equipment operation, packaging, interface and protocol supported, detection features, data rates supported, and special features.

DIGITAL DATA COMMUNICATION TEST EQUIPMENT OUTLINE

VENDOR	Passive Line Monitor	Interactive Line Monitor	Breakout Box/Loopback Tester	BERT/BLERT Tester	Other Digital Testers	Hand-held/Standalone	Portable	Rackmount	DTE/DCE Interface Testing	Error Rate Testing	Bit-Oriented Protocol	Byte-Oriented Protocol	DTE/DCE Simulation	9600 bps Maximum	19.2K bps Maximum	56K bps Maximum	Over 56K bps	Integral Recorder	External Recorder	Programmable	Trapping	Masking	Event Counters/Markers	Bit/Shift/Inverse/Reverse
Astrocom	●	●	●	●	—	—	●	●	●	●	●	●	●	—	●	—	●	●	—	●	●	●	●	—
Atlantic Research	—	—	●	●	—	●	●	—	●	●	—	●	—	—	●	—	—	—	—	—	—	—	—	—
Black Box Catalog	—	—	●	—	—	●	—	—	●	—	—	—	—	●	—	—	—	—	—	—	—	—	—	—
Carroll Touch Tech	—	—	●	—	—	●	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Com/Tech Systems	—	—	●	●	—	—	●	—	●	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convex	—	—	●	●	—	—	●	●	●	●	—	—	—	—	—	●	—	—	—	—	—	—	—	—
Craig Data Cable	—	—	●	—	—	●	—	—	●	●	—	—	—	—	—	●	—	—	—	—	—	—	—	—
Datacomm Mgmt Sciences	—	—	●	●	—	—	●	—	●	●	—	—	—	—	—	●	—	—	—	—	—	—	—	—
Datacom Northwest	—	●	●	●	●	●	—	—	●	●	●	●	●	—	●	—	—	—	—	—	●	—	—	—
Datatel	—	●	—	—	—	—	●	—	—	—	—	—	●	—	—	—	●	—	—	—	●	—	—	—
DEI Teleproducts	—	—	●	—	—	●	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Digilog	—	●	●	●	—	—	●	—	●	●	●	●	●	—	●	●	●	●	●	●	●	●	●	●
Digitech	●	●	●	●	—	—	●	—	●	●	●	●	●	—	●	—	●	●	●	●	●	●	●	●
Dynatech	—	●	●	●	—	—	●	●	●	●	●	●	●	—	—	●	●	●	—	●	●	●	●	●
Dynatech Packet Tech	—	●	—	—	—	—	●	—	—	—	●	●	●	●	—	—	—	●	—	●	●	—	—	—
Edge Instrument	—	—	—	●	●	●	—	—	—	●	—	—	—	●	—	—	—	—	—	—	—	—	—	—
Electrodata	—	●	●	●	—	●	—	—	●	●	●	●	●	—	●	—	—	—	—	—	●	●	●	—
Epicom	●	—	●	●	—	—	●	●	●	●	●	●	—	—	—	—	●	—	—	●	●	—	●	—
Gandalf Data	—	—	—	●	—	—	●	●	—	●	—	—	—	—	●	—	—	—	—	—	—	—	—	—
General Datacomm	—	—	—	●	—	—	●	●	—	●	—	—	—	—	—	—	●	—	—	—	—	—	—	—
Halcyon	●	●	●	●	—	—	●	—	●	●	●	●	●	—	●	—	—	●	—	●	●	●	●	●
Hard Engineering	—	●	●	●	—	—	●	—	●	●	●	●	●	—	—	—	●	—	—	●	●	●	—	—
Hewlett-Packard	—	●	●	—	—	—	●	—	●	—	●	●	●	—	●	—	●	●	—	●	●	●	●	●
Idacom	—	●	●	●	—	—	●	—	●	●	●	●	●	—	●	—	●	●	—	●	●	●	—	●
Infotron	—	—	●	●	—	—	●	—	●	●	—	—	—	—	●	—	—	—	—	—	—	—	—	—

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VENDOR	DEVICE TYPE: Passive Line Monitor	Interactive Line Monitor	Breakout Box/Loopback Tester	BERT/BLERT Tester	Other Digital Testers	PACKAGING: Hand-held	Portable/Standalone	Rackmount	TEST FUNCTION: DTE/DCE Interface Testing	Error Rate Testing	Bit-Oriented Protocol	Byte-Oriented Protocol	DTE/DCE Simulation	DATA RATE: 9600 bps Maximum	19.2K bps Maximum	56K bps Maximum	Over 56K bps	FEATURES: Integral Recorder	External Recorder	Programmable	Trapping	Masking	Event Counters/Markers	Bit Shift/Inverse/Reverse
Int'l Data Sciences	—	●	●	●	—	●	●	—	●	●	●	●	●	—	●	—	—	●	●	●	●	—	—	—
Kapusi Labs	—	—	●	●	—	●	—	—	●	●	—	—	—	—	●	—	—	—	—	—	—	—	—	—
Multi-Tech	—	—	●	—	—	●	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Navtel	—	—	●	—	—	●	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
No Telecomm/Spectron	—	●	●	●	—	—	●	●	●	●	●	—	●	—	●	●	●	●	●	●	●	●	●	●
Nudata Corp	●	—	●	●	—	●	●	—	●	●	●	●	—	●	●	—	●	—	—	●	●	—	—	—
Phoenix Microsystems	—	●	●	●	—	●	●	—	●	●	—	●	●	—	—	—	●	—	—	●	●	●	—	—
RVS Electronics	—	—	●	—	—	●	—	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tektronix	—	●	●	●	—	—	●	—	●	●	●	●	●	—	●	—	—	—	—	●	●	●	—	●
Telebyte Tech (Remark Datacom)	—	—	●	●	—	●	●	—	●	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Universal Data Systems	●	●	●	●	—	—	●	—	●	●	●	●	●	—	●	—	—	●	●	●	●	●	●	●

DIGITAL DATA COMMUNICATION TEST EQUIPMENT FEATURES

Application

This Feature Section defines the diagnostic application addressed by the test equipment. There is a broad spectrum of conditions that lead to network performance degradation or outright failure, impairing or disrupting normal communication activity. Abnormal conditions can result from failures or degradation within data terminal equipment (DTE) or data circuit terminating equipment (DCE), or from degradation or failures in the transmission facility; e.g., telephone lines. Abnormalities can also result from communication software or protocol errors. Isolating a network failure and determining its exact cause can be a frustrating, and almost impossible task, and can result in excessive downtime without the appropriate test equipment. However, no one piece of test equipment diagnoses all types of failures, although some diagnose more failure conditions than others.

Software & Protocol Failure Analysis • these failures are most effectively diagnosed by a line monitor (protocol analyzer). Line monitors typically provide a display screen which allows a questionable transmission stream from a device or communication line to be observed for discrepancies. Both data and control characters are displayed for analysis and the monitor can "look" at either the send or receive side of the line; most look at both sides simultaneously. Most monitors can capture or "trap" a user-selected segment of a transmission stream for close analysis; some monitors are available with an integral or external recording device, typically a cassette tape or diskette drive for extensive storage of questionable transmissions, and also to store and run vendor-supplied or user-created diagnostic programs. Monitors are available as a **passive** or **interactive** device. Passive line monitors can only monitor the transmission stream, while interactive monitors send test messages, and can simulate modem, terminal, or CPU.

Detection & Isolation of Performance Degradation or Failures • line or equipment degradation or failure can be diagnosed by bit or block error rate testing (BERT/BLERT). A pseudo-random test pattern is generated by the test equipment and transmitted over a line or to a DTE or DCE device; the test pattern transmission path is returned (**looped back**) at some point, and the returned test pattern is compared to the original for accuracy. Bit errors between the original and the looped-back pattern are defined as the **bit error rate**, which can indicate performance degradation in equipment or a communication line. Of course, no pattern is returned in the case of a failure, such as a line outage. This test

method offers a simple means for determining performance degradation or failure, but does not determine the exact nature of the abnormality.

DTE/DCE Interface Signal Failure Analysis • abnormalities or failures within the electrical interface between data terminal equipment (DTE) and data circuit terminating equipment (DCE) can be determined by an EIA breakout box (BOB). This device, typically hand-held, connects between the digital DTE and DCE interface cables and indicates the presence (or absence) of the various control, clock, and data signals via LEDs, which monitor the individual interface leads. These devices usually include a test point for each DTE and DCE lead to connect external test equipment, or to reconfigure (crosspatch) leads for testing. And the devices typically include switches to disconnect the signal path between corresponding DTE/DCE leads for testing and lead reconfiguration. Most breakout boxes accommodate the ubiquitous RS-232C interface; some also accommodate other standard interfaces such as RS-449, etc.

Some vendors combine bit error rate (BERT) testing with their breakout boxes. And some vendors combine EIA breakout panels with their line monitors.

Device Type

This Feature Section defines the category to which the specific model tester belongs. It also identifies salient characteristics of the tester paramount to its description.

Line Monitor/Protocol Analyzer • displays a transmission stream received from a DTE or DCE for visual analysis • used for troubleshooting, software development, system integration, and performance monitoring • **passive** device monitors only; **interactive** device monitors and transmits test messages and also simulates DTE or DCE • **bit-/byte-oriented** defines protocol accommodated; some line monitors can only accommodate byte-oriented protocol such as BSC, others can only **monitor** bit-oriented protocol (HDLC/SDLC), while others can both monitor and transmit bit-oriented protocol messages • **programmable** defines vendor-supplied or user-created diagnostic programs; **menu programmable** defines the use of a displayed menu for establishing test equipment operating parameters • **integral/external storage** refers to a recording device such as cartridge tape or diskette storage, and its capacity to capture and store transmission for analysis, or to store diagnostic programs.

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DTE/DCE Interface Breakout Box • displays signal activity on individual DTE and DCE digital interface leads • used to diagnose "handshaking" failures or abnormalities or to reconfigure leads within the interface.

Bit/Block Error Rate Tester (BERT/BLERT) • transmits pseudo-random test pattern to determine communication integrity of DCE, DTE, or communication facility • compares returned (looped-back) pattern with original to detect errors • can be used end-to-end with second BERT/BLERT • sometimes combined with breakout box or line monitor/protocol analyzer.

Packaging

This Feature Section defines the physical packaging of the tester model.

Handheld • device fits in hand for mobile testing.

Portable • device is designed to be hand-carried for field testing.

Standalone • device is self-contained unit for tabletop placement.

Rackmount • device is designed for rackmount installation in standard 19-inch rack • typically used at central site.

Functions

This Feature Section defines the principal functions performed by the tester model.

Line Monitor/Protocol Analyzer • displays the content of monitored transmissions from data terminal equipment (DTE) or data circuit terminating equipment (DCE) without interfering with communication activity • captures user-defined or condition-associated transmission segment in RAM memory for visual analysis; user-defined **trap sequence** and byte- or bit-mask typically entered via hexadecimal keypad, captures specific transmission segment; trap sequence **masked** by "don't care" characters or bits; masked positions ignored; **bit matching** defines key bit positions in trap sequence • also captures **specific** transmission segment associated with user-defined triggers, such as interface signal changes • interactive mode transmits vendor- or user-defined test message, or standard FOX message to establish operating integrity of data terminal equipment; simulates DTE or DCE • integral or external storage device captures transmissions from line or RAM memory • **event counters** and **interval timers** count user-defined signal- or protocol-related events and **time** the interval between events (typically in milliseconds) • **event triggers** initiate user-defined action upon the occurrence of user-defined conditions • error checking • bit/block error rate testing (BERT/BLERT) via pseudo-random test patterns • EIA interface breakout testing/reconfiguration.

DTE/DCE Interface Breakout Box • monitors individual leads of DTE and DCE (digital) electrical interface for signal absence or level changes; displays signals for analysis, usually via LEDs • supports external testing via test points for individual signal leads • supports DTE/DCE signal lead reconfiguration through patching and switching.

Bit/Block Error Rate Tester (BERT/BLERT) • generates pseudo-random test pattern; compares received pattern with that generated to detect bit errors; long test patterns simulate message block • indicates bit/block error rate.

Parameters

This Feature Section defines the communication parameters supported by the tester.

Asynchronous • start-stop transmission • information transmitted or received 1 character at a time with 1 start and 1 or 2 stop bits framing the character.

Synchronous • transmits information in a continuous stream blocked by sync characters and error codes.

Half-Duplex • 2-way transmission between 2 points, but in only 1 direction at a time.

Full-Duplex • 2-way simultaneous transmission between 2 points.

Protocol • established set of rules which determine the type of data structures passed between devices.

Electrical Interface • the connection between data terminal equipment (DTE) and data circuit terminating equipment (DCE); i.e., the modem. The interface passes digital data and control signals between the devices, but can differ electrically depending on the application.

EIA Standard RS-232C • the most common electrical interface standard used throughout the industry; however, **exact conformation** to the standard is **typically not followed** by vendors because most vendor products use only the connections necessary for operation and because some connections are used for functions that differ among vendor products. The RS-232C interface supports transmission at data rates up to 20K bps at distances up to 50 feet between DTE and DCE; a 25-pin connector is used to connect DTE to DCE. The interface is designed around EIA standard **RS-423**, an unbalanced voltage digital interface circuit.

EIA Standard RS-449 • an improved interface standard that supercedes the EIA Standard RS-232C. The RS-449 Standard is compatible with RS-232C, but supports higher data rates at greater distances. The RS-449 interface supports transmission at data rates up to 2M bps at distances up to 200 feet between DTE and DCE; separate 37-pin and 9-pin connectors are used to cable-connect DTE to DCE. The additional connections provided by RS-449 implement more control functions. The improved operating parameters of EIA Standard RS-449 are the result of improved dicruit interface standard **RS-422**, a balanced voltage digital interface circuit. RS-449 also supports the optional use of the unbalanced interface standard, **RS-423** at data rates of 20K bps and below in place of RS-422.

MIL-STD-188C • an electrical interface standard for military equipment.

Current Loop • an electrical interface that employs telegraph technology. Data is transferred in the form of current pulses at rates up to 150 bps. Two signaling standards exist, neutral or unipolar, in which signaling is performed by switching DC current on or off; and polar or bipolar in which signaling is performed by positive or negative DC current pulses. Signal current standards are 20, 40, or 60 mA. Current transmission has been traditionally used for message communications via teletypewriters such as those produced by Teletype.

TTL • transistor-to-transistor logic. An industry-standard, digital, noncommunication interface used to connect 2 digital devices. Often employed with plug-in modems, connecting the modem directly to the personal computer data bus.

CCITT V.10 (X.26) • electrical characteristics for unbalanced double-current interchange circuits for general use with integrated circuit equipment.

CCITT V.11 (X.27) • electrical characteristics for balanced double-current interchange circuits for general use with integrated circuit equipment.

CCITT V.24 • an international interface specification established by CCITT international standards committee. The specification is closely compatible with the EIA Standard RS-232C.

CCITT V.28 • electrical characteristics for unbalanced double-current interchange circuits operating at data rates below the limit of 20K bps.

CCITT V.35 • an international interface specification established by CCITT for data transmission rates above 20K bps, specifically 48K bps; for wideband modems.

CCITT X.20 • an international interface specification established by CCITT for DTE/DCE interfaces designed for start-stop (asynchronous) transmission services on public data networks; 15-pin connector; DCE circuits comply to CCITT X.26 (V.10); DTE circuits comply to X.26, X.27 (V.11) (without cable termination load), or V.28.

CCITT X.21 • an international interface specification established by CCITT for DTE/DCE interfaces designed for synchronous operation on public data networks; 15-pin

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connector; DCE circuits comply to CCITT X.27 (V.11) without cable termination in load; DTE circuits comply to X.26 (V.10) or X.27 without cable termination in load.

Characteristics

This Feature Section defines the principle characteristics of the test equipment.

Jacks/Test Points Switches • associated with electrical interface breakout boxes or panels • indicates the number and types of connections available to attach user-supplied test equipment • defines switches.

CRT Screen • associated with line monitor/protocol analyzer or specified analog testers • visually displays transmitted information or parameters of communication facility under test • display format and capacity defined.

Keypad or Keyboard • associated with line monitor/protocol analyzer • defines the keyboard or keypad used in the equipment • hex keypad enters hexadecimal character codes; ASCII keyboard enters ASCII character codes • touch-sensitive keys imply membrane keypad/keyboard.

Features/Options

This Feature Section lists all the special standard features and extra-cost options of the designated test equipment. Features are defined as standard items included in the cost of the basic unit; options are extra-cost features.

Cost/Service

This Feature Section provides basic and full-featured purchase pricing. Service is defined as factory or depot service. Hot-line diagnostic centers are mentioned where applicable.

DIGITAL DATA COMMUNICATION TEST EQUIPMENT LISTINGS

■ ASTROCOM CORPORATION

120 West Plato Boulevard, St. Paul, MN 55107 • 612-227-8651.

□ Mini Check

Application • detection and isolation of performance degradation or failures in DTE, DCE, or communication line • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box with bit error rate tester (BERT).

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 DTE/DCE interface leads via LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface • performs bit error rate testing (BERT); transmits 511-, or optional 2047-bit pseudo-random test pattern; error injection; alternate mark space; steady mark; steady space • displays error count.

Parameters • asynchronous/synchronous; half-/full-duplex; selectable clock rates; asynchronous at 300/1200 bps; optional 150/600 and 300/600 bps; synchronous external clock rates up to 24K bps • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 5 LED indicators for CD, RD, CTS, +volts, –volts; 2-digit display for error count • 12 pin-jacks test points connected to specific DTE/DCE interface leads via jumper cables.

Features/Options • battery recharger and carrying case options.

Cost/Service • $395 purchase full-featured unit • quantity discounts • 1-year warranty • factory service.

□ Maxi Check

Application • detection and isolation of performance degradation or failures in DTE, DCE, or communication line • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box with bit error rate tester (BERT).

Packaging • portable unit.

Functions • monitors EIA RS-232C/CCITT V.24 DTE/DCE interface leads via LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption/connection between corresponding DTE/DCE interface • performs bit error rate testing (BERT); transmits 511-bit pseudo-random test pattern with/without start/stop bits; FOX message generator; user-keyed test message up to 50 characters; alternate mark space (50-character data trap holds characters (hexadecimal) programmed from operator-loaded trigger) • displays error count.

Parameters • asynchronous/synchronous; half-/full-duplex; selectable asynchronous rates at 110/134.5/150/200/300/ 600/1200/1800/2400/3600/4800/7200/9600 bps; synchronous rates up to 19.2K bps • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 6 LED indicators for CD, RD, CTS, SYNC, +volts, –volts; 4-digit display for error count and programming data trap • 14 pin-jacks test points connected to specific DTE/DCE interface leads via jumper cables.

Features/Options • battery recharger • ability to check sync terminals.

Cost/Service • $995 purchase basic unit • quantity discounts • 1-year warranty.

■ ATLANTIC RESEARCH CORPORATION (ARC)

5390 Cherokee Avenue, Alexandria, VA 22314 • 703-642-4000.

□ Comstate 1

Application • software and protocol failure analysis • DTE/DCE interface signal failure analysis • detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type • interactive line monitor/protocol analyzer • bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode • programmable via menu-selectable, user-created diagnostic programs and optional vendor-supplied diagnostic programs • menu-selectable operating parameters • user programs created via menu-selected state diagram conditions; 32 states per test; 16 concurrent conditions per state.

Packaging • portable unit with carrying case.

Functions • monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 448 characters • downline loads program parameters to remote monitor • continuously displays transmission as received; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers • 8-character maximum trap start sequence; 8-character maximum stop trap sequence; traps up to 32K characters starting at beginning of capture memory • trap sequence character or bit masking; maximum mask (don't care) 8 characters; 64 bits; bit matching • performs odd/even parity, LRC, CRC, VRC error checking • stores lead status of 15 DTE/DCE interface leads • bit/block error rate test (BERT/BLERT); transmits 511-bit, 2047-bit pseudo-random test pattern; FOX message; user-keyed test message up to 128 characters • DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for 10 leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

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Parameters • asynchronous, synchronous, isochronous, half- or full-duplex; internal clock rates up to 28.8K bps; external clock to 64K bps • ASCII, EBCDIC, Baudot, IPARS, user-selected code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; X.25 HDLC, X.21, SDLC, SDLC NRZI, IPARS, ASCII user-selected protocol • RS-232C/CCITT V.24 and X.21 DTE/DCE interface.

Characteristics • 5-inch (diagonal) CRT screen; 640 character positions; 32 characters per line by 18 lines plus 2 status lines • displays in hex or alpha; displays receive and transmit data concurrently via alternate lines; transmit or receive data identified via reverse video, underline, or blinking • hex/alpha tactile keyboard • RS-170 composite video output for external CRT monitor • 32K-character capture memory; 610-character output buffer • RS-232C.

Features/Options • event triggers • memory expansion options for test routines, setups, and data.

Cost/Service • $5,900 purchase basic unit; $7,130 purchase full-featured unit • quantity discounts • 1-year warranty • factory service.

☐ Comstate II

Application • software and protocol failure analysis • DTE/DCE interface signal failure analysis • detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type • interactive line monitor/protocol analyzer • bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode • contains integral cartridge tape storage; 600K-character capacity • programmable via menu-selectable, user-created diagnostic programs and vendor-supplied diagnostic programs • menu-selectable operating parameters • user programs created via menu-selected state diagram conditions; 128 states; program linking.

Packaging • portable unit with carrying case.

Functions • monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 1024 characters • downline loads program parameters to remote monitor • continuously displays transmission as received, selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers • 128-character maximum trap start sequence; 128-character maximum stop trap sequence; traps up to 32K characters starting at beginning of capture memory • trap sequence character or bit masking; maximum mask (don't care) 128 characters; 1024 bits; bit matching • records from line or capture memory; trigger-selective recording via DTE/DCE interface signal changes via character sequence, via search by marker, via search by error, via clock • performs odd/even parity, LRC/CRC/CCITT error checking • stores lead status of 15 DTE/DCE interface leads • bit/block error rate test (BERT/BLERT); transmits 511-bit, 2047-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 1024 characters • DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for all leads.

Parameters • asynchronous, synchronous, half- or full-duplex; internal clock rates up to 28.8K bps; external clock to 72K bps; record rate to 19.2K bps • ASCII, EBCDIC, EBCD, Hex, Selectric, Baudot, IPARS code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity HDLC, SDLC, SDLC NRZI, IPARS, BSC, ASCII user-selected protocol • RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 7-inch (diagonal) CRT screen; 576/1152 character positions; 32 or 64 selectable characters per line by 18 lines • displays in hex or alpha; displays receive and transmit data concurrently via alternate lines; transmit or receive data identified via reverse video or underline • hex/alpha tactile keyboard • RS-170 composite video output for external CRT monitor • 32K-character capture memory • RS-232C.

Features/Options • event triggers • high-speed capture memory.

Cost/Service • $19,900 purchase basic unit; $23,400 purchase full-featured unit • quantity discounts • 1-year warranty • factory service.

☐ Interview Series 30A Data Analyzer

Application • software and protocol failure analysis • detection and isolation of performance degradation of failures in DTE, DCE, or communication line optional • DTE/DCE interface signal failure analysis.

Device Type • interactive line monitor/protocol analyzer; optional passive line monitor/protocol analyzer • bit-/byte-oriented communication protocol monitor • bit-/byte-oriented interactive mode • programmable via vendor-supplied diagnostic programs; user-created diagnostic programs; menu-selectable operating parameters.

Packaging • portable unit with carrying case • rackmount unit.

Functions • monitors, captures, and displays transmissions received from DTE or DCE • interface for visual analysis • optionally simulates DTE or DCE; interactive mode transmits user-keyed message up to 128 characters • optionally downline loads program parameters to remote monitor • continuously displays transmission as received; selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers • 8-character maximum trap start/stop sequence; traps up to 8K characters starting at end of capture memory • trap sequence character/bit masking; maximum mask 8 characters; 1-bit matching via character sequence • performs odd/even parity; CRC error checking • bit/block error rate test (BERT/BLERT) option; transmits 511-/2047-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 128 characters • DTE/DCE RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for 10 leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters • asynchronous/synchronous; half-/full-duplex; selectable clock rates up to 19.2K bps; external clock to 19.2K bps • ASCII, EBCDIC, Baudot, IPARS code; 5/6/7/8-bit framing; odd/even/no parity, mark, space; transparent to stop bits; HDLC, SDLC, IPARS, BSC, ASCII protocol • RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 5-inch diagonal CRT screen; 512 character positions; 32 characters per line by 16 lines plus 2 status lines • displays in hex or alpha • displays receive and transmit data concurrently; receive data identified via underline; reverse video; dual intensity attributes; alpha; touch-sensitive keyboard • RS-170 composite video output for external CRT monitor • 8K-byte program and data memory • optional RS-232C printer output • 30B incorporates multilayer board construction.

Features/Options • 1 event counter • 1 interval timer • event triggers • options include BERT; printer output; X.25 protocol trace display; ROM and EPROM expansion modules (up to 3 64K-byte RAM modules or 3 16K-byte EPROM modules).

Cost/Service • $2,495 purchase basic unit • quantity discounts • 1-year warranty • factory service.

☐ Interview Series 40B Data Analyzer

Application • software and protocol failure analysis • detection and isolation of performance degradation or failures in DTE, DCE, or communication line • DTE/DCE interface signal failure analysis.

Device Type • interactive line monitor/protocol analyzer passive line monitor/protocol analyzer • bit-/byte-oriented communication protocol monitor • bit-/byte-oriented interactive mode • programmable via vendor-supplied diagnostic programs; user-created diagnostic programs; menu-selectable operating parameters.

Packaging • portable unit with carrying case • rackmount unit.

Functions • monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis • simulates DTE or DCE; interactive mode transmits user-keyed message up

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to 128 characters • optionally downline loads program parameters to remote monitor • continuously displays transmission as received; selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers • 8-character maximum trap start/stop sequence; traps up to 8K characters starting at end of capture memory • trap sequence character/bit masking; maximum mask 8 characters; 1-bit matching • trigger-selective recording via character sequence • performs odd/even parity; CRC error checking • bit/block error rate test (BERT/BLERT); transmits 511-/2047-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 128 characters • DTE/DCE RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for 10 leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters • asynchronous/synchronous; half-/full-duplex; selectable clock rates up to 19.2K bps; external clock to 19.2K bps • ASCII, EBCDIC, Baudot, IPARS code; 5/6/7/8-bit framing; odd/even/no parity, mark, space; 1, 1.5, 2 stop bits; HDLC, SDLC, IPARS, BSC, ASCII protocol • RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 5-inch diagonal CRT screen; 512 character positions; 32 characters per line by 16 lines plus 2 status lines • displays in hex or alpha • displays receive and transmit data concurrently; receive data identified via underline; reverse video/dual intensity attributes; alpha touch-sensitive keyboard • RS-170 composite video output for external CRT monitor • 8K-byte program and data memory • optional RS-232C parallel printer output • multilayer board construction.

Features/Options • 1 event counter • 1 interval timer • event triggers • controls RS-232C interface via menu selection • options include printer output; X.25 protocol trace display; ROM and EPROM expansion modules (up to 3 64K-byte RAM modules, or up to 3 16K-byte EPROM modules).

Cost/Service • $4,200 purchase basic unit • quantity discounts • 1-year warranty • factory service.

☐ Interview Series 3500 Data Analyzer

Application • software and protocol failure analysis • DTE/DCE interface signal failure analysis.

Device Type • interactive line monitor/protocol analyzer • bit-/byte-oriented communication protocol monitor • bit-/byte-oriented interactive mode • contains integral cartridge tape storage; 600K-character capacity • programmable via vendor-supplied diagnostic programs; user-created diagnostic programs; menu-selectable operating parameters.

Packaging • portable unit with carrying case • rackmount unit.

Functions • monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis • simulates DTE or DCE; interactive mode transmits user-keyed message up to 1024 characters • continuously displays transmission as received; selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers • 8-character maximum trap start/stop sequence; traps up to 1920 characters starting at beginning of capture memory • trap sequence character/bit masking; maximum mask 8 characters; 8-bit matching • records from line; trigger-selective recording via DTE/DCE interface signal changes; via character sequence; via search by marker • performs odd/even parity; CRC error checking • stores lead status of 7 DTE/DCE interface leads on tape; error injection • user-keyed test message up to 1024 characters (optional) • DTE/DCE RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for 10 leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters • asynchronous/synchronous; half-/full-duplex; selectable clock rates up to 56K bps; external clock to 56K bps; record rate to 192K bps • ASCII, EBCDIC, Correspondence, Baudot, IPARS code: 5/6/7/8/9-bit framing; odd/even/no parity, 1, 1.5, 2 stop bits; transparent to stop bits; HDLC, SDLC,

SDLC NRZI, IPARS, BSC, ASCII protocol • RS-232C/CCITT V.24, RS-449 optional, CCITT V.35 optional, AT&T 303 optional, Mil-188C optional, 20/40/60-mA current-loop (optional) DTE/DCE interface.

Characteristics • 7-inch diagonal CRT screen; 1920 character positions; 80 characters per line by 24 lines plus 2 status lines • displays in hex or alpha • displays receive and transmit data concurrently via alternate lines; receive data identified via underline; alpha; touch-sensitive keypad • RS-170 composite video output for external CRT monitor • 1920-character program and data memory.

Features/Options • 4 event counters • 2 interval timers • event triggers • options include code sets; 600K-byte cartridge tape drive; special interfaces.

Cost/Service • $8,000 purchase basic unit • quantity discounts • 1-year warranty • factory service.

☐ Interview 3600 Protocol Analyzer

Application • software and protocol failure analysis • DTE/DCE interface signal failure analysis.

Device Type • passive line monitor/protocol analyzer • bit- or byte-oriented communication protocol monitor • contains integral cartridge tape storage; 600K-character capacity • programmable via user-created diagnostic programs • programmable via menu-selectable operating parameters.

Packaging • portable unit with carrying case.

Functions • monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis • dowline loads program parameters to remote monitor • continuously displays transmission as received, selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers • 128-character maximum trap start sequence; 128-character maximum stop trap sequence; traps up to 1920 characters starting at beginning of capture memory • trap sequence character or bit masking; maximum mask (don't care) 128 characters; 1024 bits; bit matching • records from line or capture memory; trigger-selective recording via DTE/DCE interface signal changes, via character sequence, via search by marker, via search by error • performs odd/even parity, LRC/CRC/VRC error checking • stores lead status of 7 DTE/DCE interface leads • DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for all leads.

Parameters • asynchronous, synchronous, half- or full-duplex; internal clock rates up to 19.2K bps; external clock to 72K bps; record rate to 19.2K bps • ASCI, EBCDIC, EBCD, XS-3, Correspondence, Baudot, IPARS, user-selected code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, SDLC NRZI, IPARS, ASCII user-selected protocol • RS-232C/CCITT V.24, CCIT V.35 DTE/DCE interface.

Characteristics • 7-inch (diagonal) CRT screen; 720 character positions; 40 characters per line by 18 lines • hex or alpha; displays receive and transmit data concurrently via alternate lines; transmit or receive data identified via reverse video or underline • touch-sensitive keyboard • RS-170 composite video output for external CRT monitor • 1920-character capture memory; 48K-character program memory • RS-232C.

Features/Options • BCC/protocol control menu • 1M-bit or 4M-bit high-speed capture RAM • multiple program tape • remote program/data transfer • DDCMP protocol analysis.

Cost/Service • $10,000 purchase basic unit; $13,500 purchase full-featured unit • quantity discounts • 1-year warranty • factory service.

☐ Interview Series 3900 Data Analyzer

Application • software and protocol failure analysis • DTE/DCE interface signal failure analysis.

Device Type • passive line monitor/protocol analyzer • bit-/byte-oriented communication protocol monitor • integral cartridge tape storage; 600K-character capacity • programmable

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via user-created diagnostic programs; menu-selectable operating parameters.

Packaging • portable unit with carrying case • rackmount unit.

Functions • monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis • continuously displays transmission as received; selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers • 16-character maximum trap start/stop sequence; traps up to 1920 characters starting at beginning of capture memory • trap sequence character/bit masking; maximum mask 8 characters; 8-bit matching • records from line • trigger-selective recording via DTE/DCE interface signal changes; via character sequence; via search by marker • performs odd/even parity; LRC, CRC error checking • stores lead status of 7 DTE/DCE interface leads on tape; error injection • user-keyed test message up to 1024 characters (optional) • DTE/DCE RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for 10 leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters • asynchronous/synchronous half-/full-duplex; selectable clock rates up to 72K bps; external clock to 72K bps; record rate to 19.2K bps • ASCII, EBCDIC, Correspondence, Baudot, IPARS code; 5/6/7/8/9-bit framing; odd/even/no parity, 1, 1.5, 2 stop bits; transparent to stop bits; HDLC, SDLC, SDLC NRZI, IPARS, BSC, ASCII protocol • RS-232C/CCITT V.24, RS-449 optional, CCITT V.35 optional; AT&T 303 optional, MIL-188C optional, 20/40/60-mA, current-loop (optional) DTE/DCE interface.

Characteristics • 7-inch diagonal CRT screen; 1920 character positions; 80 characters per line by 24 lines plus 2 status lines • displays in hex or alpha • displays receive and transmit data concurrently via alternate lines; receive data identified via underline; alpha touch-sensitive keypad • RS-170 composite video output for external CRT monitor • 1920-character program and data memory • RS-232C; printer output.

Features/Options • 4 event counters • 2 interval timers • event triggers • option strings up to 8 16-character triggers (traps) for a total of 128 characters; option accommodates up to 4 bit masks per trigger; optional multiple program tape stores up to 100 tasks; optional 4M-bit high-speed RAM records at 72K bps.

Cost/Service • $13,300 purchase basic unit • quantity discounts • 1-year warranty • factory service.

☐ Interview 4600 Interactive Test System

Application • software and protocol failure analysis • DTE/DCE interface signal failure analysis • detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type • interactive line monitor/protocol analyzer • bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode • contains integral cartridge tape storage; 600K-character capacity • programmable via vendor-supplied diagnostic programs, user-created diagnostic programs • programmable via menu-selectable operating parameters.

Packaging • portable unit with carrying case.

Functions • monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 1260 characters • downline loads program parameters to remote monitor • continuously displays transmission as received, selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers • 128-character maximum trap start sequence; 128-character maximum stop trap sequence; traps up to 1920 characters starting at beginning of capture memory • trap sequence character or bit masking; maximum mask (don't care) 128 characters; 1024 bits; bit matching • records from line or capture memory; trigger-selective recording via DTE/DCE interface signal changes, via character sequence, via search by

marker, or via search by error • performs odd/even parity, LRC/CRC/VRC error checking • stores lead status of 7 DTE/DCE interface leads • error injection; FOX message; user-keyed test message up to 1260 characters • DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for all leads.

Parameters • asynchronous, synchronous, half- or full-duplex; internal selectable clock rates up to 19.2K bps; external clock to 72K bps; record rate to 56K bps • ASCII, EBCDIC, EBCD, Correspondence, Baudot, IPARS, user-selected code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, SDLC NRZI, IPARS, ASCII user-selected protocol • RS-232C/CCITT V.24, CCITT V.35 DTE/DCE interface.

Characteristics • 7-inch (diagonal) CRT screen; 720 character positions; 40 characters per line by 18 lines • displays in hex or alpha; displays receive and transmit data concurrently via alternate lines; transmit or receive data identified via reverse video, underline • hex/alpha touch-sensitive keyboard • RS-170 composite video output for external CRT monitor • 1920-character capture memory; 48K-character output buffer • RS-232C.

Features/Options • optional DDCMP protocol analysis, high-speed capture memory, and interface adapters.

Cost/Service • $14,500 purchase basic unit; $18,000 purchase full-featured unit • quantity discounts • 1-year warranty • factory service.

■ BLACK BOX CORP (formerly Expandor Inc)

P.O. Box 12800, Mayview Road at Park Drive, Pittsburgh, PA 15241 • 412-746-2910.

☐ Fox Box Message Generator

Application • detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type • test message generator.

Packaging • hand-held unit.

Functions • transmits FOX message; up to 16 user-keyed test message up to 128 characters each preprogrammed into EPROM; standard PROM programs available or custom progammable.

Parameters • asynchronous; 5/6/7/8-bit framing; 1 or 2 stop bits; even/odd parity; transparent to codes and protocols; selectable clock rates at 50/75/110/134.5/150/200/300/600/1200/1800/2400/4800/9600 bps; EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 4 LED indicators for TD/RD, DTR/DSR, CD, and CTS; digit display for switch-selectable operating parameters.

Features/Options • battery operated; includes 4 AA Nicad batteries and battery recharger.

Cost/Service • $455 purchase • quantity discounts • 1-year warranty • factory service.

☐ Quick Test (QT)

Application • DTE/DCE interface signal failure analysis.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 DTE/DCE interface leads via individual LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption/connection between corresponding DTE/DCE interfaces.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 2 LED indicators for high or low measurement of 10 lead positions, measured one-at-a-time; digit display for pins 2/3/4/5/6/8/15/17/20/22; DIP-switch lead selection.

Features/Options • line driven; no batteries or external power source required.

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Cost/Service • $65 purchase • quantity discounts • 1-year warranty • factory service.

☐ Break Out Box (BOB)

Application • DTE/DCE interface signal lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • supports DTE/DCE interface lead reconfiguration and/or interruption/connection between corresponding DTE/DCE interfaces; supports external diagnostics.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 50 pin-jacks test points, 1 per DTE and 1 per DCE interface lead plus 2 extra access jacks for additional connections; includes 56 solder connections for permanent connection.

Features/Options • jumper cables included • metal cover attachment precludes tampering • echoplexer option returns transmitted data to terminal.

Cost/Service • $64.95 purchase basic unit; $99 purchase full-featured unit (with echoplexer option) • quantity discounts • 1-year warranty • factory service.

☐ BOB-9

Application • DTE/DCE interface signal lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors 9-pin DTE and DCE interface leads • supports DTE/DCE interface lead reconfiguration.

Parameters • transparent to codes and protocols • 9-pin DTE/DCE interface.

Characteristics • 18 pin-jacks test points, 1 per DTE and 1 per DCE interface lead for testing or crosspatching.

Features/Options • jumper cables.

Cost/Service • $79.95 purchase basic unit • quantity discounts • 1-year warranty • factory service.

☐ BOB-232-10/-20/-30

Application • DTE/DCE interface signal lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 DTE and DCE interface leads • supports DTE/DCE interface lead reconfiguration • displays RTS/CTS delay in milliseconds.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24, AT&T 303 DTE/DCE interface.

Characteristics • all leads from each connector are terminated on 1 of 2 patching sockets • connectors on Model 232-10 are built-in, 1 male and 1 female; connectors on Models 232-20 and 232-30 are extended on 3.5-inch ribbon cables, Model 232-20 has 1 male and 1 female, Model 232-30 has both a male and a female at each end.

Cost/Service • BOB-232-10: $39.95; BOB-232-20: $49.95; BOB-232-30: $59.95.

☐ BOB-15

Application • DTE/DCE interface signal lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors 15 DTE and DCE interface leads • supports DTE/DCE interface lead reconfiguration.

Parameters • transparent to codes and protocols • 15-pin DTE/DCE interface.

Characteristics • 30 pin-jacks test points, 1 per DTE and 1 per DCE interface lead for testing or crosspatching.

Features/Options • jumper cables.

Cost/Service • $79.95 purchase basic unit • quantity discounts • 1-year warranty • factory service.

☐ Break Out Box—449 (BOB-449)

Application • DTE/DCE interface and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors DTE and DCE interface leads via individual LED indicators; supports DTE/DCE interface lead reconfiguration or external diagnostics.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 6 LED indicators patch to selected leads • 74 pin-jacks test points, 1 per DTE and 1 per DCE interface lead plus spare positions; includes 74 solder connections for permanent connection.

Features/Options • jumper cables included • metal cover attachment precludes tampering.

Cost/Service • $79 purchase • quantity discounts • 1-year warranty • factory service.

☐ SAM 232-10/232-20

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 DTE and DCE interface leads via individual LED indicators.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 7 LED indicators monitor key DTE and DCE interface signals; 1 dual-color, 2 (Model 232-20) spare high/low LED indicators for patching to any line.

Features/Options • jumper cables.

Cost/Service • SAM 232-10: $99; SAM 232-20: $109 • quantity discounts • 1-year warranty • factory service.

☐ SAM 232-30/232-40

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 DTE and DCE interface leads via individual LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 7 LED indicators monitor key DTE and DCE interface signals; 1,4 (SAM 232-40) LED indicators for patching to any line; 4 spare LED indicators include 2 for hightest and 2 for lowtest • SAM 232-30 contains 2-color tri-state LEDs to indicate signal polarity • pin-jacks test points, 1 per DTE and 1 per DCE interface lead plus 3 (SAM 232-30), 12 (SAM 232-40) spares • 24 dip-switches, 1 per DTE/DCE interface lead, interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • jumper cables.

Cost/Service • SAM 232-30: $160; SAM 232-40: $170 plus $6 (case) • quantity discounts • 1-year warranty • factory service.

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☐ SAM 232-50/232-60

Application ● DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type ● DTE/DCE interface breakout box.

Packaging ● hand-held unit.

Functions ● monitors EIA RS-232C/CCITT V.24 DTE and DCE interface leads via individual LED indicators ● supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters ● transparent to codes and protocols ● EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics ● 12 LED indicators monitor key DTE and DCE interface signals; 2 (Model 232-50), 1 (Model 232-60) spare LED indicators for patching to any line ● 2-color LEDs indicate signal polarity on SAM 232-60 ● 52 pin-jacks test points, 1 per DTE and 1 per DCE interface lead ● 24 dip-switches, 1 per DTE/DCE interface lead, interrupt connection between selected DTE/DCE lead for testing or crosspatching ● 5 extra dip-switches on SAM 232-60 interchange TD and RD and force CTS, DSR, and DCD high.

Features/Options ● battery powered; eliminates current drawn from signal leads; jumper cables ● SAM 232-60 contains dual sex connects for DTE and DCE.

Cost/Service ● SAM 232-50: $195; SAM 232-60: $229 purchase basic unit ● quantity discounts ● 1-year warranty ● factory service.

☐ SAM 449

Application ● DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type ● DTE/DCE interface breakout box.

Packaging ● hand-held unit.

Functions ● EIA RS-449 DTE and DEC interface leads via individual LED indicators ● supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface ● displays RTS/CTS delay in milliseconds.

Parameters ● transparent to codes and protocols ● EIA RS-449 DTE/DCE interface.

Characteristics ● 10 LED indicators monitor key DTE and DCE interface signals ● 37 pin-jacks test points, 1 per DTE and 1 per DCE interface lead ● 37 dip-switches, 1 per DTE/DCE interface lead; interrupted connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options ● battery powered; jumper cables.

Cost/Service ● $399 purchase basic unit ● quantity discounts ● 1-year warranty ● factory service.

☐ SAM V.35

Application ● DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type ● DTE/DCE interface breakout box.

Packaging ● hand-held unit.

Functions ● monitors CCITT V.35 DTE and DCE interface leads via individual LED indicators ● supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters ● transparent to codes and protocols ● CCITT V.35 DTE/DCE interface.

Characteristics ● 12 LED indicators monitor key DTE and DCE interface signals; 2 LED indicators, 1 for high/lowtest, 1 for patching on any line ● all LEDs are 2-color tri-state ● 75 pin-jacks test points, 1 per DTE and 1 per DCE interface lead, plus 4 for high/low signal source (2 each), 2 for A/B test, 1 for spare LED ● 34 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options ● battery powered; jumper cables.

Cost/Service ● $695 purchase basic unit ● quantity discounts ● 1-year warranty ● factory service.

■ CARROLL TOUCH TECHNOLOGY CORPORATION
P.O. Box 1309, Round Rock, TX 78680 ● 512-244-3500.

☐ 232LT Line Tester

Application ● DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type ● DTE/DCE interface breakout box.

Packaging ● hand-held unit.

Functions ● monitors EIA RS-232C/CCITT V.24 DTE/DCE interface leads via LED indicators ● supports DTE/DCE interface lead reconfiguration and/or interruption/connection between corresponding DTE/DCE interfaces.

Parameters ● transparent to codes and protocols; EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics ● 12 LED indicators monitor key DTE and DCE interface signals ● pin-jacks test points; 1 per DTE and 1 per DCE interface lead ● 24 rocker switches; 1 per DTE/DCE interface lead interrupts connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options ● powered by signal line; requires no batteries.

Cost/Service ● $175 purchase ● 90-day warranty ● factory service.

■ COM/TECH SYSTEMS INC
505 Eighth Avenue, New York, NY 10018 ● 212-594-5377.

☐ Link/Check Series 202

Application ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line ● DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type ● bit error rate tester (BERT).

Packaging ● standalone unit.

Functions ● monitors EIA RS-232C/CCITT V.24 DTE/DCE interface leads via LED indicators ● performs bit error rate testing (BERT); transmits 1023-bit pseudo-random test pattern; error injection option; loopback option; displays error count.

Parameters ● asynchronous/synchronous optional; half-/full-duplex; EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics ● 8 LED indicators monitor key DTE and DCE interface signals ● 2-digit display for error count on full-featured unit.

Cost/Service ● $715/$480 purchase (master/slave) half-duplex communication; $1,035/$630 (master/slave) full-duplex communication; $1,090/$725 full-featured units ● quantity discounts ● factory service.

■ CONVEX CORPORATION
P.O. Box 17225, Washington, DC 20041 ● 703-661-8900.

☐ Model 680 V.35 Interface Analyzer

Application ● DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type ● DTE/DCE interface breakout box.

Packaging ● portable unit ● rackmount unit.

Functions ● monitors CCITT V.35 DTE/DCE interface leads via LED indicators ● supports DTE/DCE interface lead reconfiguration and/or interruption/connection between corresponding DTE/DCE interfaces ● supports signal level measurement via external test equipment ● provides pulse trap and optional output data rates for error count via external BERT.

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Parameters • transparent to codes and protocols; selectable clock rates optional at 0.4375K, 0.875K, 3.5K, 7K, 14K, 28K, 56K bps; others available upon special request; CCITT V.35; DTE/DCE interface.

Characteristics • 12 LED indicators monitor key DTE and DCE interface signals • 20 pin-jacks test points connected to specific DTE/DCE interface leads via jumper cables • 8 rocker switches, 1 per DTE/DCE interface lead, interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • battery recharger option • jumper cables • clock rate option.

Cost/Service • $800/$875 purchase portable basic unit; $925 purchase full-featured unit • quantity discounts • 1-year warranty • factory service.

☐ Model 682 V.24/RS-232C Interface Analyzer

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • portable unit • rackmount unit.

Functions • monitors EIA RS-232C/CCITT V.24 DTE/DCE interface leads via LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface • supports signal level measurement via external test equipment • provides pulse trap and optional output data rates for error count via external BERT.

Parameters • transparent to codes and protocols; selectable clock rates optional at 75/150/300/1200/1800/2400/3600/4800 bps; EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 23 LED indicators monitor key DTE and DCE interface signals • 1 per DTE/DCE interface lead • 24 rocker switches, 1 per DTE/DCE interface lead, interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • battery recharger option • jumper cables clock rate option • 3-foot RS-232C cable.

Cost/Service • $775/$850 purchase portable basic unit; $900 purchase full-featured unit • quantity discounts • 1-year warranty • factory service.

☐ Model 686 RS-449 Interface Analyzer

Application • detection and isolation of performance degradation or failures in DTE, DCE, or communication line • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box with mark/space loopback testing.

Packaging • portable unit • rackmount unit.

Functions • monitors EIA RS-449 DTE/DCE interface leads via LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption/connection between corresponding DTE/DCE interfaces • supports signal level measurement via external test equipment • transmits pseudo-random test pattern; alternate mark space.

Parameters • transparent to codes and protocols; selectable clock rates optional at 48K/56K bps; other clock rates optional from 2400 to 1.544M bps • EIA RS-449 DTE/DCE interface.

Characteristics • 27 LED indicators monitor key DTE and DCE interface signals • 1 per DTE/DCE interface lead and secondary channel leads • 33 rocker switches, 1 per DTE/DCE interface lead, 1 secondary channel lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • battery recharger option • jumper cables • independent pulse traps detect and store state transitions.

Cost/Service • $1,900 purchase basic unit; $2,125 purchase full-featured unit • quantity discounts • 1-year warranty • factory service.

■ **CRAIG DATA CABLE**

652 Glenbrook Road, Stamford, CT 06906 • 203-356-9315.

☐ Model 700

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 DTE and DCE interface leads via individual LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 25 LED indicators monitor key DTE and DCE interface signals • pin-jacks test points, 1 per DTE and 1 per DCE interface lead • 25 dip-switches, 1 per DTE/DCE interface; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • jumper cables.

Cost/Service • $275 purchase basic unit.

■ **DATACOMM MANAGEMENT SCIENCES INC**

25 Van Zant Street, East Norwalk, CT 06855 • 203-838-7183.

☐ SP-25MV RS-232C Interface Test Panel

Application • detection and isolation of performance degradation or failures in DTE, DCE, or communication line • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box with mark/space loopback testing.

Packaging • rackmount unit.

Functions • monitors EIA RS-232C/CCITT V.24 DTE/DCE interface leads via LED indicators; senses signal lead levels; provides 3,000- to 10,000-ohm load simulation • supports signal level measurement via external test equipment • transmits alternate mark space.

Parameters • transparent to codes and protocols; accommodates clock rates up to 19.2K bps • EIA RS-232C/CCITT V.24; Cooke Dynapatch (12 or 16 pin) DTE/DCE interface.

Characteristics • pin-jacks test points, 1 per DTE and 1 per DCE interface lead • 23 rocker switches, 1 per DTE/DCE interface lead, interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Cost/Service • $2,500 purchase • 1-year warranty • factory service.

■ **DATACOM NORTHWEST, INC**

3303 112th Street SW, Building 100, Everett, WA 98204 • 206-355-0590.

☐ Databert 100 Multifunction Buffered Communications Tester

Application • software and protocol failure analysis • DTE/DCE interface signal failure analysis • detection and isolation of performance degradation or failures in DTE, DCE or communication line.

Device Type • interactive line monitor/protocol analyzer • bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode • nonprogrammable; switch-selectable operating parameters.

Packaging • hand-held unit.

Functions • monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 256 characters • continuously displays transmission as received; selectively captures specific transmission segment for

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visual analysis via entered trap sequence and/or triggers • 256-character maximum trap start sequence; 256-character maximum stop trap sequence; traps up to 2K characters • performs odd/even parity, LRC/CRC error checking • stores lead status of 11 DTE/DCE interface leads • bit/block error rate test (BERT/BLERT); transmits 63-bit, 511-bit, 2047-bit pseudo-random test pattern error injection; FOX message; user-keyed test message up to 256 characters • DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; 12 LED status indicators for patching to all leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters • asynchronous, synchronous, half- or full-duplex; internal selectable clock rates at 50/75/110/134.5/150/200/300/600/1200/2400/4800/9600/19.2K bps; external clock to 20K bps; record rate to 19.2K bps ○ ASCII, EBCDIC, HEX, ITA2 user-selected code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; protocol transparent • RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 32-character LCD display; 16 characters per line • displays in alpha only • hex/alpha tactile keypad • 2K-character capture memory; 256-character output buffer • RS-232C.

Features/Options • battery powered.

Cost/Service • $1,895 purchase basic unit • quantity discounts • 1-year warranty • factory service.

□ V.35 Breakout & Activity Tester

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors CCITT V.35 DTE and DCE interface leads via individual LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters • transparent to codes and protocols • CCITT V.35 DTE/DCE interface.

Characteristics • 12 tri-state LED indicators monitor key DTE and DCE interface signals; 2 spare tri-state LED indicators for monitoring circuits • pin-jacks test points, 1 per DTE and 1 per DCE interface lead • 34 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • battery powered; jumper cables.

Cost/Service • $695 purchase basic unit • quantity discounts • lifetime warranty when warranty card is returned • factory service.

□ RS-232/V.24 Mini-Breakout Box

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 DTE and DCE interface leads via individual LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 3 tri-state LED indicators for sensing positive/negative signal levels on any lead • 24 dip-switches, 1 per DTE/DCE interface; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • 22-gauge solid wires.

Cost/Service • $69.95 purchase basic unit • quantity discounts • lifetime warranty when warranty card is returned • factory service.

□ Tri-State RS-232 V.24 Databox

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 DTE and DCE interface leads via individual LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 13 tri-state LED indicators monitor key DTE and DCE interface signals ○ 50 pin-jacks test points, 1 per DTE and 1 per DCE interface lead • 25 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching • 5 extra dip-switches interchange TD and RD and force CTS, DSR, and DCD high.

Features/Options • jumper cables.

Cost/Service • $249 purchase basic unit • quantity discounts • lifetime warranty when warranty card is returned • factory service.

□ Unpowered RS-232 V.24 Breakout Box

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 ○ supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 7 tri-state LED indicators monitor key DTE and DCE interface signals; 1 spare LED indicator for monitoring unmonitored leads • 40 pin-jacks test points, 1 per DTE and 1 per DCE interface lead • 25 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • jumper cables.

Cost/Service • $139 purchase basic unit • quantity discounts • lifetime warranty when warranty is returned; otherwise 90-day warranty • factory service.

□ RS-422/X.21/CCITT V.10 Breakout & Activity Tester

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors RS-422/X.21/CCITT V.10 DTE and DCE interface leads via individual LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface • supports signal level measurement via external test equipment.

Parameters • transparent to codes and protocols.

Characteristics • 12 dual LED indicators monitor key DTE and DCE interface signals for high or low signal • 30 pin-jacks test points, 1 per DTE and 1 per DCE interface lead • 7 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • battery powered; jumper cables.

Cost/Service • $249 purchase basic unit • quantity discounts • lifetime warranty when warranty card is returned; otherwise 90-day warranty • factory service.

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☐ RS-422/X.21/V.10 Breakout With R232 Monitor

Application ● DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type ● DTE/DCE interface breakout box.

Packaging ● hand-held unit.

Functions ● monitors EIA RS-232C/CCITT V.24 and RS-422/X.21/V.10 DTE and DCE interface leads via individual LED indicators ● supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface ● supports signal level measurement via external test equipment.

Parameters ● transparent to codes and protocols; selectable clock rates.

Characteristics ● 12 dual LED indicators monitor key DTE and DCE interface signals for high or low signal ● 16 pin-jacks test points, 1 per DTE and 1 per DCE interface lead ● 7 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options ● battery powered; jumper cables.

Cost/Service ● $249 purchase basic unit ● quantity discounts ● lifetime warranty when warranty card is returned; otherwise 90-day warranty ● factory service.

☐ Databox RS-449/-422/X.26-423/X.27 Breakout Box

Application ● DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type ● DTE/DCE interface breakout box.

Packaging ● hand-held unit.

Functions ● monitors EIA RS-449, RS-422/X.26 and 423/X.27 DTE and DCE interface leads via individual LED indicators ● supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface ● supports signal level measurement via external test equipment.

Parameters ● transparent to codes and protocols ● EIA RS-449, RS-422/X.26-423/X.27 DTE/DCE interface.

Characteristics ● 11 tri-state LED indicators monitor key DTE and DCE interface signals for high/low signal level ● 74 pin-jacks test points, 1 per DTE and 1 per DCE interface lead ● 37 dip-switches, 1 per DTE/DCE interface; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options ● battery powered; jumper cables.

Cost/Service ● $395 purchase basic unit ● lifetime warranty when warranty card is returned ● factory service.

■ DATATEL INC

1008 Astoria Boulevard, Cherry Hill, NJ 08034 ● 609-424-4451.

☐ DCP 2050 Data Link Simulator

Application ● software and protocol failure analysis.

Device Type ● interactive line monitor/protocol analyzer.

Packaging ● standalone unit.

Functions ● DTE/DCE simulation ● error injection ● selectable propagation delay at 280/350/500 milliseconds.

Parameters ● half-/full-duplex; selectable clock rates up to 64K bps ● RS-232C/CCITT V.24 DTE/DCE interface.

Features/Options ● optional RS-422, V.35 interface.

Cost/Service ● $3,500 purchase basic unit; $3,600 purchase full-featured unit ● quantity discounts ● 1-year warranty ● factory service ● service centers.

■ DEI TELEPRODUCTS DIVISION

2128 Vineyard Avenue, Escondido, CA 92025 ● 619-743-8344.

☐ FPE-1

Application ● DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type ● DTE/DCE interface breakout box.

Packaging ● hand-held unit.

Functions ● monitors EIA RS-232C/CCITT V.24 DTE/DCE interface leads via LED indicators ● supports DTE/DCE interface lead reconfiguration and/or interruption/connection between corresponding DTE/DCE interfaces ● senses signal lead levels and determines if they meet EIA specifications ● supports signal level measurement via external test equipment.

Parameters ● transparent to codes and protocols ● EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics ● 12 LED indicators monitor key DTE and DCE interface signals ● pin-jacks test points, 1 per DTE and 1 per DCE interface lead ● 24 rocker switches, 1 per DTE/DCE interface lead, interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options ● optional male-to-male or female-to-female 25-pin connectors.

Cost/Service ● $255 purchase basic unit; $305 purchase full-featured unit ● 90-day warranty ● factory service.

■ DIGILOG INC/Network Control Division

1370 Welsh Road, Montgomeryville, PA 18936 ● 215-628-4530.

☐ DLM IV

Application ● software and protocol failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line ● DTE/DCE interface signal failure analysis.

Device Type ● interactive line monitor/protocol analyzer ● bit-/byte-oriented communication protocol monitor ● bit-/byte-oriented interactive mode ● accommodates external diskette storage; 500K-character capacity ● programmable via menu-selectable operating parameters.

Packaging ● portable unit with carrying case ● rackmount unit.

Functions ● monitors, captures, displays, and optionally records transmissions received from DTE or DCE interface for visual analysis ● interactive mode transmits user-keyed message up to 1024 characters ● continuously displays transmission as received; selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence ● 6-character maximum trap start/stop sequence; traps up to 12K characters starting at beginning, middle, and end of capture memory ● 6-character or 8-bit trap sequence maximum mask; 8-bit matching ● records from line or capture memory at up to 19.2K bps or 72K bps ● trigger-selective recording via character sequence ● performs odd/even parity; LRC, CRC, error checking ● bit/block error rate test (BERT/BLERT); transmits 511-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 1024 characters ● DTE/DCE RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for all leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous/synchronous/isochronous; half-/full-duplex internal selectable clock rates at 50/75/110/134.5/150/300/1050/1200/1800/2000/2400/3600/4800/7200/9600/19.2K bps; other rates programmable through keypad; external clock to 19.2K bps; record rate to 19.2K bps ● ASCII, EBCDIC, Correspondence, Baudot, IPARS, XS-3, 200-UT code; 5/6/7/8/9-bit framing; odd/even/no parity, mark, space; 1, 1.5, 2 stop bits; HDLC, SDLC, SDLC NRZI, BSC, X.25 protocol ● RS-232C/CCITT V.24; MIL-188C DTE/DCE interface.

Characteristics ● 5-inch diagonal CRT screen; 512 character positions; 32 characters per line by 16 lines including 2 status lines ● displays in hex or alpha ● displays receive and transmit data concurrently; transmit and receive data identified via reverse video/underline ● hex keypad ● 2 RS-170 composite video outputs for external CRT monitors ● 12K-byte program and data memory; 1024-character segmentable output buffer ● RS-232C external recorder/printer output.

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Features/Options ● 3 event counters ● 2 interval timers ● bit inversion ● bit shift ● bit reversal ● 2 nonvolatile EEROMS for menus and output buffer; printer output in ASCII or hex ● dual diskette drives ● upgradable from DLM IV to DLM V.

Cost/Service ● $3,295 purchase basic unit ● dual diskette drive (double-sided, double-density) $3,575 purchase (19.2K bps); $4,295 purchase (72K bps) ● quantity discounts ● 1-year warranty ● factory service ● 2 service centers in Los Angeles, CA and Montgomeryville, PA.

□ DLM V

Application ● software and protocol failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line ● DTE/DCE interface signal failure analysis.

Device Type ● interactive line monitor/protocol analyzer ● bit-/byte-oriented interactive mode ● cartridge tape storage; diskette storage; 500K-character capacity ● programmable via language composed of 15 instructions and 11 commands; menu-selectable operating parameters.

Packaging ● portable unit with carrying case ● rackmount unit ● standalone unit.

Functions ● monitors, captures, displays, and optionally records transmissions received from DTE or DCE interface for visual analysis ● interactive mode transmits user-keyed test message up to 1024 characters ● continuously displays transmission as received; selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 6-character maximum trap start/stop sequence; traps up to 12K characters starting at beginning, middle, or end of capture memory ● 6-character or 5-character plus 8-bit trap sequence; bit matching ● records from line or capture memory at up to 19.2K bps or 72K bps; trigger-selective recording via character sequence ● performs odd/even parity; LRC, CRC error checking ● bit/block error rate test (BERT/BLERT); transmits 511-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 1024 characters ● DTE/DCE RS-232C interface breakout panel for signal testing; LED status indicators for all leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous/synchronous/isochronous; half-/full-duplex internal selectable clock rates at 50/75/110/134.5/150/200/300/600/1050/1200/1800/2000/2400/4800/9600/19.2K bps; other rates programmable through keyboard; external clock to 19.2K bps; record rate to 19.2K bps ● ASCII, EBCDIC, Correspondence, Baudot, IPARS, XS-3, 200UT, EBCD, HEX, 2740/2741, 1 Optional Code: 5/6/7/8/9-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, SDLC NRZI, BSC, X.25 protocol ● RS-232C/CCITT V.24; MIL-188C; RS-170 DTE/DCE interface.

Characteristics ● 5-inch diagonal CRT screen; 512 character positions; 32 characters per line by 16 lines including 2 status lines ● displays in hex or alpha ● displays receive and transmit data concurrently; transmit and receive data identified via reverse video/underline; 16-key hex keypad and fold-down detachable 72-key ASCII; hex keyboard ● RS-170 composite video output for external CRT monitor ● 12K-byte program and data memory; 1024-character segmentable output buffer; parallel printer output ● external recorder output.

Features/Options ● 3 event counters ● 2 interval timers ● bit inversion ● bit shift ● bit reversal ● options include nonvolatile EEPROM, stores 5 set-up menus, 10 72-step programs and output buffer; printer output; dual diskettes.

Cost/Service ● $4,195 purchase basic unit; $8,490 purchase full-featured unit ● dual diskette drive (double-sided, double-density) $3,575 purchase (19.2K bps); $4,275 purchase (72K bps) ● quantity discounts ● 1-year warranty ● factory service ● 2 service centers in Los Angeles, CA and Montgomeryville, PA.

□ Digilog 200 Automatic Protocol Analyzer

Application ● software and protocol failure analysis ● DTE/DCE

interface signal failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type ● interactive line monitor/protocol analyzer ● bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode ● programmable via vendor-supplied diagnostic programs or user-created diagnostic programs ● programmable via menu-selectable operating parameters.

Packaging ● portable unit with carrying case.

Functions ● monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 1000 characters ● downline loads program parameters to remote monitor ● continuously displays transmission as received; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 1000-character maximum trap start sequence; 1000-character maximum stop trap sequence; traps up to 16K characters ● trap sequence character or bit masking; maximum mask (don't care) 999 characters; 7992 bits; bit matching ● performs odd/even parity, LRC/CRC/VRC error checking ● stores lead status of 5 DTE/DCE interface leads ● bit/block error rate test (BERT/BLERT); transmits 63-bit, 511-bit, 2047-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 1000 characters ● DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for 17 leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous, synchronous, isochronous, half- or full-duplex; internal clock rates up to 19.2K bps; external clock to 19.2K bps ● ASCII, EBCDIC, EBCD, Correspondence, Baudot, IPARS, 200 UT, XS-3, HEX user-selected code; 5-, 6-, 7-, 8-bit framing; HDLC, SDLC, DDCMP protocol ● RS-232C/CCITT V.24, CCITT V.35 DTE/DCE interface.

Characteristics ● 5-inch (diagonal) CRT screen; 512 character positions ● displays in hex or alpha; displays receive and transmit data concurrently via alternate lines; transmit or receive data identified via underline ● tactile keypad, keyboard ● RS-170 composite video output for external CRT monitor ● 32K-character capture memory, 4K-character program memory; 1024-character output buffer ● RS-232C.

Features/Options ● automatic setup to line parameters standard ● remote control ● audible alarm ● event triggers ● optional case; optional 8K/16K/32K EEPROM packs for storage of test programs or storage of data or setups; optional application test packages.

Cost/Service ● $4,995 purchase basic unit; $5,845 purchase full-featured unit ● quantity discounts ● 1-year warranty ● factory service ● service centers.

□ Digilog 400 Automatic Protocol Analyzer

Application ● software and protocol failure analysis ● DTE/DCE interface signal failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type ● interactive line monitor/protocol analyzer ● bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode ● contains integral diskette storage; 800K-character capacity ● programmable via vendor-supplied diagnostic programs or user-created diagnostic programs ● programmable via menu-selectable operating parameters.

Packaging ● portable unit with carrying case.

Functions ● monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 1000 characters ● downline loads program parameters to remote monitor ● continuously displays transmission as received; selectively captures specific transmission segment for visual analysis via entered trap

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sequence and/or triggers ● 1000-character maximum trap start sequence; 1000-character maximum stop trap sequence; traps up to 16K characters ● trap sequence character or bit masking; maximum mask (don't care) 999 characters; 7992 bits; bit matching ● records from line or capture memory; trigger-selective recording via DTE/DCE interface signal changes, via character sequence, via search by marker, via search by error ● performs LRC/CRC/CCITT/VRC error checking ● stores lead status of 5 DTE/DCE interface leads ● bit/block error rate test (BERT/BLERT); transmits 63-bit, 511-bit, 2047-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 1000 characters ● DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for 17 leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous, synchronous, isochronous, half- or full-duplex; internal clock rates up to 56K bps; external clock to 56K bps; record rate to 56K bps ● ASCII, EBCDIC, EBCD, Correspondence, Baudot, IPARS, 200 UT, XS-3, HEX user-selected code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, DDCMP protocol ● RS-232C/CCITT V.24; optional CCITT V.35 or X.21 DTE/DCE interface.

Characteristics ● 5-inch (diagonal) CRT screen; 512 character positions ● displays in hex or alpha; displays receive and transmit data concurrently via alternate lines; transmit or receive data identified via underline ● hex/alpha tactile keypad, keyboard ● RS-170 composite video output for external CRT monitor ● 32K-character capture memory, 6K-character program memory; 1024-character output buffer ● RS-232C.

Features/Options ● automatic setup to line parameters standard ● remote control standard ● audible alarm ● event counters ● event triggers ● optional carrying case and 8K/16K/32K EEPROM packs for storage of test programs, data, or setups; optional application test packages.

Cost/Service ● $7,495 purchase basic unit; $8,295 purchase full-featured unit ● quantity discounts ● 1-year warranty ● factory service ● service centers.

☐ Digilog 600 Protocol Analyzer/Simulator

Application ● software and protocol failure analysis ● DTE/DCE interface signal failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type ● interactive line monitor/protocol analyzer ● bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode ● contains integral diskette storage; 800K-character capacity ● programmable via vendor-supplied diagnostic programs or user-created diagnostic programs ● programmable via menu-selectable operating parameters.

Packaging ● portable unit with carrying case.

Functions ● monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 1000 characters ● downline loads program parameters to remote monitor ● continuously displays transmission as received; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 1000-character maximum trap start sequence; 1000-character maximum stop trap sequence; traps up to 16K characters ● trap sequence character or bit masking; maximum mask (don't care) 999 characters; 7992 bits; bit matching ● records from line or capture memory; trigger-selective recording via DTE/DCE interface signal changes, via character sequence, via search by marker, or via search by error ● performs odd/even parity, LRC/CRC/VRC error checking ● stores lead status of 5 DTE/DCE interface leads ● bit/block error rate test (BERT/BLERT); transmits 63-bit, 511-bit, 2047-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 1000 characters ● DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for 17 leads; breakout switches open/close

connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous, synchronous, isochronous, half- or full-duplex; internal clock rates up to 72K bps; external clock to 72K bps; record rate to 72K bps ● ASCII, EBCDIC, EBCD, Correspondence, Baudot, IPARS, XS-3, 200 UT, HEX code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, DDCMP protocol ● RS-232C/CCITT V.24; optional CCITT V.35 or X.21 DTE/DCE interface.

Characteristics ● 7-inch (diagonal) CRT screen; 800 character positions ● displays in hex or alpha; displays receive and transmit data concurrently via alternate lines; transmit or receive data identified via underline ● hex/alpha tactile keypad keyboard ● RS-170 composite video output for external CRT monitor ● 32K-character capture memory; 8K-character program memory; 1024-character output buffer ● RS-232C.

Features/Options ● automatic setup to line parameters standard ● remote control standard ● audible alarm ● event counters ● event triggers ● optional carrying case and 8K/16K/32K EEPROM packs for storage of test programs, data, or setups; optional application test packages.

Cost/Service ● $11,500 purchase basic unit; $12,100 purchase full-featured unit ● quantity discounts ● 1-year warranty ● factory service ● service centers.

☐ Digilog 800 Protocol/Performance Analyzer

Application ● software and protocol failure analysis ● DTE/DCE interface signal failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type ● interactive line monitor/protocol analyzer ● bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode ● contains integral Winchester disk storage, 10M-byte diskette storage; 800K-character capacity ● programmable via vendor-supplied diagnostic programs or user-created diagnostic programs ● programmable via menu-selectable operating parameters.

Packaging ● portable unit with carrying case.

Functions ● monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 1024 characters ● downline loads program parameters to remote monitor ● continuously displays transmission as received, selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 1000-character maximum trap start sequence; 1000-character maximum stop trap sequence; traps up to 16K characters in capture memory ● trap sequence character or bit masking; maximum mask (don't care) 999 characters; 7992 bits; bit matching ● records from line or capture memory; trigger-selective recording via DTE/DCE interface signal changes, via character sequence, via search by marker, or via search by error ● performs odd/even parity, LRC/CCC/CRC/CCITT-FCS/VRC error checking ● stores lead status of 5 DTE/DCE interface leads ● bit/block error rate test (BERT/BLERT); transmits 63-bit, 511-bit, 2047-bit pseudo-random test pattern error injection; FOX message; user-keyed test message up to 1000 characters ● DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for 17 leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous, synchronous, isochronous, half- or full-duplex; internal clock rates up to 256K bps; external clock to 256K bps; record rate to 256K bps ● ASCII, EBCDIC, EBCD, Correspondence, Baudot, IPARS, XS-3, 200 UT, HEX user-selected code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; X.25, HDLC, SNA/SDLC, DDCMP, ADCCP, BSC protocol ● RS-232C/CCITT V.24 or optional CCITT V.35 or X.21 DTE/DCE interface.

Characteristics ● 10.5-inch (diagonal) CRT screen; 2000 character positions ● displays in hex or alpha; displays receive

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and transmit data concurrently via alternate lines; transmit or receive data identified via underline, color • hex/alpha tactile keypad keyboard • RS-170 composite video output for external CRT monitor • 32K-character capture memory; 32K-character program memory; 1024-character output buffer • RS-232C.

Features/Options • automatic setup to line parameters standard • remote control • audible alarm • event counters • event triggers • optional carrying case, V.35/X.21 interface, and application test packages.

Cost/Service • $18,500 purchase basic unit; $19,100 purchase full-featured unit • quantity discounts • 1-year warranty • factory service • service centers.

■ DIGITECH INDUSTRIES, INC

66 Grove Street, P.O. Box 547, Ridgefield, CT 06877 • 203-438-3731.

☐ Pacer-103

Application • software and protocol failure analysis • detection and isolation of performance degradation or failures in DTE, DCE, or communication line • DTE/DCE interface signal failure analysis.

Device Type • interactive line monitor/protocol analyzer • bit-/byte-oriented communication protocol monitor • byte-oriented interactive mode • accommodates external cartridge tape storage for programs • programmable via vendor-supplied diagnostic programs; user-created diagnostic programs; menu-selectable operating parameters.

Packaging • portable unit with carrying case.

Functions • monitors, captures, displays, and optionally records transmissions received from DTE or DCE interface for visual analysis • simulates DTE or DCE; interactive mode transmits user-keyed message up to 1000 characters • continuously displays transmission as received; selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers • 5-character maximum trap start/stop sequence; traps up to 1024/3072/5120/7168/9216 characters starting at end of capture memory • 5-character trap sequence character or maximum mask • records from line or capture memory • trigger-selective recording via DTE/DCE interface signal changes; via character sequence • performs odd parity; LRC/CRC error checking • stores lead status of 5 DTE/DCE interface leads • bit/block error rate test (BERT/BLERT); transmits 63-/511-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 1000 characters • DTE/DCE RS-232C interface breakout panel for signal testing; LED status indicators for all leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters • asynchronous/synchronous; half-/full-duplex internal clock rates up to 19.2K bps; external clock to 19.2K bps; record rate to 19.2K bps • ASCII, EBCDIC, EBCD, BCD, Baudot codes; 5/6/7/8-bit framing; odd/even/no parity; 1, 2 stop bits; BSC, ASCII protocol; will monitor bit-oriented protocols • RS-232C DTE/DCE interface.

Characteristics • dot-matrix single-line flat panel display with 32 character positions • displays receive and transmit data concurrently; transmit and receive data identified via LED toggle switch with external display; receive data identified via blinking • alpha tactile keyboard; RS-375 composite video output for external CRT monitor • 1024-character minimum capture memory; expandable in 4 2048-character increments • 256-character minimum program and data memory; output buffer can transmit entire capture memory • RS-232C external recorder output.

Features/Options • 2 event counters • 2 interval timers • event triggers • bit shift • options include expandable capture memory to 10K characters; expandable program memory to 1024 characters; 3 additional data codes; SDLC monitor; 9- or 14-inch external CRT display; AT&T 303 or CCITT V.35 interfaces; 2 additional event counters.

Cost/Service • $5,995 purchase basic unit; $12,675 purchase

full-featured unit • quantity discounts • 1-year warranty • factory service.

☐ Data Monitor 200

Application • software and protocol failure analysis • DTE/DCE interface signal failure analysis.

Device Type • passive line monitor/protocol analyzer • bit-/byte-oriented communication protocol monitor • with/without integral cartridge tape storage; 500K-character, wrap-around capacity.

Packaging • portable unit with carrying case • rackmount unit.

Functions • monitors, captures, displays, and optionally records transmissions received from DTE or DCE interface for visual analysis • continuously displays transmission as received; selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence • 5-character maximum trap start sequence; 2-character maximum stop trap sequence; traps up to 1792 characters starting at beginning or end of capture memory • DTE/DCE RS-232C interface breakout panel for signal testing; LED status indicators for all leads.

Parameters • asynchronous/synchronous; half-/full-duplex; internal clock rates up to 9600 bps; external clock to 9600 bps; record rate to 19.2K bps and higher • ASCII, EBCDIC, Baudot codes; 5/6/7/8-bit framing; odd/even/no parity; any asynchronous; bit or byte synchronous protocol • RS-232C.

Characteristics • 5-inch (diagonal) CRT screen; 256 character positions; 16 characters per line by 16 lines • displays in hex or alpha • displays receive and transmit data concurrently via alternate lines or character interleaving • hex tactile keypad • external recorder output.

Features/Options • bit shift.

Cost/Service • $2,995 purchase full-featured unit with integral tape unit • quantity discounts • 1-year warranty • factory service.

☐ Encore 100

Application • software and protocol failure analysis • detection and isolation of performance degradation or failures in DTE, DCE, or communication line • DTE/DCE interface signal failure analysis.

Device Type • interactive line monitor/protocol analyzer passive line monitor/protocol analyzer • bit-/byte-oriented communication protocol monitor • bit-/byte-oriented interactive mode • contains integral diskette • integral cartridge tape storage (500K) or integral diskette storage (240K) character capacity • programmable via vendor-supplied diagnostic programs; user-created diagnostic programs; menu-selectable operating parameters.

Packaging • portable unit with carrying case • standalone unit.

Functions • monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis • simulates DTE or DCE; interactive mode transmits user-keyed message up to any length depending on memory • downline loads program parameters to remote monitor • continuously displays transmission as received; selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers programmable start trap and stop trap sequence; traps up to 21.75K (optional) characters starting at beginning/end of capture memory • trap sequence character or bit masking; maximum mask 32 characters; bit matching • records from disk or capture memory; trigger-selective recording via DTE/DCE interface signal changes via character sequence via search by marker via search by error • performs odd/even parity; LRC/CRC error checking • stores lead status of 7 DTE/DCE interface leads • bit/block error rate test (BERT/BLERT); transmits 63/511/2047-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message • DTE/DCE RS-232C interface breakout panel for signal testing; LED status indicators for all leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

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Parameters ● asynchronous/synchronous half-/full-duplex; selectable internal clock rates up to 80K bps; external clock to 80K bps; record rate to 9600 bps ● ASCII, EBCDIC, EBCD, plus 3 user-selected codes; 5/6/7/8-bit framing; odd/even/no parity; mark, space, none; 1, 1.5, 2 stop bits; HDLC, SDLC, BSC, X.25, X.75, ADCCP protocol ● RS-232C; current-loop DTE/DCE interface.

Characteristics ● 9-inch diagonal CRT screen; 224 to 896 character positions; 32/64 characters per line by 7/14 lines ● displays receive data identified via reverse video; alpha keyboard ● 21.75K-byte capture memory ● 32K-byte standard program.

Features/Options ● event counters ● interval timers ● event triggers ● bit inversion ● bit shift ● bit reversal.

Cost/Service ● $16,500 purchase ● quantity discounts ● 1-year warranty ● factory service.

☐ Encore 200

Application ● software and protocol failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line ● DTE/DCE interface signal failure analysis.

Device Type ● interactive line monitor/protocol analyzer ● passive line monitor/protocol analyzer ● bit-/byte-oriented communication protocol monitor ● bit-/byte-oriented interactive mode ● contains integral diskette storage; 240K-character capacity ● programmable via vendor-supplied diagnostic programs; user-created diagnostic programs; menu-selectable operating parameters.

Packaging ● portable unit with carrying case ● rackmount unit.

Functions ● monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis ● simulates DTE or DCE; interactive mode transmits user-keyed message up to any length depending on memory ● downline loads program parameters to remote monitor ● continuously displays transmission as received; selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● programmable start trap and stop trap sequence; traps up to 26K characters starting at beginning end of capture memory ● trap sequence character or bit masking; maximum mask 32 characters; 32 bits standard (expandable); bit matching ● records from line or capture memory ● trigger-selective recording via DTE/DCE interface signal changes; via character sequence; via search by marker ● performs odd/even parity; LRC/CRC error checking ● stores lead status of 7 DTE/DCE interface leads ● bit/block error rate test (BERT/BLERT); transmits 63/511/1023/2047-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to any length depending on memory ● DTE/DCE RS-232C interface breakout panel for signal testing; LED status indicators for all leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous/synchronous/isochronous; half-/full-duplex internal clock rates up to 80K bps; external clock to 80K bps; record rate to 56K bps ● ASCII, EBCDIC, EBCD, Correspondence code; 5/6/7/8-bit framing; odd/even/no parity, mark, space. ignore; 1, 1.5, 2 stop bits; HDLC, SDLC, BSC, X.25, X.75, ADCCP protocol ● RS-232C/CCITT V.24; RS-449 DTE/DCE interface.

Characteristics ● 7-inch diagonal CRT screen; 224 to 896 character positions; 4 display formats ● displays in Hex or ASCII ● displays receive and transmit data concurrently via reverse video ● alpha tactile keyboard ● touch-sensitive keypad ● RS-375 composite video output for external CRT monitor ● 4K to 22K program and data memory; 32K-character battery-powered program memory ● output buffer transmits entire capture memory if necessary ● RS-232C.

Features/Options ● 78 event counters ● 26 interval timers ● 27 event triggers ● bit inversion ● bit shift ● bit reversal ● options include X.25/X.75 program package (monitor X.25 and interactive DTE/DCE test scenario).

Cost/Service ● $16,500 purchase basic unit; $18,000 purchase full-featured unit ● quantity discounts ● 1-year warranty ● factory service.

■ DYNATECH DATA SYSTEMS
7644 Dynatech Court, Springfield, VA 22153 ● 703-569-9000.

☐ Dyna-Test 1100

Application ● software and protocol failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line ● DTE/DCE interface signal failure analysis.

Device Type ● interactive line monitor/protocol analyzer ● bit-/byte-oriented communication protocol monitor ● byte-oriented interactive mode ● vendor-supplied diagnostic programs; programmable via menu-selectable operating parameters.

Packaging ● portable unit with carrying case ● standalone unit.

Functions ● monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis ● simulates DTE; interactive mode transmits user-keyed message up to 1000 characters ● continuously displays transmission as received; selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 8-character maximum trap start/stop sequence; traps up to 7500 characters starting at beginning, middle, or end of capture memory ● trap sequence character or bit masking; maximum mask 8 characters; 8-bit matching ● trigger-selective recording via character sequence ● performs odd/even parity; LRC/CRC error checking ● stores lead status of 6 DTE/DCE interface leads ● optional bit/block error rate test (BERT/BLERT); transmits 63/511/2047-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 1000 characters ● DTE/DCE RS-232C interface breakout panel for signal testing; LED status indicators for 14 leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous/synchronous; half-/full-duplex internal selectable clock rates at 50/75/110/134.5/150/300/600/1200/1800/2000/3600/4800/7200/9600/19.2K bps; external clock to 100K bps ● ASCII, EBCDIC codes; 5/6/7/8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, SDLC NRZI, DDCMP, IPARS, BSC, ASCII protocol ● RS-232C/CCITT V.24, optional RS-449, IBM 3600, MIL-188C DTE/DCE interface.

Characteristics ● 5-inch diagonal CRT screen; 512 character positions; 32 characters per line by 16 lines plus 2 status lines ● displays in hex or alpha ● displays receive and transmit data concurrently; receive data identified via reverse video; hex standard; tactile keypad ● RS-170 composite video output for external CRT monitor ● 7500-character program and data memory; 7500-character output buffer ● RS-232C printer interface.

Features/Options ● 2 event counters for block check characters only ● bit shift ● bit reversal ● options include RS-449 interface; clear test decode and display of SDLC/HDLC control information; IBM 3600 decode/display; transmit/BERT; rackmount; 3 optional codes.

Cost/Service ● $3,400 purchase basic unit; $7,895 purchase full-featured unit ● 1-year warranty ● factory service.

☐ Dyna-Test 1600

Application ● software and protocol failure analysis ● DTE/DCD interface signal failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type ● interactive line monitor/protocol analyzer ● bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode ● contains integral cartridge tape storage; 500K- (low-speed), 780K- (high-speed) character capacity ● programmable via menu-selectable operating parameters.

Packaging ● portable unit with carrying case.

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Functions ● monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 200 characters per buffer; 10 buffers ● continuously displays transmission as received, selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 8-character maximum trap start sequence; 8-character maximum stop trap sequence; traps up to 999 characters ● trap sequence character or bit masking; maximum mask (don't care) 7 characters; 56 bits; bit matching ● records from capture memory; trigger-selective recording via DTE/DCE interface signal changes, via character sequence, via search by marker, or via search by error ● performs odd/even parity, LRC/CRC/CCITT error checking ● stores lead status of 6 DTE/DCE interface leads ● bit/block error rate test (BERT/BLERT); transmits 63-bit, 511-bit, 2047-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 200 characters ● DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for 15 leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous, synchronous, half- or full-duplex; internal clock rates up to 19.2K bps; external clock to 100K bps; record rate to 56K bps ● ASCII, EBCDIC, HEX code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; BDLC, HDLC, SDLC, NRZI, DDCMP protocol ● RS-232C/CCITT V.24 and MIL-188C standard; optional RS-449, CCITT V.35, CCITT X.21, AT&T 303, 20/40/60-mA current-loop, and IBM 3600/4600 DTE/DCE interface.

Characteristics ● 5-inch (diagonal) CRT screen; 512 character positions; 32 characters per line by 16 lines ● displays in hex or alpha; displays receive and transmit data concurrently via alternate lines, via split screen; transmit data identified via reverse video, underline; hex/alpha tactile keypad ● RS-170 composite video output for external CRT monitor ● 8K-character capture memory; 200-character-per-output buffer; 10 buffers ● RS-232C.

Features/Options ● displays IBM 3600 formatted data ● event triggers ● 10-user loadable nonvolatile buffers standard.

Cost/Service ● $8,750 purchase basic unit ● quantity discounts ● 1-year warranty ● factory service.

☐ Dyna-Test 2000C

Application ● software and protocol failure analysis ● detection and isolation of performance degradation of failures in DTE, DCE, or communication line ● DTE/DCE interface signal failure analysis.

Device Type ● interactive line monitor/protocol analyzer ● bit-/byte-oriented communication protocol monitor ● bit-/byte-oriented interactive mode ● contains optional integral cartridge tape storage; 200K-character capacity ● programmable via user-created diagnostic programs; 85 macro instructions; menu-selectable operating parameters.

Packaging ● portable unit with carrying case ● rackmount unit.

Functions ● monitors, captures, displays, and optionally records transmissions received from DTE or DCE interface for visual analysis, simulates DTE or DCE; interactive mode transmits user-keyed test message to 985 characters ● continuously displays transmission for visual analysis; selectively freezes displayed transmission as received; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 8-character maximum trap start/stop sequence; traps up to 4096 characters starting at beginning, middle, or end of capture memory ● trap sequence character masking; maximum mask 1 character; bit matching ● records from line ● trigger-selective recording via DTE/DCE interface signal changes and character sequence ● performs odd/even parity; LRC/CRC error checking ● stores lead status of 6 DTE/DCE interface leads ● DTE/DCE RS-232C interface breakout panel for signal testing ● bit/block error rate test (BERT/BLERT); transmits 63/511/2047-bit pseudo-random test pattern; error injection; FOX message; printer test; user-keyed test message up to 985 characters; LED status indicators for all leads;

individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous/synchronous; half-/full-duplex internal selectable clock rates at 50/75/110/134.5/150/300/600/1200/1800/2000/3600/4800/7200/9600/19.2K bps; external clock to 56K bps; record rate to 9600 bps ● ASCII, EBCDIC, EBCD, BCD, Correspondence, Baudot, IPARS codes; 5/6/7/8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, SDLC NRZI, DDCMP, IPARS, BSC, ASCII protocol ● RS-232C/CCITT V.24; optional RS-449; MIL-188C DTE/DCE interface.

Characteristics ● 5-inch diagonal CRT screen; 512 character positions; 32 characters per line by 16 lines plus 2 status lines ● displays in hex or alpha ● displays receive and transmit data concurrently; receive data identified via reverse video; hex standard; tactile keypad ● RS-170 composite video output for external CRT monitor ● 4K-character program data memory; 4K-character output buffer; 1000-character program memory ● RS-232C ● external recorder output.

Features/Options ● 4 event counters ● 3 interval timers ● event triggers ● bit shift ● split screen display shows frame and packet information concurrently ● options include 6 additional data codes; integral cartridge tape drive.

Cost/Service ● $13,800 purchase portable unit; $14,400 purchase rackmount unit ● 1-year warranty ● factory service.

☐ Simon 5 Protocol Simulator/Monitor

Application ● software and protocol failure analysis ● DTE/DCE interface signal failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type ● interactive line monitor/protocol analyzer ● bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode ● contains integral hard disk storage; programmable via vendor-supplied diagnostic programs or user-created diagnostic programs ● programmable via menu-selectable operating parameters.

Packaging ● portable unit with carrying case.

Functions ● monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 4096 characters ● continuously displays transmission as received, selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 8-character maximum trap start sequence; 8-character maximum stop trap sequence; traps up to 4096 characters ● trap sequence character or bit masking; maximum mask (don't care) 7 characters; 56 bits; bit matching ● records from line; trigger-selective recording via DTE/DCE interface signal changes, via character sequence, via search by marker, or via search by error ● performs odd/even parity, LRC/CRC error checking ● stores lead status of 6 DTE/DCE interface leads ● bit/block error rate test (BERT/BLERT); transmits 63-bit, 511-bit, 2047-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 200 characters ● DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for 15 leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous, synchronous, half- or full-duplex; internal selectable clock rates at 50/75/100/110/134.5/150/200/300/600/1200/1800/2000/2400/3600/4800/7200/9600/19.2K bps; external clock to 64K bps; record rate to 64K bps ● ASCII, EBCDIC, PTTC, SELECTRIC, Baudot, IPARS, user-selected code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, DDCMP, IPARS, or BSC protocol ● RS-232C/CCITT V.24 and MIL-188C standard; optional RS-449, CCITT V.35, or CCITT X.21 DTE/DCE interface.

Characteristics ● 7-inch (diagonal) CRT screen; 1152 character positions; 48 characters per line by 24 lines ● displays in hex or alpha; displays receive and transmit data concurrently via

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alternate lines; transmit data identified via reverse video or underline ● hex/alpha tactile keyboard ● RS-170 composite video output for external CRT monitor ● 8K-character capture memory; 4096-character program memory; 4096-character output buffer ● RS-232C.

Features/Options ● event counters ● event triggers ● bit reversal ● optional transit case, hard disk cartridges, 12-inch monitor and plug-in Interface Module for RS-449, CCITT V.35, and CCITT X.21.

Cost/Service ● $17,950 purchase basic unit ● quantity discounts ● 1-year warranty ● factory service.

■ DYNATECH PACKET TECHNOLOGY (DYNAPAC)

7664-A Fullerton Road, Springfield, VA 22153 ● 703-642-9391.

☐ NET/18

Application ● software and protocol failure analysis.

Device Type ● interactive monitor/protocol analyzer ● bit-/byte-oriented communication protocol monitor ● bit-/byte-oriented interactive mode ● contains integral and accommodates external diskette storage; 100K-character capacity integral or external diskette; 200K-character total ● programmable via vendor-supplied diagnostic programs; user-created diagnostic programs; menu-selectable operating parameters.

Packaging ● standalone unit.

Functions ● monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis ● simulates DTE or DCE; interactive mode transmits user-keyed message up to 300 characters per packet; can change message from packet to packet ● continuously displays transmission as received; selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● frame or packet trap start/stop sequence; traps up to 128 characters starting at beginning, middle, or end of capture memory ● records from capture memory ● trigger-selective recording via DTE/DCE interface signal changes; via character sequence; via search by marker ● CRC, FCS error checking.

Parameters ● synchronous; full-duplex; selectable clock rates up to 9600 bps; external clock to 9600 bps; record rate to 9600 bps or higher; ASCII, EBCDIC code; 5/6/7/8-bit framing; odd/even/no parity; SDLC, BSC, X.25, X.75, X.3, X.29 protocols ● RS-232C/CCITT V.24, optional CCITT V.35 DTE/DCE interface ● Telenet-/Tymnet-certified.

Characteristics ● 12-inch diagonal CRT screen; 1840 character positions; 80 characters per line by 24 lines plus 1 status line ● displays in hex or alpha ● displays receive and transmit data concurrently via alternate lines; typewriter-style tactile keyboard with numeric pad ● 12K-character program and data memory ● RS-232C DTE/DCE interface.

Features/Options ● event triggers ● includes all software, requires no programming ● options include external diskette drive; high-speed to 56K bps standard.

Cost/Service ● $15,995 purchase basic unit; $17,590 purchase full-featured unit ● 1-year warranty ● factory service.

■ THE EDGE INSTRUMENT COMPANY

2020 West North Lane, Phoenix, AZ 85021 ● 602-995-0802.

☐ Asynchronous Terminal Exerciser Model 48A

Application ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type ● terminal exerciser and test pattern generator.

Packaging ● hand-held unit.

Functions ● transmits 1 of 4 different test patterns for printout at local printer, including scrolling ASCII, incrementing ASCII, top-of-forms, and U-pattern test patterns; can transmit user-keyed message up to 32 characters ● prints ASCII equivalent of any keyboard character ● local/remote loopback tests for parity error (requires modem loopback plug).

Parameters ● asynchronous; half-/full-duplex; selectable clock rates at 110/150/300/600/1200/2400/4800/9600 bps; odd/even parity; line length 72/80/120/132 characters ● EIA RS-232C/CCITT V.24; 20-mA current-loop DTE/DCE interface.

Characteristics ● 6 LED indicators for PE (parity errors), DTR, RTS, BSY, XMT, REC ● DIP-switch selectable operating parameters.

Features/Options ● transmits pad (null) characters for printers that require them ● 2 additional test patterns, selected via terminal keyboard, test GE Terminet terminals ● optional modem loopback plug.

Cost/Service ● $580 purchase basic unit ● quantity discounts ● 90-day warranty ● factory service.

☐ Acoustic Coupler Exerciser Model 58

Application ● detection and isolation of performance degradation or failures in acoustic couplers (and terminals) in conjunction with Edge Model 48A Asynchronous Terminal Exerciser.

Device Type ● acoustic coupler exerciser.

Packaging ● hand-held unit.

Functions ● translates digital signals to acoustic tones, permitting Model 48A terminal exerciser to test terminal/acoustic coupler combinations ● tests acoustic coupler receive sensitivity and transmit level.

Parameters ● transparent to codes and protocols; acoustic coupler (handset) DTE/DCE interface.

Characteristics ● 6 LED indicators for decibel level measurements; DIP-switch selectable operating parameters.

Features/Options ● includes telephone handset ● includes cable and interface for connection to Model 48A.

Cost/Service ● $550 purchase basic unit ● quantity discounts ● 90-day warranty ● factory service.

■ ELECTRODATA, INC

23020 Miles Road, Bedford Heights, OH 44128 ● 216-663-3333.

☐ CTS1—Data Communications Test Set

Application ● DTE/DCE interface signal failure analysis and lead reconfiguration ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type ● DTE/DCE interface breakout box with bit error rate tester (BERT).

Packaging ● hand-held unit.

Functions ● monitors EIA RS-232C/CCITT V.24 DTE and DCE interface leads via individual LED indicators ● supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface ● performs bit/block error rate testing (BERT/BLERT); transmits 63-, 511-, 2047-, 4095-bit pseudo-random test pattern; 1000 bits per block; 1/10/100/1K/10K blocks or continuous; FOX message generator; alternate mark space, steady mark, steady space ● displays bit/block error count (blocks received and faults 0 to 9999) ● displays RTS/CTS delay in milliseconds ● displays pulse trap transitions.

Parameters ● asynchronous, synchronous, half-/full-duplex ● selectable clock rates at 50/75/110/134.5/150/200/300/600/1200/1800/2400/3600/4800/7200/9600/14.4K/19.2K; external clock to 19.2K bps ● 5/6/7/8 bits per character ● 1, 1.5, 2 stop bits ● odd/even/no parity/mark/space ● EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics ● 11 LED indicators monitor key DTE and DCE interface signals; 2 spare LED indicators for sensing positive/negative signal levels on any lead ● 6 LED status indicators ● 16-character alpha LED display for counts and measurements ● pin-jacks test points, 1 per DTE and 1 per DCE interface; 18 pin-jacks test points connected to specific DTE/DCE interface leads via jumper cables ● 32 rocker switches; DTE/DCE lead for testing or crosspatching.

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Features/Options • AC/battery powered; battery recharger; jumper cables.

Cost/Service • $1,495 purchase basic unit • quantity discounts • 1-year warranty • factory service.

□ CTS2—Data Communication Test Set

Application • software and protocol failure analysis • DTE/DCE interface signal failure analysis • detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type • interactive line monitor/protocol analyzer • bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode • nonprogrammable; key-selectable operating parameters.

Packaging • hand-held unit with carrying case.

Functions • monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 1023 characters • continuously displays transmission as received; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers • 1023-character maximum trap start sequence; 1023-character maximum stop trap sequence; traps up to 1023 characters starting at beginning of capture memory • trap sequence character or bit masking; maximum mask (don't care) 25 characters; bit matching • performs LRC/CRC/VRC error checking • stores lead status of DTE/DCE interface • bit/block error rate test (BERT/BLERT); transmits 63-bit, 511-bit, 2047-bit, 4095-bit pseudo-random test pattern error injection; FOX message; user-keyed test message up to 1023 characters • DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for 13 leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters • asynchronous, synchronous, half- or full-duplex; internal selectable clock rates at 50/75/110/134.5/150/200/300/600/1200/1800/2400/3600/4800/7200/9600/14.4K/19.2K bps; external clock to 19.2K bps • ASCII, EBCDIC, HEX code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, SDLC NRZI, ASCII user-selected protocol • RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 16-character LED display • displays in hex or alpha; does not display, receive and transmit data concurrently • hex touch-sensitive keypad • 1023-character capture memory; 1023-character output buffer • RS-232C.

Features/Options • event counters • event triggers.

Cost/Service • $1,995 purchase basic unit • quantity discounts • 1-year warranty • factory service.

□ CTS3—Programmable Data Communication Test Set

Application • software and protocol failure analysis • DTE/DCE interface signal failure analysis • detection and isolation of performance degradation of failures in DTE, DCE, or communication line.

Device Type • interactive line monitor/protocol analyzer • bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode • programmable via vendor-supplied diagnostic programs, user-created diagnostic programs • programmable via menu-selectable operating parameters.

Packaging • hand-held unit with carrying case.

Functions • monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 2048 characters • continuously displays transmission as received; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers • traps up to 2048 characters starting at beginning, middle, end of capture memory • trap sequence character; maximum mask (don't care) 25 characters; bit matching • performs LRC/CRC/VRC error checking • stores lead status of 5 DTE/DCE interface leads • bit/block error rate test (BERT/BLERT); transmits 63-bit,

511-bit, 2047-bit, 4095-bit pseudo-random test patterns; error injection; FOX message; user-keyed test message up to 2048 characters • DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for 13 leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters • asynchronous, synchronous, half- or full-duplex; internal selectable clock rates up to 19.2K bps; external clock to 19.2K bps • ASCII, EBCDIC, HEX user-selected code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, SDLC NRZI, ASCII user-selected protocol • RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 16-character LED display • displays in hex or alpha; displays receive and transmit data concurrently; transmit or receive data identified via underline • hex touch-sensitive keypad • 2048-character capture memory; 100-step program memory; 2048-character output buffer • RS-232C.

Features/Options • event counters • event triggers • optional RAM PACK expands memory to 4096 characters; optional ROM PACKS.

Cost/Service • $2,495 purchase basic unit; $2,995 purchase full-featured unit • quantity discounts • 1-year warranty • factory service.

□ EIA Interface Test Sets—Models ITS 1, 2 & 3

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 DTE and DCE interface leads via individual LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 11 LED indicators monitor key DTE and DCE interface signals; 2 spare LED indicators for monitoring positive or negative interface signals on any lead • ITS 3 contains tri-state LED indicators to sense high/low signals • ITS 2 LEDs powered by signal leads • 48 pin-jacks test points, 1 per DTE and 1 per DCE interface lead • 24 rocker switches; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • ITS 1 and 3 are battery powered; jumper cables.

Cost/Service • ITS 1: $175; ITS 2: $99; ITS 3: $225 purchase basic unit • quantity discounts • 1-year warranty • factory service.

■ EPICOM INC

411 Josiane Avenue, Altamonte Springs, FL 32701 • 305-331-1640.

□ Epiview 100 Series

Application • software and protocol failure analysis • DTE/DCE interface signal failure analysis.

Device Type • passive line monitor/protocol analyzer • bit-/byte-oriented communication protocol monitor • accommodates external cartridge tape storage (standard DC-300 tape unit); 1975K-character capacity • nonprogrammable; switch-selectable operating parameters.

Packaging • portable unit with carrying case • rackmount unit.

Functions • monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis • continuously displays transmission as received; selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence • 1-character maximum start/stop trap sequence; traps up to 4096 characters starting at middle of capture memory • performs odd/even parity; frame error

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checking • DTE/DCE RS-232C interface breakout panel for signal testing; LED status indicators for 12 leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters • asynchronous/synchronous/isochronous; half-/full-duplex; internal selectable clock rates up to 100K bps; external clock to 100K bps • ASCII, EBCDIC, Hex, and 2 user optional codes; 5/6/7/8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, SDLC NRZI, BSC, ASCII, or other protocols • RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 5-inch diagonal CRT screen; 512 character positions; 32 characters per line by 16 lines • displays in hex or alpha • displays receive and transmit data concurrently via alternate lines • no keyboard or keypad provided • 4096-character program and data memory (Model 120 only) • no recorder output; user must tape source at same time monitor is running using external recorder (Epitape Ei200) connected in series with monitor.

Features/Options • event triggers • options include SDLC monitor capability; extra code sets; data capture memory (page memory); does not allow scrolling).

Cost/Service • $3,950 purchase basic unit; $4,500 purchase full-featured unit • quantity discounts • 1-year warranty • factory service.

☐ Episolver 400

Application • software and protocol failure analysis • DTE/DCE interface signal failure analysis.

Device Type • passive line monitor/protocol analyzer • bit-/byte-oriented communication protocol monitor • accommodates external cartridge tape storage (standard DC-300 tape unit); 1975K-character capacity • nonprogrammable; switch-selectable operating parameters.

Packaging • portable unit with carrying case • rackmount unit.

Functions • monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis • continuously displays transmission as received; selectively freezes displayed transmission for visual analysis and/or triggers 4-character maximum start/stop sequence; traps up to 2000/4000 characters starting at middle of capture memory • performs odd/even parity; frame error checking • DTE/DCE RS-232C interface breakout panel for signal testing; LED status indicators for 12 leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters • asynchronous/synchronous/isochronous; half-/full-duplex; internal selectable clock rates up to 100K bps; external clock to 100K bps • ASCII, EBCDIC, Hex, and 2 optional user codes; 5/6/7/8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, SDLC NRZI, BSC, ASCII, or other protocols • RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 5-inch diagonal CRT screen; 512-character positions; 32 characters per line by 16 lines • displays in hex or alpha • displays receive and transmit data concurrently via alternate lines • no keyboard or keypad provided • RS-170 composite video output for external CRT monitor • 2048-/4096-character program and data memory • no recorder output; user must tape the source at the same time monitor is running using external recorder (Epitape Ei2000) connected in series with monitor.

Features/Options • 1 event counter • 1 interval timer • event triggers • sets up to 2 resync characters • options include refresh memory; serial memory; counter; extra code sets; composite video; test pattern output; character generator.

Cost/Service • $5,500 purchase basic unit; $8,000 purchase full-featured unit • quantity discounts • 1-year warranty • factory service.

☐ Epilert 301

Application • detection and isolation of performance degradation or failures in DTE, DCE, or communication line • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box with bit error rate tester (BERT).

Packaging • rackmount unit.

Functions • monitors EIA RS-232C/CCITT V.24; DTE/DCE interface leads via LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface • supports signal level measurement via internal test equipment • performs bit/block error rate testing (BERT/BLERT); transmits 511-/2047-bit pseudo-random test pattern; error injection • displays error count • displays RTS/CTS delay in milliseconds.

Parameters • asynchronous/synchronous/isochronous; half-duplex; selectable clock rates up to 9600 bps (up to 100K bps optional) • EIA RS-232C/CCITT V.24; CCITT V.35; AT&T 303; MIL-188C; DTE/DCE interface.

Characteristics • 12 LED indicators monitor key DTE and DCE interface signals; pair 4-digit continuous displays for 12-line measurements and test parameters; displays sync loss, distortion levels, dB level of telco line; includes frequency counter for receive/transmit clock 12 pin-jacks test points connected to specific DTE/DCE interface leads via jumper cables.

Features/Options • additional data rates optional.

Cost/Service • $3,900 purchase basic unit; over $4,000 purchase full-featured unit with 1 or more additional data rate sets • quantity discounts • 1-year warranty • factory service.

■ GANDALF DATA INC

1019 South Noel, Wheeling, IL 60090 • 312-541-6060.

☐ TTS 400C

Application • detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type • test message generator/error detector.

Packaging • rackmount unit • standalone unit.

Functions • performs bit/block error rate testing (BERT/BLERT) for constant and controlled carrier; transmits 2047-bit pseudo-random test pattern; error injection; alternate mark space; monitors 20-mA current-loop interface.

Parameters • asynchronous/synchronous; half-/full-duplex; transparent to codes and protocols; synchronous up to 256K bps; selectable asynchronous rates at 75/110/134.5/150/300/1200/1800/2400/4800/9600/19.2K bps • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 6 LED indicators monitor key DTE and DCE interface signals; 1 LED indicator for missing data/lost message; 3-digit display for detected errors and CTS/DCD timing measurements.

Cost/Service • $985 purchase • quantity discounts • 1-year warranty • factory service.

■ GENERAL DATACOMM INDUSTRIES, INC

Middlebury, CT 06762-0299 • 203-574-1118.

☐ BERT 901

Application • detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type • test message generator and comparator.

Packaging • portable unit • rackmount unit.

Functions • performs bit/block error rate testing (BERT/BLERT); transmits 63/511/2047-bit pseudo-random test pattern or user selectable 8-bit pattern; steady space • displays error count and seconds.

Parameters • asynchronous; synchronous; half-/full-duplex; selectable clock rates at 75/110/134.5/150/300/600/1200/1800/2000/2400/3600/4800/7200/9600/19.2K/38.4K/50K/76.8K/1.544M bps; external clock to 10M bps; block size 1 to 99,999 bits, thumbwheel selectable • EIA RS-232C/CCITT V.24; CCITT V.35 option; AT&T 303 option; MIL-188C option; TTL interface option; T1 interface option DTE/DCE interface.

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Characteristics • 3 6-digit displays for bit error count, block error count, and block count.

Features/Options • optional interfaces • optional WECO 911 compatible • 1600-bps option • RTS/CTS delay timer option.

Cost/Service • $2,420 purchase basic unit; $3,675 purchase full-featured unit (with 1 optional interface) • quantity discounts • 1-year warranty • service centers.

■ HALCYON COMMUNICATIONS, INC

1 Halcyon Plaza, 2121 Zanker Road, San Jose, CA 95101 • 408-293-9970.

□ 801A Data Link Analyzer

Application • software and protocol failure analysis • optional detection and isolation of performance degradation or failures in DTE, DCE, or communication line • DTE/DCE interface signal failure analysis.

Device Type • optional interactive line monitor/protocol analyzer • optional passive line monitor/protocol analyzer • optional bit-/byte-oriented communication protocol monitor • optional byte-oriented interactive mode • programmable via menu-selectable operating parameters.

Packaging • portable unit with carrying case • rackmount unit.

Functions • monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis • simulates DTE or DCE via Printer/Poll/BERT option; interactive mode transmits user-keyed message up to 240 characters • downline loads program parameters to remote monitor via Printer/Poll/BERT option • continuously displays transmission as received; selectively captures specific transmission segment for visual analysis via entered trap sequence • 2 strings of 8 characters maximum trap start/stop sequence; traps up to 8K characters in a continuous loop at beginning, middle, or end of capture memory • trap sequence character or bit masking; maximum mask 8 characters • trigger-selective capture via search by error • performs odd/even parity; LRC/CRC error checking • optional bit/block error rate test (BERT/BLERT); transmits 511-/2047-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 240 characters in asynchronous mode • DTE/DCE RS-232C interface breakout panel for signal testing; LED status indicators for 10 leads; breakout switches open/close connection between individual leads; 4 individual pin jacks for DTE/DCE interface signal lead reconfiguration with Printer/Poll/BERT option.

Parameters • asynchronous/synchronous; half-/full-duplex; internal selectable clock rates at 50/75/110/134.5/150/200/300/600/1200/2400/4800/9600/19.2K bps; external clock to 56K bps • ASCII, EBCDIC, 2740 EBCD, NCD, Correspondence, Baudot, IPARS; optional user-selected code; 5/6/7/8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; asynchronous, bit, and byte synchronous protocols • RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 5-inch diagonal CRT screen; 512 character positions; 32 characters per line by 16 lines plus 2 status lines • displays in hex or alpha • displays receive and transmit data concurrently on the same line via time multiplexing; receive data identified via reverse video • hex standard; touch-sensitive keypad • RS-170 composite video output for external CRT monitor • 8K-byte program and data memory • optional RS-232C parallel printer output.

Features/Options • 1 event counter • 1 interval timer • event triggers • bit shift • options include X.25 protocol monitoring; Printer/Poll/BERT option provides byte-synchronous interactive ability; includes current-loop interface.

Cost/Service • $3,995 purchase basic unit • quantity discounts • 1-year warranty • service centers.

□ 802A Data Link Monitor

Application • software and protocol failure analysis • optional detection and isolaton of performance degradation or failures in DTE, DCE, or communication line • DTE/DCE interface signal failure analysis.

Device Type • optional interactive line monitor/protocol analyzer • optional passive line monitor/protocol analyzer • optional bit-/byte-oriented communication protocol monitor • optional byte-oriented interactive mode • contains optional integral cartridge tape storage; 500K-character capacity • programmable via menu-selectable operating parameters.

Packaging • portable unit with carrying case • rackmount unit.

Functions • monitors, captures, displays, and optionally records transmissions received from DTE or DCE interactive for visual analysis • simulates DTE or DCE via Printer/Poll/BERT option; interactive mode transmits user-keyed message up to 240 characters • downline loads program parameters to remote monitor via Printer/Poll/BERT option • continuously displays transmission as received; selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers • 3 strings of 8 characters maximum start/stop sequence; traps up to 6K characters in a continuous loop at beginning, middle, or end of capture memory • trap sequence character or bit masking; maximum mask 8 characters • records from line • trigger-selective recording via character sequence; via search by error • performs odd/even parity; LRC/CRC error checking • stores lead status of 1 selected DTE/DCE interface lead • optional bit/block error rate test (BERT/BLERT); transmits 511-/2047-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 240 characters in asynchronous mode • DTE/DCE RS-232C interface breakout panel for signal testing; LED status indicators for 21 leads; 4 individual pin jacks for DTE/DCE interface signal lead reconfiguration with Printer/Poll/BERT option.

Parameters • asynchronous/synchronous; half-/full-duplex; internal selectable clock rates at 50/75/110/134.5/150/200/300/600/1200/2400/4800/9600/19.2K bps; external clock to 56K bps • ASCII, EBCDIC, 2740 EBCD, BCD, Correspondence, Baudot, IPARS; optional user-selected code; 5/6/7/8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; asynchronous, bit, and byte synchronous protocols • RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 7-inch diagonal CRT screen; 512 or 1024 character positions; 32 characters per line by 16 lines, or 64 characters by 16 lines • displays in hex or alpha • displays receive and transmit data concurrently via alternate lines or on same line via time multiplexing • hex standard; touch-sensitive keypad • RS-170 composite video output for external CRT monitor (both black and white, and/or color) • 2K-byte program and data memory • optional RS-232C parallel printer output • external recorder output.

Features/Options • 33 event counters • 2 interval timers • event triggers • bit inversion • bit shift • bit reversal • turnaround-time measurement; transparent synchronization • options include X.25 protocol monitoring; Printer/Poll/BERT option provides byte-synchronous interactive ability; includes current-loop interface.

Cost/Service • $7,995 purchase basic unit • quantity discounts • 1-year warranty • service centers.

□ 803B Data Link Analyzer

Application • software and protocol failure analysis • detection and isolation of performance degradation or failures in DTE, DCE, or communication line • DTE/DCE interface signal failure analysis.

Device Type • interactive line monitor/protocol analyzer • passive line monitor/protocol analyzer • bit-/byte-oriented communication protocol monitor • bit-/byte-oriented interactive mode • contains integral cartridge tape storage; 120K-character capacity • programmable via vendor-supplied diagnostic programs and user-created diagnostic programs • programmable via menu-selectable operating parameters.

Packaging • portable unit with carrying case • rackmount unit.

Functions • monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis • simulates DTE or DCE; interactive mode transmits user-keyed message up to

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to 256 characters ● downline loads program parameters to remote monitor ● continuously displays transmission as received; selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 64-character maximum trap start sequence ● 32-character maximum stop trap sequence; traps up to 1K/2K characters in a continuous loop at beginning, middle, or end of capture memory ● trap sequence character or bit masking; maximum mask any number of characters; any number of bit matching ● records from capture memory ● trigger-selective recording via DTE/DCE lead status; via character sequence; via search by error ● performs odd/even parity; LRC/CRC error checking ● stores lead status of DTE/DCE interface leads ● bit/block error rate test (BERT/BLERT); transmits 511-bit pseudo-random test pattern; error injection; user-keyed test message up to 256 characters ● DTE/DCE RS-232C interface breakout panel for signal testing; LED status indicators for 21 leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration with Printer/Poll/BERT option.

Parameters ● asynchronous/synchronous; half-/full-duplex; internal selectable clock rates at 50/75/110/134.5/150/200/300/600/1200/2400/4800/9600/19.2K bps ● ASCII, EBCDIC, 2740, Correspondence, Baudot, Hex code; 5/6/7/8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; asynchronous bit and byte synchronous protocols ● RS-232C/CCITT V.24; 20/40/60-mA current-loop DTE/DCE interface.

Characteristics ● 5-inch diagonal CRT screen; 256 character positions; 32 characters per line by 8 lines ● displays in hex or alpha ● displays receive and transmit data concurrently via alternate lines; via split screen ● RS-170 composite video output for external CRT monitor (both black and white, and/or color) ● 2K- or 4K-character program and data memory, 1K-character program memory with battery backup; up to 4K-character output buffer ● RS-232C parallel printer output ● external recorder output.

Features/Options ● 10 event counters ● 3 interval timers ● event triggers ● bit inversion ● bit shift ● bit reversal ● options include independent stop and start traps; IPARS/SABRE protocol; 4K-character additional RAM capture memory; custom code options (up to 3 per unit); monitor and emulation of BSC transparent text; line printer.

Cost/Service ● $15,995 purchase basic unit; $16,990 purchase full-featured unit ● quantity discounts ● 1-year warranty ● service centers.

■ **HARD ENGINEERING, INC**

2804-B Memorial Parkway, SW, Huntsville, AL 35801 ● 205-533-2663.

☐ **Model 625 Byte Bug Data Line Monitor**

Application ● software and protocol failure analysis ● DTE/DCE interface signal failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type ● interactive line monitor/protocol analyzer ● bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode ● programmable via vendor-supplied diagnostic programs or user-created diagnostic programs ● programmable via menu-selectable operating parameters.

Packaging ● portable unit with carrying case.

Functions ● monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 1000 characters ● downline loads program parameters to remote monitor ● continuously displays transmission as received, selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 32-character maximum trap start sequence; 32-character maximum stop trap sequence; traps up to 8K characters starting at beginning of capture memory ● trap sequence character or bit masking; maximum mask (don't care) 32 characters; 256 bits; bit

matching ● performs odd/even parity, LRC/CRC/CRC-16/VRC error checking ● stores lead status of 10 DTE/DCE interface leads ● bit/block error rate test (BERT/BLERT); transmits 511-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 128 characters ● DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for 20 leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous, synchronous, isochronous, half- or full-duplex; internal clock rates up to 153K bps; external clock to 240K bps; ASCII, EBCDIC, HEX, Baudot user-selected code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, BDLC, BSC, ASCII user-selected protocol ● RS-232C/CCITT V.24, CCITT V.35, RS-422, RS-423 DTE/DCE interface.

Characteristics ● 20-character dot-matrix display ● displays in hex or alpha; displays receive and transmit data concurrently via split screen; transmit or receive data identified via reverse video or underline ● alpha tactile keyboard ● RS-170 composite video output for external CRT monitor ● 8K-character capture memory; 2K-character program memory; 1K-character output buffer; 8 buffers ● RS-232C.

Features/Options ● event triggers ● optional 8K RAM modification memory.

Cost/Service ● $2,395 purchase basic unit; $2,595 purchase full-featured unit ● quantity discounts ● 1-year warranty ● factory service.

☐ **Model 635 Byte Bug Data Line Monitor**

Application ● software and protocol failure analysis ● DTE/DCE interface signal failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type ● interactive line monitor/protocol analyzer ● bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode ● 8K-character capacity ● programmable via vendor-supplied diagnostic programs or user-created diagnostic programs ● programmable via menu-selectable operating parameters.

Packaging ● portable unit with carrying case.

Functions ● monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 1000 characters ● downline loads program parameters to remote monitor ● continuously displays transmission as received, selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 32-character maximum trap start sequence; 32-character maximum stop trap sequence; traps up to 8K characters starting at beginning of capture memory ● trap sequence character or bit masking; maximum mask (don't care) 32 characters; 256 bits; bit matching ● performs odd/even parity, LRC/CRC/CRC-16/CCITT/VRC error checking ● stores lead status of 10 DTE/DCE interface leads ● bit/block error rate test (BERT/BLERT); transmits 511-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 128 characters ● DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for 20 leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous, synchronous, half- or full-duplex; internal clock rates up to 153K bps; external clock to 240K bps ● ASCII, EBCDIC, HEX, Baudot, IPARS user-selected code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, SDLC NRZI, IPARS, BSC, ASCII user-selected protocol ● RS-232C/CCITT V.24, RS-449, CCITT V.35 DTE/DCE interface.

Characteristics ● 20-character dot-matrix display ● displays in hex or alpha; displays receive and transmit data concurrently via split screen; transmit or receive data identified via reverse video or underline ● alpha tactile keyboard ● RS-170 composite video output for external CRT monitor ● 24K-character capture

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memory; 8K-character program memory; 16 1K-character output buffers • RS-232C.

Features/Options • event triggers • optional 8K RAM modification memory; optional 8K external RAM PACK.

Cost/Service • $2,795 purchase basic unit; $3,295 purchase full-featured unit • quantity discounts • 1-year warranty • factory service.

■ HEWLETT-PACKARD/Telecommunications Division

5070 Centennial Boulevard, Colorado Springs, CO 80907 • 303-593-8700.

□ HP 4951A Protocol Analyzer

Application • software and protocol failure analysis • DTE/DCE interface signal failure analysis • detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type • interactive line monitor/protocol analyzer • bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode • contains integral cartridge tape storage; 512K-character capacity • programmable via vendor-supplied diagnostic programs, user-created diagnostic programs • programmable via menu-selectable operating parameters.

Packaging • 2116 portable unit with carrying case.

Functions • monitors, captures, displays, and optionally records transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 1750 characters • downline loads program parameters to remote monitor • continuously displays transmission as received, selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers • 63-character maximum trap start sequence; 63-character maximum stop trap sequence; traps up to 32K characters starting at beginning of capture memory • trap sequence character or bit masking; maximum mask (don't care) 63 characters; 504 bits; bit matching • records from line or capture memory; trigger-selective recording via DTE/DCE interface signal changes, via character sequence, via search by marker, or via search by error • performs odd/even parity, LRC/CRC/VRC error checking • stores lead status of 5 DTE/DCE interface leads • bit/block error rate test (BERT/BLERT); transmits 63-bit, 511-bit, 2047-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 1750 characters • DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for all leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters • asynchronous, synchronous, half- or full-duplex; internal selectable clock rates at 50/75/100/134.5/150/300/600/1200/1800/2000/2400/3200/3600/4800/7200/9600/12K/14.4K/16K/19.2K bps; external clock to 19.2K bps; record rate to 9.6K bps • ASCII, EBCDIC, EBCD, Baudot, IPARS, SBT user-selected code; 5-, 6-, 7-, 8-, 9-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; X.25, HDLC, SDLC, SDLC NRZI, IPARS, BSC, ASCII user-selected protocol • RS-232C/CCITT V.24, RS-449 DTE/DCE interface.

Characteristics • 5-inch (diagonal) CRT screen; 512 character positions; 32 characters per line by 16 lines • displays in hex or alpha; displays receive and transmit data concurrently via alternate lines, via split screen; receive data identified via reverse video, underline, or blinking • hex/alpha tactile keyboard • RS-170 composite video output for external CRT monitor • 32K-character capture memory; 8K-character program memory, menu technique; 1750-character output buffer • RS-232C.

Features/Options • auto setup • 5 event counters • 5 internal timers • event triggers • bit inversion • bit reversal • factory-supplied machine code programs, PODS 449 and 232.

Cost/Service • $3,595 purchase basic unit; $4,845 purchase full-featured unit • quantity discounts • 1-year warranty • service centers.

□ HP 4953A Protocol Analyzer

Application • software and protocol failure analysis.

Device Type • interactive line monitor/protocol analyzer • bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode • contains integral cartridge tape storage; 512K-character capacity • programmable via vendor-supplied diagnostic programs or user-created diagnostic programs • programmable via menu-selectable operating parameters.

Packaging • 3516 portable unit with carrying case.

Functions • monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 1750 characters • downline loads program parameters to remote monitor • continuously displays transmission as received, selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers • 63-character maximum trap start sequence; 63-character maximum stop trap sequence; traps up to 256K characters starting at beginning of capture memory • trap sequence character or bit masking; maximum mask (don't care) 63 characters; 504 bits; bit matching • records from line or capture memory; trigger-selective recording via DTE/DCE interface signal changes, via character sequence, via search by marker, or via search by error • performs odd/even parity, LRC/CRC/VRC error checking • stores lead status of 15 DTE/DCE interface leads • 2 LED status indicators for all leads.

Parameters • asynchronous, synchronous, half- or full-duplex; internal selectable clock rates at 50 bps to 72K bps; external clock to 256K bps; record rate to 48K bps • ASCII, EBCDIC, Transcode, Baudot, IPARS user-selected code; 5-, 6-, 7-, 8-, 9-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; X.25, HDLC, SDLC, SDLC NRZI, DDCMP, BSC, ASCII user-selected protocol • RS-232C/CCITT V.24, RS-449, CCITT V.35, MIL-188C DTE/DCE interface.

Characteristics • 9-inch (diagonal) CRT screen; 2000 character positions; 80 characters per line by 25 lines • displays in hex or alpha; displays receive and transmit data concurrently via alternate lines, via split screen; receive data identified via reverse video, underline, or blinking • hex/alpha tactile keyboard • RS-170 composite video output for external CRT monitor • 64K-character capture memory; 8K-character program memory; 1750-character output buffer • RS-232C.

Features/Options • 5 event counters • 5 internal timers • event triggers • options include 256K data buffer, 432K program memory, interface PODS for RS-232C, V.35, MIL-188C, and RS-449, breakout box.

Cost/Service • $12,000 purchase basic unit; $13,950 purchase full-featured unit • quantity discounts • 1-year warranty • service centers.

□ HP 4955A Protocol Analyzer

Application • software and protocol failure analysis.

Device Type • interactive line monitor/protocol analyzer • bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode • contains dual integral cartridge tape storage; 512K-character capacity per cartridge • programmable via vendor-supplied diagnostic programs or user-created diagnostic programs • programmable via menu-selectable operating parameters.

Packaging • 4916 portable unit with carrying case; rackmount unit.

Functions • monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 1750 characters • downline loads program parameters to remote monitor • continuously displays transmission as received, selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap

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sequence and/or triggers ● 63-character maximum trap start sequence; 63-character maximum stop trap sequence; traps up to 256K characters starting at beginning of capture memory ● trap sequence character or bit masking; maximum mask (don't care) 63 characters; bit matching ● records from line or capture memory; trigger-selective recording via DTE/DCE interface signal changes, via character sequence, via search by marker, or via search by error ● performs odd/even parity, LRC/CRC/VRC error checking ● stores lead status of 15 DTE/DCE interface leads.

Parameters ● asynchronous, synchronous, half- or full-duplex; internal selectable clock rates at 50K bps to 72K bps; external clock to 72K bps; record rate to 9.6K bps ● ASCII, EBCDIC, EBCD, Baudot, IPARS, user-selected code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, SDLC NRZI, IPARS, BSC protocol ● RS-232C/CCITT V.24, RS-449, CCITT V.35, MIL-188C DTE/DCE interface.

Characteristics ● 9-inch (diagonal) CRT screen; 2000 character positions; 80 characters per line by 25 lines ● displays in hex or alpha; displays receive and transmit data concurrently via alternate lines, via split screen; receive data identified via reverse video, underline, or blinking ● hex/alpha tactile keyboard ● 256K-character capture memory; 8K-character program memory; 1750-character output buffer ● RS-232C parallel printer output HP-IB.

Features/Options ● 5 event counters ● 5 internal timers ● event triggers ● optional BASIC programming language ● optional rackmount kit ● optional breakout box.

Cost/Service ● $18,680 purchase basic unit; $19,880 purchase full-featured unit ● quantity discounts ● 1-year warranty ● service centers.

■ IDACOM ELECTRONICS LIMITED

4332 97th Street, Edmonton, AB T6E 5R9 ● 403-438-2468.

☐ IDA-R.A.T. Remote Access Tester

Application ● software and protocol failure analysis ● DTE/DCE interface signal failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type ● remote-controlled, unattended, interactive line monitor/protocol analyzer ● bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode ● contains integral dual diskette storage, 800K-character capacity per diskette ● programmable via vendor-supplied diagnostic programs or user-created diagnostic programs ● programmable via menu-selectable operating parameters.

Packaging ● rackmount unit.

Functions ● captures and records transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message ● downline loads program parameters to remote monitor ● 256-character maximum trap start sequence; 256-character maximum stop trap sequence; traps up to 12.8K characters in capture memory ● trap sequence character or masking; maximum mask (don't care) 50 characters ● records from line or capture memory; trigger-selective recording via DTE/DCE interface signal changes, via search by marker, via clock, or via search by error ● CRC error checking ● stores lead status of 7 DTE/DCE interface leads ● bit/block error rate test (BERT/BLERT); transmits 511-bit, 1023-bit, 2047-bit, 4800-bit pseudo-random test pattern; error injection; FOX message ● DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for all leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous, synchronous, half- or full-duplex; internal selectable clock rates up to 19.2K bps; external clock to 64K bps; record rate to 9.6K bps ● ASCII, EBCDIC, EBCD, BCD, Baudot, IPARS user-selected code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, IPARS, BSC, ASCII user-selected protocol ● RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics ● 256K-character capture memory; 700K-character program memory; 2K-character output buffer ● RS-232C.

Features/Options ● options include high-speed option 64K, monitor, keyboard, X.25 Test Pack, X.25 Simulator, Intelligent Monitor, X.25 Data Recording Analysis Package.

Cost/Service ● $16,800 purchase basic unit; $30,000 purchase full-featured unit ● quantity discounts ● 1-year warranty ● factory service ● service centers.

☐ IDA-TC Protocol Test Computer

Application ● software and protocol failure analysis ● DTE/DCE interface signal failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type ● interactive line monitor/protocol analyzer ● bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode ● contains integral dual diskette storage, 800K-character capacity per diskette ● programmable via vendor-supplied diagnostic programs or user-created diagnostic programs ● programmable via menu-selectable operating parameters.

Packaging ● rackmount unit.

Functions ● monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 66K characters ● downline loads program parameters to remote monitor ● continuously displays transmission as received, selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 256-character maximum trap start sequence; 256-character maximum stop trap sequence; traps up to 12.8K characters in capture memory ● trap sequence character; maximum mask (don't care) 50 characters ● records from line or capture memory; trigger-selective recording via DTE/DCE interface signal changes, via search by marker, via search by error, or via clock ● performs odd/even parity, CRC error checking ● stores lead status of 7 DTE/DCE interface leads ● bit/block error rate test (BERT/BLERT); transmits 511-bit, 1023-bit, 2047-bit, 4800-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 66K characters ● DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for all leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous, synchronous, half- or full-duplex; internal selectable clock rates up to 19.2K bps; external clock to 64K bps; record rate to 9.6K bps ● ASCII, EBCDIC, HEX, TELETEX S.61, BCD, Baudot, IPARS user-selected code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, IPARS, BSC, ASCII user-selected protocol ● RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics ● 12-inch (diagonal) CRT screen; 512 character positions; 80 characters per line by 16 lines ● displays in hex or alpha; displays receive and transmit data concurrently via alternate lines; transmit or receive data identified via underline, blinking, or color ● hex/alpha tactile keypad, keyboard ● 256K-character capture memory; 700K-character program memory; 2K-character output buffer ● RS-232C.

Features/Options ● options include high-speed option 64K, monitor, keyboard.

Cost/Service ● $19,800 purchase basic unit; $30,000 purchase full-featured unit ● quantity discounts ● 1-year warranty ● factory service ● service centers.

☐ IDA-TC Protocol Test Computer

Application ● software and protocol failure analysis ● DTE/DCE interface signal failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

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Device Type ● interactive line monitor/protocol analyzer ● bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode ● contains integral dual diskette storage; 800K-character capacity per diskette ● programmable via vendor-supplied diagnostic programs or user-created diagnostic programs ● programmable via menu-selectable operating parameters.

Packaging ● rackmount unit.

Functions ● monitors, captures, displays, and records transmissions received from DTe or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 66K characters ● downline loads program parameters to remote monitor ● continuously displays transmission as received, selectively freezes displayed transmission for visual analysis via entered trap sequence and/or triggers ● 256-character maximum trap start sequence; 256-character maximum stop trap sequence; traps up to 12.8K characters in capture memory ● trap sequence character; maximum mask (don't care) 50 characters ● records from line or capture memory; trigger-selective recording via DTE/DCE interface signal changes, via search by marker, via search by error, or via clock ● performs odd/even parity, CRC error checking ● stores lead status of 7 DTE/DCE interface leads ● bit/block error rate test (BERT/BLERT); transmits 511-bit, 1023-bit, 2047-bit, 4800-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 66K characters ● DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for all leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous, synchronous, half- or full-duplex; internal selectable clock rates up to 19.2K bps; external clock to 64K bps; record rate to 9.6K bps ● ASCII, EBCDIC, HEX, TELETEX S.61, BCD, Baudot, IPARS user-selected code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, IPARS, BSC, ASCII user-selected protocol ● RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics ● 12-inch (diagonal) CRT screen; 512 character positions; 80 characters per line by 16 lines ● displays in hex or alpha; displays receive and transmit data concurrently via alternate lines; transmit or receive data identified via underline, blinking, or color ● hex/alpha tactile keypad, keyboard ● 256K-character capture memory; 700K-character program memory; 2K-character output buffer ● RS-232C.

Features/Options ● options include high-speed option 64K, monitor, keyboard.

Cost/Service ● $19,800 purchase basic unit; $30,000 purchase full-featured unit ● quantity discounts ● 1-year warranty ● factory service ● service centers.

□ IDA-XP Protocol Analyzer

Application ● software and protocol failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line ● DTE/DCE interface signal failure analysis.

Device Type ● interactive line monitor/protocol analyzer ● bit-/byte-oriented communication protocol monitor ● bit-/byte-oriented interactive mode ● contains integral diskette storage; 750K-character capacity; accommodates 3 optional diskette drives ● programmable via vendor-supplied diagnostic programs; user-created diagnostic programs; menu-selectable operating parameters.

Packaging ● standalone unit.

Functions ● monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis ● simulates DTE or DCE; interactive mode transmits user-keyed message; length depends on program memory available ● programmable feature downline loads program parameters to remote monitor ● continuously displays transmission as received; selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap

sequence and/or triggers ● 12,144-character capture memory ● trap sequence character or bit masking; maximum mask programmable by user; bit matching ● records from line or capture memory ● trigger-selective recording via DTE/DCE interface signal changes; via character sequence; via search by marker ● performs odd/even parity; CRC error checking ● stores lead status of 8 DTE/DCE interface leads ● bit/block error rate test (BERT/BLERT); transmits 63/511/2047-bit pseudo-random test pattern; error injection; FOX message ● DTE/DCE RS-232C interface breakout panel for signal testing; LED status indicators for all leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous/synchronous; half-/full-duplex; internal selectable clock rates; 1200/1800/2000/2400/3600/4800/7200/9600 bps asynchronous and up to 64K bps synchronous; external clock to 64K bps; record rate to 9600 bps full-duplex ● easy user selected code; 5/6/7/8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; bit-/byte-oriented synchronous protocols; asynchronous emulations for X.25, X.20, X.21, X.70, X.71; MIL-188C ● RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics ● 9-inch diagonal 8-color CRT screen; 1024 character positions; 64 characters per line by 16 lines plus 1 status line ● displays in ASCII, EBCDIC, Hex, Tektex, or any character set definable by 8x12 dot matrix ● displays receive and transmit data concurrently; transmit and receive data identified via blinking; color; hex or alpha display ● tactile keypad and keyboard ● 12,144-character program and data memory; 24K-character program memory (50K expandable); can transmit entire capture output buffer ● RS-232C output port ● external recorder output.

Features/Options ● segmentable capture memory supports several traps simultaneously ● bit inversion ● bit shift ● bit reversal ● options include EBCD and Baudot code sets; X.25, X.21, X.20, X.70, and X.71 Teletex test packs; auxiliary printer port; additional block check character (BCC) types; high-speed mode; memory expansion to 80K words ● 3 optional diskette drives.

Cost/Service ● $19,500 purchase basic unit; up to $30,000 purchase full-featured unit ● quantity discounts ● 1-year warranty ● factory service ● service center in Washington, DC.

■ INFOTRON SYSTEMS CORPORATION

Cherry Hill Industrial Center, Cherry Hill, NJ 08003 ● 609-424-9400.

□ TE620 Infotester

Application ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line ● DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type ● DTE/DCE interface breakout box ● test message generator and comparator.

Packaging ● portable unit ● rackmount unit.

Functions ● monitors EIA RS-232C/CCITT V.24 interface ● supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface leads ● performs bit/block error rate testing (BERT/BLERT); transmits 63/511/2047-bit pseudo-random test pattern; user-keyed test characters; alternate mark space; steady mark; steady space ● displays error count ● measures distortion and RTS/CTS delay.

Parameters ● selectable clock rates at 50/75/110/134.5/150/300/600/1050/1200/1800/2400/3600/4800/7200/9600/19.2K bps; external clock to 1.92M bps; sends block size 1000, 10,000, 100,000 bits; 5/6/7/8-bit framing; 1, 1.5, 2 stop bits; odd/even/no parity ● EIA RS-232C/CCITT V.24; DTE/DCE interface.

Characteristics ● 14 LED indicators monitor key DTE and DCE interface signals ● 3-digit display for error count, distortion percentage, and RTS/CTS delay in milliseconds ● 15 pin-jacks test points connected to specific DTE/DCE interface.

Cost/Service ● $2,495 purchase ● 1-year warranty ● factory service.

Digital Data Communication Test Equipment

■ INTERNATIONAL DATA SCIENCES, INC

7 Wellington Road, Lincoln, RI 02865 ● 401-333-6200.

☐ Hawk 4000/4010 DataTrap

Application ● software and protocol failure analysis ● DTE/DCE interface signal failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type ● interactive line monitor/protocol analyzer ● bit-/byte-oriented communication protocol monitor ● bit-/byte-oriented interactive mode ● accommodates external cartridge tape storage (Model 7000 Datatape); 32 million bit capacity ● programmable via menu-selectable operating parameters.

Packaging ● portable unit with carrying case (4010 only) ● rackmount unit (4000 only).

Functions ● monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis ● simulates DTE or DCE; interactive mode transmits user-keyed message up to 256 characters ● continuously displays transmission as received; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 126-character maximum trap start/stop sequence; traps up to 4096 characters starting at beginning, middle, or end of capture memory ● records from line memory ● trigger-selective recording via DTE/DCE interface signal changes; via character sequence ● performs odd/even parity; CRC error checking transmits FOX message; user-keyed test message up to 256 characters ● DTE/DCE RS-232C interface breakout panel for signal testing; LED status indicators for all leads.

Parameters ● asynchronous/synchronous; half-/full-duplex; up to 19.2K bps; external clock to 19.2K bps; record rate to 19.2K bps ● ASCII, EBCDIC, EBCD, Hex, OCTAL, Correspondence, Baudot, IPARS, Transcode code; 5/6/7/8-bit framing; odd/even/no parity; 1, 1.42, 1.5, 2 stop bits; X.25, HDLC, SDLC, SDLC NRZI, ADCCP, BSC protocol ● RS-232C/CCITT V.24, MIL-188C DTE/DCE interface.

Characteristics ● (Hawk 4010) 5-inch diagonal CRT screen; 512 character positions; 32 characters per line by 16 lines (Hawk 4000) 9-inch diagonal CRT screen; 512 character positions; 32 characters per line by 16 lines ● displays in hex or alpha ● displays receive and transmit data concurrently via alternate lines; via split screen; 10-key hex tactile keypad ● RS-170 composite video output for external CRT monitor ● 4096-character program and data memory ● RS-232C output port ● external recorder output.

Features/Options ● 4 event counters ● 1 interval timer ● event triggers ● options include 20-/60-mA current-loop interface; video input (BNC); printer interface; DDCMP protocol; 1-step menu selection.

Cost/Service ● Hawk 4000; $4,995 purchase basic unit; $5,995 purchase full-featured unit ● Hawk 4010; $2,995 purchase basic unit; $4,895 purchase full-featured unit ● quantity discounts ● 1-year warranty ● factory service.

☐ Hawk 4020 Data Communications Tester

Application ● software and protocol failure analysis ● DTE/DCE interface signal failure analysis DCE, or communications line ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type ● interactive line monitor/protocol analyzer ● bit-/byte-oriented communication protocol monitor ● bit-/byte-oriented interactive mode ● programmable via menu-selectable operating parameters.

Packaging ● portable unit with carrying case; 12 pounds.

Functions ● monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis ● simulates DTE or DCE; interactive mode transmits user-keyed message up to 254 characters ● continuously displays transmission as received; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 16-character maximum trap start/stop sequence ● traps up to 1024 characters with 4-lead status or 2304 characters without lead status (optional), starting at beginning of capture memory ● stores lead status of 4 DTE/DCE interface leads ● performs odd/even parity; LRC/CRC error checking; transmits 511-/2047-bit pseudo-random test pattern (block sizes from 100 to 10,000,000 bits); FOX message; user-keyed test message up to 254 characters ● up to 245 user-defined PROM-resident messages ● counts total polls; in/out errors ● DTE/DCE RS-232C interface breakout panel for signal testing; LED status indicators for 12 leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous/synchronous; half-/full-duplex; up to 19.2K bps; 16 internal selectable clock rates; external clock to 19.2K bps ● ASCII, EBCDIC, HEX; 1 optional user-selected code; 5/6/7/8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; ASCII, BSC, SDLC/HDLC (NRZ or NRZI) protocol ● RS-232C optional MIL-188C, optional TTY DTE/DCE interface.

Characteristics ● single-line, 5x12 dot-matrix florescent display with 16 data characters plus 4 status characters ● displays in hex or alpha ● displays receive and transmit data concurrently via underline ● hex membrane keypad ● 512 program and data memory; 255-character output buffer.

Features/Options ● 1 multifunctional event counter ● 1 multifunctional interval timer ● event triggers ● analyzes bias distortion (average/peak) ● dial-up mode call answering ● options include MIL-188C and current loop interfaces; extended capture memory up to 2304 characters without stored EIA lead status; one-step programming; extra data code; special data rate.

Cost/Service ● $1,995 purchase basic unit; $3,905 purchase full-featured unit ● quantity discounts ● 1-year warranty ● factory service.

☐ Hawk 4030 Programmable Data Communications Tester

Application ● software and protocol failure analysis ● DTE/DCE interface signal failure analysis DCE, or communications line ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type ● interactive line monitor/protocol analyzer ● bit-/byte-oriented communication protocol monitor ● bit-/byte-oriented interactive mode ● programmable via vendor-supplied diagnostic programs, user-defined diagnostic programs, and menu-selectable operating parameters.

Packaging ● portable unit with carrying case; 12 pounds.

Functions ● monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis ● simulates DTE or DCE; interactive mode transmits user-keyed message up to 254 characters ● program mode supports 100 program steps and 51 macro instructions ● downline loads program parameters to remote monitor via ROM-PAC ● continuously displays transmission as received; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 16-character maximum trap start/stop sequence ● traps up to 2304 characters starting at beginning of capture memory with 4-lead status ● performs odd/even parity; LRC/CRC error checking ● stores lead status of 4 DTE/DCE interface leads ● bit/block error rate test (BERT/BLERT); transmits 511-/2047-bit pseudo-random test pattern (block sizes from 100 to 10,000,000 bits); FOX message; user-keyed test message up to 254 characters ● up to 50 user-defined messages for maximum of 1024 bytes ● DTE/DCE RS-232C interface breakout panel for signal testing; LED status indicators for 12 leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous/synchronous; half-/full-duplex; up to 19.2K bps; internal selectable clock rates; external clock to 19.2K bps ● ASCII, EBCDIC, Hex; 1 optional user-selected code; 5/6/7/8-bit framing; odd/even/no parity, mark space; 1, 1.5, 2 stop bits; ASCII, BSC, SDLC/HDLC (NRZ NRZI) protocol ● RS-232C/CCITT V.24, optional MIL-188C, optional TTY DTE/DCE interface.

Digital Data Communication Test Equipment

Characteristics • single line, 5x12 dot-matrix florescent display with 16 data characters plus 4 status characters • displays in hex or alpha • displays receive and transmit data concurrently via underline • hex membrane keypad • 2304-character program and data memory; 1024-character output buffer.

Features/Options • 1 multifunctional event counter • 1 multifunctional interval timer • event triggers • program mode supported by 50 user-defined registers • analyzes bias distortion (average/peak) • dial-up mode call answering • options include MIL-188C and current-loop interfaces; ROM-PAC (Model 4031) for user programs; one-step programming; extra data code; special data rate.

Cost/Service • $3,995 purchase basic unit; $6,190 purchase full-featured unit • quantity discounts • 1-year warranty • factory service.

☐ 50 EIA Interface Monitor

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 DTE/DCE interface leads via LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24; DTE/DCE interface.

Characteristics • 12 LED indicators monitor key DTE and DCE interface signals • pin-jacks test points, 1 per DTE or DCE interface lead; spare LED for user-defined test point.

Features/Options • pocket-sized unit measures 4.5 x 3 x 0.5 (H x W x D) and weighs approximately 4 ounces; does not require battery or external power.

Cost/Service • $100 purchase • quantity discounts • 1-year warranty • factory service.

☐ 60/61 EIA Interface Monitor & Breakout Box

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 12 LED indicators monitor key DTE and DCE interface signals; (Model 61), 2 spare LED indicators for sensing high/low signal levels on any lead • Model 61 contains tri-state LEDs to sense high/low signal levels • 48 pin-jacks test points, 1 per DTE and 1 per DCE interface lead • 24 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • battery powered; battery recharger; jumper cables.

Cost/Service • Model 60: $159; Model 61: $265 purchase basic unit; $219 (Model 60); $325 (Model 61) purchase rechargeable unit with 115V or 230V adapter/charger • quantity discounts • 1-year warranty • factory service.

☐ 65/60 Bit Error Rate Tester & EIA Breakout Box

Application • DTE/DCE interface signal failure analysis and lead reconfiguration • detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type • DTE/DCE interface breakout box with bit error rate tester (BERT).

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface • performs bit/block error rate testing (BERT/BLERT); transmits 63-, 511-, 2047-bit pseudo-random test pattern; alternate mark space; steady mark; steady space.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 12 LED indicators monitor key DTE and DCE interface signals; 2 spare LED indicators for sensing high/low signal levels on any lead • 48 pin-jacks test points, 1 per DTE and 1 per DCE interface lead • 24 rocker switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • battery powered; battery charger; jumper cables.

Cost/Service • $650 purchase basic unit; $685 purchase adapter/charger (115 or 230 VAC) • quantity discounts • 1-year warranty • factory service.

☐ 67/60 Data Communications Tester

Application • detection and isolation of performance degradation or failures in DTE, DCE, or communication line • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box with bit error rate tester (BERT).

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 DTE/DCE interface leads via LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface • performs bit/block error rate testing (BERT/BLERT); transmits 63/511/2047-bit pseudo-random test pattern • error injection • FOX message generator in either ASCII, EBCDIC, Transcode, or Baudot; user-keyed test message up to 15 characters; polling test; echo test • displays error count up to 9999 errors.

Parameters • transparent to codes and protocols in breakout box mode • asynchronous/synchronous; 15 selectable clock rates from 75 bps to 19.2K bps; 5/6/7/8-bit framing; odd/even/no parity, mark, space; 1, 1.5, 2 stop bits • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • microprocessor controlled • 4-digit LCD for errors and hex display • 12 LED indicators monitor key DTE and DCE interface signals • pin-jack test points, 1 per DTE and 1 per DCE interface lead • 24 rocker switches, 1 per DTE/DCE interface lead, interrupt connection between DTE/DCE lead for testing or crosspatching • requires AC power source.

Features/Options • XON/XOFF response in async mode • jumper cables.

Cost/Service • $995 purchase • quantity discounts • 1-year warranty • factory service.

☐ X21/X.21 Breakout Box

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors X.21 DTE and DCE interface leads via individual LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters • transparent to codes and protocols • X.21 DTE/DCE interface.

Characteristics • 6 tri-state LED indicators monitor key DTE and DCE interface signals; 1 LED indicators for pulse trap • pin-jacks

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test points, 1 per DTE and 1 per DCE interface lead via jumper cables • 14 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing.

Features/Options • battery powered; jumper cables.

Cost/Service • $295 purchase basic unit • quantity discounts • 1-year warranty • factory service.

■ KAPUSI LABORATORIES
2121 South El Camino Real, San Mateo, CA 94403 • 415-573-5475.

□ LT1 Linktest

Application • detection and isolation of performance degradation or failures in DTE, DCE, or communication line • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box with bit error rate tester (BERT).

Packaging • hand-held unit • rackmount unit.

Functions • monitors EIA RS-232C/CCITT V.24 DTE/DCE interface leads via individual LED indicators • performs bit/block error rate testing (BERT/BLERT); transmits 511-/2047-bit pseudo-random test pattern; steady space, steady mark; error injection • displays error count • displays RTS/CTS delay up to 1999 milliseconds • displays bias distortion.

Parameters • asynchronous/synchronous; 7 selectable clock rates from 300 to 19.2K bps; external clock to 100K bps • RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 11 tri-state LED indicators monitor key DTE and DCE interface signals; additional LED indicators for data rates, operating parameters, and bias percentage • 3-digit display for bit errors and RTS/CTS delay • 11 pin-jacks test points connected to specific DTE/DCE interface.

Cost/Service • $790 purchase • 1-year warranty • factory service.

□ LT2 Linktest

Application • detection and isolation of performance degradation or failures in DTE, DCE, or communication line • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box with bit error rate tester (BERT).

Packaging • hand-held unit • rackmount unit.

Functions • monitors EIA RS-232C/CCITT V.24 or optional CCITT V.35 (via outside supplier) DTE/DCE interface leads via individual LED indicators • performs bit/block error rate testing (BERT/BLERT); transmits 511-/2047-bit pseudo-random test pattern; error injection; alternate mark space; steady mark; steady space • displays error count • displays RTS/CTS delay in milliseconds • displays bias distortion • tests both primary and secondary channels.

Parameters • asynchronous/synchronous; selectable clock rates at 75/150/300/600/1200/2400/4800/9600/19.2K bps (async and sync), TC from DTE); synchronous rates up to 100K bps (clocked by modem TC) • EIA RS-232C/CCITT V.24; optional CCITT V.35 DTE/DCE interface.

Characteristics • 11 tri-state LED indicators monitor key DTE and DCE interface signals plus 5 additional leads via pushbutton control; additional LED indicators for data rates, operating parameters, and bias percentage; 3-digit display for bit errors and RTS/CTS delay 12 pin-jacks test points connected to specific DTE/DCE interface.

Features/Options • self-test diagnostics • requires AC power source.

Cost/Service • $985 purchase • 1-year warranty • factory service.

■ MULTI-TECH SYSTEMS, INC
82 Second Avenue SE, New Brighton, MN 55112 • 612-631-3550.

□ MT25 Breakout/Monitor

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 DTE/DCE interface leads via individual LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface leads.

Parameters • RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 11 LED indicators monitor key DTE and DCE interface signals; 2 LED indicators for any other user-selected signals • pin-jacks test points, 1 per DTE and 1 per DCE interface lead • 24 rocker switches, 1 per DTE/DCE interface lead, interrupt connection between selected DTE/DCE leads for testing or crosspatching.

Features/Options • does not require batteries • line powered • jumper cables.

Cost/Service • $149 purchase • quantity discounts • 1-year warranty • factory service.

■ NAVTEL
8481 Keele Street, Concord, ON L4K 1B1 • 416-669-9918.

□ Datacheck I

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 12 LED indicators monitor key DTE and DCE interface signals • pin-jacks test points, 1 per DTE and 1 per DCE interface lead • 25 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • external mark/space monitor; jumper cables.

Cost/Service • $139 purchase basic unit • quantity discounts • 6-month warranty • factory service.

□ Datacheck II

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 24 LED indicators monitor key DTE and DCE interface signals; 2 spare tri-state LED indicators for sensing high/low signal levels on any lead • mark/space/clocking/off indicators • pin-jacks test points, 1 per DTE and 1 per DCE interface lead • 25 dip-switches, 1 per DTE/DCE interface; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • dual pulse trap circuits to isolate intermittent

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signals; battery powered; jumper cables ● optional VF monitor and bit rate counter.

Cost/Service ● $239 purchase basic unit ● quantity discounts ● 6-month warranty ● factory service.

☐ Datacheck III

Application ● DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type ● DTE/DCE interface breakout box.

Packaging ● hand-held unit.

Functions ● monitors EIA RS-422/CCITT V.11 and RS-423/CCITT V.10 DTE and DCE interface leads via individual LED indicators ● supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters ● transparent to codes and protocols ● EIA RS-422/CCITT V.11 and EIA RS-423/CCITT V.10 DTE/DCE interface ● compatible with CCITT X.26/X.27 specification.

Characteristics ● 12 LED indicators monitor key DTE and DCE interface signals; 2 spare tri-state LED indicators for sensing high/low signal levels on any lead ● mark/space/clocking/off indicators ● pin-jacks test points, 1 per DTE and 1 per DCE interface lead ● 15 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options ● dual pulse trap circuits to isolate intermittent signals ● battery powered; jumper cables ● options include an RS-232C/V.24 interface converter, VF monitor, and bit rate counter.

Cost/Service ● $239 purchase basic unit ● quantity discounts ● 6-month warranty ● factory service.

☐ Datacheck IV

Application ● DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type ● DTE/DCE interface breakout box.

Packaging ● hand-held unit.

Functions ● EIA RS-449; DTE and DCE interface leads via individual LED indicators ● supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters ● transparent to codes and protocols ● EIA RS-449 DTE/DCE interface.

Characteristics ● 24 LED indicators monitor key DTE and DCE interface signals; 4 spare LED indicators for secondary signals ● mark/space/clock/off indicators ● 74 pin-jacks test points, 1 per DTE and 1 per DCE interface lead ● 37 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options ● dual pulse trap circuits to isolate intermittent signals ● battery powered; jumper cables ● options include VF monitor and bit rate counter.

Cost/Service ● $349 purchase basic unit ● quantity discounts ● 6-month warranty ● factory service.

☐ Datacheck V

Application ● DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type ● DTE/DCE interface breakout box.

Packaging ● hand-held unit.

Functions ● monitors CCITT V.35 DTE and DCE interface leads via individual LED indicators ● supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters ● transparent to codes and protocols ● CCITT V.35 DTE/DCE interface.

Characteristics ● 18 LED indicators monitor key DTE and DCE interface signals; 4 LED indicators (2 balanced, 2 unbalanced) for secondary signals; 4 LED indicators (2 balanced, 2 unbalanced) for pulse trap to detect intermittent signals ● mark/space/clock/off indicators ● 68 pin-jacks test points, 1 per DTE and 1 per DCE interface lead ● independent balanced/unbalanced mark/space pins ● 34 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options ● battery powered; jumper cables ● options include RS-232C/V.24 interface adapter, VF monitor, and bit rate counter.

Cost/Service ● $599 purchase basic unit ● quantity discounts ● 6-month warranty ● factory service.

■ NORTHERN TELECOM/Spectron Division

8000 Lincoln Drive East, Marlton, NJ 08053 ● 609-596-2500.

☐ D-105 Datascope

Application ● software and protocol failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line ● DTE/DCE interface signal failure analysis.

Device Type ● interactive line monitor/protocol analyzer ● bit-oriented communication protocol monitor ● bit-oriented interactive mode vendor-supplied diagnostic programs; user-created diagnostic programs; menu-selectable operating parameters.

Packaging ● portable unit with carrying case ● rackmount unit ● standalone unit.

Functions ● monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis ● simulates DTE or DCE; interactive mode transmits user-keyed message up to 128 characters ● downline loads program parameters to remote monitor; runs remotely with D-901 ● continuously displays transmission as received; selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 128-character maximum trap start sequence ● 128-character maximum stop trap sequence; traps up to 4K characters starting at beginning of capture memory ● trap sequence character or bit masking; 128-bit matching ● performs odd/even parity; LRC/CRC error checking ● stores lead status of 8 DTE/DCE interface leads ● transmits 63/511/1023/2047-bit pseudo-random test pattern ● user-keyed test message up to 128 characters.

Parameters ● asynchronous/synchronous; half-/full-duplex; internal selectable clock rates up to 19.2K bps ● ASCII, EBCDIC codes; 5/6/7/8-bit framing; HDLC, SDLC, SDLC NRZI, DDCMP, IPARS, BSC, ASCII, user-selected protocol ● RS-232C/CCITT V.24, RS-449, CCITT V.35, AT&T 303, MIL-188C, 20/40/50-mA current-loop DTE/DCE interface.

Characteristics ● 5-inch diagonal CRT screen ● displays in hex or alpha ● displays receive and transmit data concurrently via alternate lines; via split screen; transmit data identified via underline; membrane keypad ● RS-170 composite video output for external CRT monitor ● 4K-character program and data memory; 4K-character output buffer ● parallel printer output ● external recorder output.

Features/Options ● plug-in PROM modules contain diagnostic application programs ● self-test on power-up ● displays operator messages ● 15 LED indicators.

Cost/Service ● $3,300 purchase basic unit ● $3,700 full-featured unit ● quantity discounts ● factory service ● service centers.

☐ D-901 Datascope

Application ● software and protocol failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line ● DTE/DCE interface signal failure analysis.

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Device Type ● interactive line monitor/protocol analyzer ● bit-oriented communication protocol monitor ● bit-oriented interactive mode ● integral dual diskette storage; 300K-character capacity ● user-created diagnostic programs.

Packaging ● rackmount unit ● standalone unit.

Functions ● monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis ● simulates DTE or DCE; interactive mode transmits user-keyed message up to 128 characters ● downline loads program parameters to remote monitor ● continuously displays transmission as received; selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 256-character maximum trap start sequence; traps up to 64K characters starting at beginning of capture memory ● trap sequence character or bit masking ● stores user programs on diskette ● records from line or capture memory ● monitors DTE/DCE interface signal changes ● stores lead status of 8 DTE/DCE interface leads ● transmits 63/511/1023/2047-bit pseudo-random test pattern user-keyed test message up to 128 characters ● LED status indicators for all leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous/synchronous; half-/full-duplex; internal selectable clock rates up to 1.6M bps ● records at rates up to 72K bps ● ASCII, EBCDIC, EBCD, BCD, Correspondence, Baudot, IPARS, user-selected codes; 5/6/7/8/9-bit framing; HDLC, SDLC, SDLC NRZI, DDCMP, IPARS, BSC, ASCII, user-selected protocol ● RS-232C/CCITT V.24, RS-449, CCITT V.35, AT&T 303, MIL-188C, 20/40/60-mA current-loop DTE/DCE interface.

Characteristics ● 9-inch diagonal CRT screen ● displays in hex or alpha ● displays receive and transmit data concurrently via alternate lines; via split screen; transmit data identified via underline ● alpha keyboard ● RS-170 composite video output for external CRT monitor ● 4K-character program and data memory; 4K-character output buffer ● RS-232C parallel printer output.

Features/Options ● 4 event counters ● 4 interval timers ● event triggers ● bit inversion ● bit reversal.

Cost/Service ● $19,900 purchase basic unit ● quantity discounts ● factory service ● service centers ● on-site service.

☐ D-586 Datascope

Application ● software and protocol failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line ● DTE/DCE interface signal failure analysis.

Device Type ● interactive line monitor/protocol analyzer ● bit-oriented communication protocol monitor ● bit-oriented interactive mode ● cartridge tape storage ● user-created diagnostic programs; menu-selectable operating parameters.

Packaging ● rackmount unit ● standalone unit.

Functions ● monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis ● simulates DTE or DCE; interactive mode transmits user-keyed message up to 64 characters ● continuously displays transmission as received; selectively freezes displayed transmission for visual analysis ● 64-character maximum trap start sequence; traps up to 2K characters at beginning of capture memory ● trap sequence character or bit masking ● stores lead status of 8 DTE/DCE interface leads transmits 511-bit pseudo-random test pattern; FOX message; user-keyed test message up to 128 characters; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous/synchronous; half-/full-duplex; selectable clock rates up to 56K bps ● ASCII, EBCDIC, EBCD, BCD, Correspondence, Baudot, IPARS, user-selected codes; HDLC, SDLC, SDLC NRZI, DDCMP, IPARS, BSC, ASCII, user-selected protocol ● RS-232C/CCITT V.24, RS-449, CCITT V.35, AT&T 303, MIL-188C, 20/40/60-mA current-loop DTE/DCE interface.

Characteristics ● 5-inch diagonal CRT screen ● displays in hex or alpha ● displays receive and transmit data concurrently via alternate lines; transmit data identified via underline ● hex keyboard ● RS-170 composite video output for external CRT monitor ● 2K-character program and data memory; 4K-character output buffer ● RS-232C parallel printer output.

Features/Options ● 4 event counters ● 4 timers plus interrupt timer ● bit inversion ● bit reversal ● user programs to 99 steps.

Cost/Service ● $10,400 (586) purchase basic unit; $11,100 (586KT) purchase full-featured unit ● 1-year warranty.

■ NU DATA CORPORATION

32 Fairview Avenue, P.O. Box 125, Little Silver, NJ 07739 ● 201-842-5757.

☐ 920B Terminal/Test Set

Application ● software and protocol failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line ● DTE/DCE interface signal failure analysis.

Device Type ● passive line monitor/protocol analyzer and FOX message generator ● programmable via user-created diagnostic programs.

Packaging ● hand-held unit.

Functions ● monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis ● continuously displays transmission as received ● can enable or disable receive data buffer on a single character trigger ● performs odd/even parity; transmits FOX message.

Parameters ● asynchronous/synchronous; half-/full-duplex; internal selectable clock rates at 50/75/110/134.5/150/200/300/600/1050/1200/1800/2000/2400/4800/9600/19.2K bps; external clock to 19.2K bps ● ASCII, EBCDIC, Baudot, Transcode; 5/7/8/9-bit framing; odd/even parity; 1, 1.5, 2 stop bits ● RS-232C/CCITT V.24, optional 20/40/60-mA current-loop DTE/DCE interface.

Characteristics ● 16-character LED display ● displays in hex or alpha touch-sensitive keyboard ● 960-character program memory; 960-character output buffer.

Features/Options ● optional customized testing applications.

Cost/Service ● $999 purchase basic unit ● quantity discounts ● 90-day warranty ● factory service.

☐ Model 915 X.20/X.21 Interface Tester

Application ● DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type ● DTE/DCE interface breakout box.

Packaging ● hand-held unit.

Functions ● monitors X.20/X.21 DTE and DCE interface leads via individual LED indicators ● supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface ● simulates mark/space signals.

Parameters ● transparent to codes and protocols ● X.20/X.21 (15-pin) DTE/DCE interface.

Characteristics ● 6 LED indicators monitor key DTE and DCE interface signals; 2 spare LED indicators for sensing positive/negative signal levels at any lead; pulse trap senses transient positive/negative pulses indicated by 2 LEDs ● pin-jacks test points, 1 per DTE and 1 per DCE interface lead ● 14 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options ● AC/battery powered; jumper cables.

Cost/Service ● $239 purchase basic unit ● quantity discounts ● 90-day warranty ● factory service.

☐ Model 921-R2 Bit Error Rate Tester

Application ● DTE/DCE interface signal failure analysis and lead reconfiguration ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

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Device Type • DTE/DCE interface breakout box with bit error rate tester (BERT).

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface • simulates mark/space signals • performs bit/block error rate testing (BERT/BLERT); transmits 511-, 2047-bit pseudo-random test pattern; error injection; optional FOX message generator • counts every bit error; 1 per 1K bits; 1 per 2K; 1 per 4K; and 1 per 5K • displays error count.

Parameters • asynchronous, synchronous, half-/full-duplex • transparent to codes and protocols; selectable clock rates at 75/110/134/150/300/600/1200/400/4800/9600/19.2K bps for asynchronous operation; external clock to 76K bps for synchronous operation • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 7 LED indicators monitor key DTE and DCE interface signals; 2 spare LED indicators for sensing positive/negative signals at any lead • pin-jacks test points, 1 per DTE and 1 per DCE interface lead • 24 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • AC/battery powered • optional FOX generator.

Cost/Service • $695 purchase basic unit; $740 purchase full-featured unit • quantity discounts • 90-day warranty • factory service.

☐ Model 921-T2 EIA Interface Tester

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 DTE/DCE interface leads via individual LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 10 LED indicators monitor key DTE and DCE interface signals • pin-jack test points, 1 per DTE and 1 per DCE interface lead • 24 rocker switches, 1 per DTE/DCE interface lead, interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • AC power option • 2 pulse traps for positive/negative triggering • jumper cables.

Cost/Service • $139.50 purchase basic unit; $164.50 purchase full-featured unit • quantity discounts • 90-day warranty • factory service.

☐ Model 921-T3 Interface Tester

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 10-pair (red/green) LED indicators monitor key DTE and DCE interface signals; 1 pair LED indicators for sensing positive/negative signal levels at any lead • pulse trap with selectable positive/negative trigger • pin-jacks test points, 1 per DTE and 1 per DCE interface lead • 25 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • jumper cables.

Cost/Service • $169.50 purchase basic unit • quantity discounts • 90-day warranty • factory service.

☐ Model 922B Asynchronous Data Communications Test Set

Application • detection and isolation of performance degradation or failures in DTE, DCE, or communication line • optional DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • bit error rate tester (BERT) and distortion analyzer • optional DTE/DCE interface breakout box.

Packaging • portable unit • rackmount unit.

Functions o performs bit/block error rate testing (BERT/BLERT); transmits 63/511/2047-bit optional pseudo-random test pattern; FOX message generator • distortion analyzer distorts signals in 3% steps up to 47% with mark, space, or switched bias; displays distortion up to 50% • optionally monitors EIA RS-232C/CCITT V.24 DTE/DCE interface leads via individual LED indicators • optionally supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters • asynchronous; selectable clock rates at 75/150/300/600/1200/2400/4800/9600 bps; 4/5/6/7/8-bit framing; 1, 1.5, 2 stop bits; odd/even parity mark • EIA RS-232C/CCITT V.24; optional 20/40/60-mA current-loop DTE/DCE interface.

Characteristics • 8 LED indicators monitor key DTE and DCE interface signals plus 2 LED indicators for any other 2 pins monitored • pin-jack test points, 1 per DTE and 1 per DCE interface lead • rocker switches • injects display bias distortion up to 50%.

Features/Options • data inversion for TELEX or MIL-188C • optional EIA interface testing.

Cost/Service • $1,815 purchase basic unit; $2,200 purchase full-featured unit • quantity discounts • 90-day warranty • factory service.

☐ Model 937 RS-449 Interface Tester

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors EIA RS-449 DTE and DCE interface leads via individual LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface • simulates mark/space signals.

Parameters • transparent to codes and protocols • EIA RS-449 DTE/DCE interface.

Characteristics • 12 LED indicators monitor key DTE and DCE interface signals; 2 spare LED indicators for sense positive/negative signal levels on any lead • pulse trap detects positive/negative pulses • pin-jacks test points, 1 per DTE and 1 per DCE interface lead • 3 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • battery powered.

Cost/Service • $389 purchase basic unit • quantity discounts • 90-day warranty • factory service.

■ PHOENIX MICROSYSTEMS, INC

P.O. Box 4206, 8290 Whitesburg Drive, Huntsville, AL 35802 • 205-881-2173.

☐ Phoenix 500

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

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Functions ● monitors EIA RS-232C/CCITT V.24 ● supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters ● transparent to codes and protocols ● EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics ● 13 tri-state LED indicators monitor key DTE and DCE interface signals; 1 spare tri-state LED indicator senses positive/negative signal level on any lead ● 50 pin-jacks test points, 1 per DTE and 1 per DCE interface lead ● 25 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options ● AC/battery powered; jumper cables.

Cost/Service ● $199 purchase basic unit; $239 purchase full-featured unit ● quantity discounts ● 1-year warranty ● factory service ● delivery.

☐ Phoenix 1500

Application ● software and protocol failure analysis ● DTE/DCE interface signal failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type ● interactive line monitor/protocol analyzer ● byte-oriented communication protocol monitor; byte-oriented interactive mode ● programmable via vendor-supplied diagnostic programs ● programmable via menu-selectable operating parameters.

Packaging ● 416 portable unit with carrying case.

Functions ● monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis; simulates DTE or DCE; interactive mode transmits user-keyed message up to 900 characters ● downline loads program parameters to remote monitor ● continuously displays transmission as received, selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 32-character maximum trap start sequence; 32-character maximum stop trap sequence; traps up to 4K characters ● trap sequence character or bit masking; maximum mask (don't care) 32 characters; 256 bits; bit matching ● performs odd/even parity, CRC error checking ● stores lead status of 13 DTE/DCE interface leads ● bit/block error rate test (BERT/BLERT); transmits 63-bit, 511-bit, 2047-bit, 16,383-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 900 characters ● DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for 13 leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous, synchronous, half- or full-duplex; internal selectable clock rates at 50 bps to 72K bps; external clock ● ASCII, EBCDIC, SBT, Baudot, IPARS user-selected code; 5-, 6-, 7-, 8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, SDLC NRZI, BSC, ASCII user-selected protocol ● RS-232C/CCITT V.24, AT&T 303 DTE/DCE interface.

Characteristics ● 80-character LCD display; 40 characters per line by 2 lines ● displays in hex or alpha; displays receive and transmit data concurrently via split screen; transmit or receive data identified via blinking ● hex/alpha touch-sensitive keyboard ● 2048-character capture memory; 16K-character output buffer ● RS-232C.

Features/Options ● internal timers ● event triggers ● polling of single or multiple addresses up to 64 locations with user-programmable message lengths to 900 characters; ping-pong testing via poll mode.

Cost/Service ● $1,995 purchase basic unit; $2,745 purchase full-featured unit ● quantity discounts ● 1-year warranty ● factory service.

■ RVS ELECTRONICS

P.O. Box 87, Circleville, NY 10919 ● 914-692-2703.

☐ PK-10 Low-Cost Modem-Terminal Interface Tester

Application ● DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type ● DTE/DCE interface breakout box.

Packaging ● hand-held unit.

Functions ● monitors EIA RS-232C/CCITT V.24 ● supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters ● transparent to codes and protocols ● EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics ● 10 LED indicators monitor key DTE and DCE interface signals; 3 spare LED indicators for sensing positive/negative signal levels on any lead ● 54 pin-jacks test points, 1 per DTE and 1 per DCE interface lead ● 24 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between DTE/DCE lead for testing or crosspatching.

Features/Options ● battery powered; jumper cables.

Cost/Service ● $79 purchase basic unit ● quantity discounts ● lifetime warranty ● factory service.

☐ RVS 111A Modem-Terminal Interface Tester

Application ● DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type ● DTE/DCE interface breakout box.

Packaging ● hand-held unit.

Functions ● monitors EIA RS-232C/CCITT V.24 ● supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters ● transparent to codes and protocols ● EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics ● 7 LED indicators monitor key DTE and DCE interface signals; 3 LED indicators; 2 for sensing positive/negative signal levels on any lead and 1 for pulse trap with both positive and negative trigger inputs ● pin-jacks test points, 1 per DTE and 1 per DCE interface lead ● 25 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options ● battery powered; jumper cables.

Cost/Service ● $159 purchase basic unit ● quantity discounts ● lifetime warranty ● factory service.

☐ RVS 141 EIA RS449-1 Interface Tester

Application ● DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type ● DTE/DCE interface breakout box.

Packaging ● hand-held unit.

Functions ● monitors EIA RS-449 DTE and DCE; complies to RS-422/RS-423 and Federal Standard 1020/1030 ● supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters ● transparent to codes and protocols ● EIA RS-449 DTE/DCE interface.

Characteristics ● 10 LED indicators monitor key DTE and DCE interface signals; 2 spare LED indicators for sensing positive/negative signals on any lead ● 68 pin-jacks test points, 1 per DTE and 1 per DCE interface lead ● 32 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options ● battery powered; jumper cables.

Cost/Service ● $395 purchase basic unit ● quantity discounts ● lifetime warranty ● factory service.

☐ RVS 2020 Modem-Terminal Interface Tester

Application ● DTE/DCE interface signal failure analysis and lead reconfiguration.

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Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • monitors EIA RS-232C/CCITT V.24 • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 9 tri-state LED indicators monitor key DTE and DCE interface signals; 4 spare tri-state LED indicators; 3 for sensing position/negative 3-, 6-, or 12-volt signal levels on any lead, 1 for pulse trap • 48 pin-jacks test points, 1 per DTE and 1 per DCE interface lead • 25 dip-switches, 1 per DTE/DCE interface lead; interrupt connection between selected DTE/DCE lead for testing or crosspatching.

Features/Options • battery powered; jumper cables.

Cost/Service • $199 purchase basic unit • quantity discounts • lifetime warranty • factory service.

■ TEKTRONIX INC

Box 500, Beaverton, OR 97077 • 503-627-7111.

☐ 834 Data Comm Tester

Application • software and protocol failure analysis • DTE/DCE interface signal failure analysis • detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type • interactive line monitor/protocol analyzer • bit-/byte-oriented communication protocol monitor; bit-/byte-oriented interactive mode • programmable via vendor-supplied diagnostic programs; menu-selectable operating parameters.

Packaging • portable unit with carrying case.

Functions • monitors, captures, and displays transmissions received from DTE or DCE interface for visual analysis • simulates DTE or DCE; interactive mode transmits user-keyed message up to 3K characters • continuously displays transmission as received • selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers • 25-character maximum trap start/stop sequence; traps up to 2699 characters starting at beginning/end of capture memory expandable via optional ROM • trap sequence character or bit masking 25 characters; 8-bit matching • performs odd/even parity, LRC/CRC, error checking • stores lead status of 4 DTE/DCE interface leads • bit/block error rate test (BERT/BLERT); transmits 63/511/2047-bit pseudo-random test pattern; error injection; FOX message; user-keyed test message up to 3K characters • DTE/DCE RS-232C interface breakout panel for signal testing; LED status indicators for 7 leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal monitor only.

Parameters • asynchronous/synchronous; half-/full-duplex; internal up to 19.2K bps; external clock to 19.2K bps • ASCII, EBCDIC, Correspondence, Baudot, IPARS, SABRE codes; 5/6/7/8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, BSC, ASCII protocol • RS-232C/CCITT V.24, optional; 20/40/60-mA current-loop DTE/DCE interface.

Characteristics • 16-character single-line florescent display • 5x7 dot matrix; 12 data characters and 4 status characters • displays in hex or alpha; displays receive and transmit data concurrently via LEDs and push buttons • hex tactile keypad • 2699-character program and data memory (expandable); can program up to 100 steps with overlays in most optional ROM packs.

Features/Options • optional event triggers • 1 interval timer • bit inversion • bit reversal • options include current-loop interface; RS-449 adapter option; ROM packs for EBCD/BSC, ASCII/BSC, HDLC/X.25, PARS/IPARS, SDLC/SNA, and distortion testing.

Cost/Service • $3,990 purchase basic unit; $11,800 purchase full-featured unit • quantity discounts • 1-year warranty • service centers.

■ TELEBYTE TECHNOLOGY, INC/Remark Datacom Division

148 New York Avenue, Halesite, NY 11743 • 516-423-3232.

☐ 50 Breakout Box

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • hand-held unit.

Functions • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface leads.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24; DTE/DCE interface.

Characteristics • pin-jacks test points, 1 per DTE and 1 per DCE interface lead • 24 rocker switches, 1 per DTE/DCE interface lead, interrupt connection between selected DTE/DCE leads for testing or crosspatching; includes 1 3-pin, 1 4-pin, and 1 5-pin bus area.

Features/Options • no external power required; line-driven • jumper cables.

Cost/Service • $79 purchase • 1-year warranty • factory service.

☐ 4050 Data Line Analyzer

Application • DTE/DCE interface signal failure analysis and lead reconfiguration.

Device Type • DTE/DCE interface breakout box.

Packaging • portable unit.

Functions • monitors EIA RS-232C/CCITT V.24 DTE/DCE interface leads via individual LED indicators • supports DTE/DCE interface lead reconfiguration and/or interruption between corresponding DTE/DCE interface.

Parameters • transparent to codes and protocols • EIA RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics • 7 tri-state LED indicators monitor key DTE and DCE interface signals plus 1 LED indicator for user-selected monitoring of any remaining leads • pin-jacks test points, 1 per DTE and 1 per DCE interface lead • 24 rocker switches, 1 per DTE/DCE interface lead, interrupt connection between selected DTE/DCE leads for testing or crosspatching; includes 1 3-pin, 1 4-pin, and 1 5-pin bus area.

Features/Options • no external power required; line-driven • jumper cables.

Cost/Service • $189 purchase • 1-year warranty • factory service.

■ UNIVERSITY DATA SYSTEMS

5000 Bradford Drive, Huntsville, AL 35805 • 205-837-8100.

☐ Comtest 100

Application • software and protocol failure analysis • DTE/DCE interface signal failure analysis.

Device Type • passive line monitor/protocol analyzer • bit-/byte-oriented communication protocol monitor • accommodates external diskette storage; 358.4K-character capacity • programmable via menu-selectable operating parameters.

Packaging • portable unit with carrying case • rackmount unit.

Functions • monitors, captures, displays, and optionally records transmissions received from DTE or DCE interface for visual analysis • continuously displays transmission as received; selectively freezes displayed transmission for visual analysis (but halts data acquisition); selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers • 16-character maximum stop trap sequence; traps up to 4K characters starting at end of capture memory • trap sequence

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character masking; maximum mask 1 character; 1-bit matching ● records from line or capture memory ● trigger-selective recording via DTE/DCE interface signal changes; via search by marker ● performs odd/even parity; CRC error checking ● stores lead status of 4 DTE/DCE interface leads ● DTE/DCE RS-232C interface breakout panel for signal testing; LED status indicators for all leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead configuration.

Parameters ● asynchronous/synchronous/isochronous; half-/full-duplex; internal selectable clock rates at 50/75/110/134.5/150/300/600/1050/1200/1800/2400/4800/9600/19.2K bps; external clock to 19.2K bps; record rate to 19.2K bps ● ASCII, EBCDIC, EBCD, Correspondence, Baudot, IPARS, XS-3 code; 5/6/7/8-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; SDLC, SDLC NRZI, IPARS, BSC, ASYNC protocol ● RS-232C/CCITT V.24 DTE/DCE interface.

Characteristics ● 5-inch diagonal CRT screen; 512 character positions; 32 characters per line by 16 lines plus 1 status line ● displays in hex or alpha ● displays receive and transmit data concurrently; transmit and/or receive data identified via reverse video ● hex tactile keypad ● RS-170 composite video output for external CRT monitor ● 4000-character capture memory ● RS-232C; printer output for data only ● external recorder output (an extension of capture memory).

Features/Options ● 9 event counters ● 1 interval timer for intermessage time and time between trigger events ● event triggers ● bit inversion ● bit shift ● bit reversal ● measures phase jitter and bias distortion ● options include SDLC, BSC, IPARS, special bit rates and default parameters; current-loop interface.

Cost/Service ● $4,600 purchase basic unit; $6,400 purchase full-featured unit with optional disk drive (other option costs are negligible) ● quantity discounts ● 1-year warranty ● factory service.

☐ **Comtest 200**

Application ● software and protocol failure analysis ● DTE/DCE interface signal failure analysis ● detection and isolation of performance degradation or failures in DTE, DCE, or communication line.

Device Type ● interactive line monitor/protocol analyzer ● bit- or byte-oriented communication protocol monitor; bit- or byte-oriented interactive mode ● accommodates single or dual diskette storage; up to 358.4K-character capacity (4 surfaces) ● programmable via vendor-supplied diagnostic programs or user-created diagnostic programs ● programmable via menu-selectable operating parameters.

Packaging ● 2416 portable unit with carrying case.

Functions ● monitors, captures, displays, and records transmissions received from DTE or DCE interface for visual analysis ● simulates DTE or DCE; interactive mode transmits user-keyed message up to 128 characters ● downline loads program parameters to remote monitor ● continuously displays transmission as received, selectively freezes displayed transmission for visual analysis; selectively captures specific transmission segment for visual analysis via entered trap sequence and/or triggers ● 16-character maximum trap start sequence; 16-character maximum stop trap sequence; traps up to 4K characters starting at beginning of capture memory ● trap sequence character or bit masking; maximum mask (don't care) 15 characters; bit matching ● records from line or capture memory; trigger-selective recording via DTE/DCE interface signal changes, via character sequence, via search by marker, via search by error ● performs odd/even parity, LRC/CRC/VRC error checking ● stores lead status of 8 DTE/DCE interface leads ● bit/block error rate test (BERT/BLERT); transmits 511-bit pseudo-random test pattern; FOX message; user-keyed test message up to 500 characters ● DTE/DCE EIA RS-232C/V.24 interface breakout panel for signal testing; LED status indicators for 12 leads; breakout switches open/close connection between individual leads; individual pin jacks for DTE/DCE interface signal lead reconfiguration.

Parameters ● asynchronous, synchronous, isochronous, half- or full-duplex; internal selectable clock rates at 50/75/110/134.5/150/300/600/1200/1800/2400/3600/4800/7200/9600/19.2K bps; external clock to 19.2K bps; record rate to 19.2K bps ● ASCII, EBCDIC, SBT, EBCD, XS-3, Correspondence, Baudot, IPARS user-selected code; 5-, 6-, 7-, 8-, 9-bit framing; odd/even/no parity; 1, 1.5, 2 stop bits; HDLC, SDLC, SDLC NRZI, DDCMP, IPARS, BSC, ASCII user-selected protocol ● RS-232C/CCITT V.24, MIL-188C DTE/DCE interface.

Characteristics ● 5-inch (diagonal) CRT screen; 512 character positions; 32 characters per line by 16 lines ● displays in hex or alpha; displays receive and transmit data concurrently via alternate lines or via split screen; transmit or receive data identified via reverse video or blinking ● hex/alpha tactile keyboard ● RS-170 composite video output for external CRT monitor ● 4K-character capture memory; 4K-character output buffer ● RS-232C.

Features/Options ● 8 event counters ● event triggers ● external single or dual disk drive.

Cost/Service ● $9,950 purchase basic unit; $10,950 purchase full-featured unit ● quantity discounts ● 1-year warranty ● factory service.

● END