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VIAVI Solutions 5G

Enabling Australia's Field Technicians to build, troubleshoot and maintain better communications networks.

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IBT-5

Quick and easy testing for installation, commissioning and maintenance of ISDN basic rate accesses

Key Features

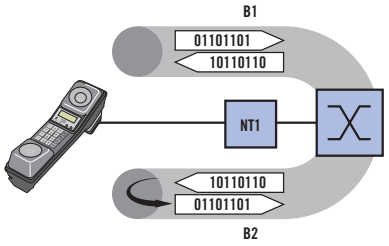
- **Low-cost, rapid installation of ISDN lines and equipment for the basic rate access**
- **Automated testing of services/teleservices and ETSI supplementary services for trouble-free commissioning**
- **Efficient management and maintenance of ISDN accesses with simulation on all major interfaces and wide range of protocols**
- **Simplified use with intuitive interface, mobile phone-style navigation, downloadable updates and phantom power-feed**
- **Enhanced troubleshooting with offline and online data analysis tool and step-by-step guide to testing procedures**

Easy, low-cost testing and maintenance

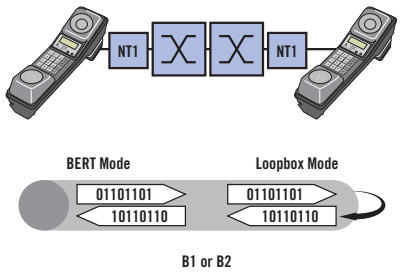
Rapid and assured testing of integrated services digital network (ISDN) access is vital for network providers to deliver new and highly reliable voice and data services over the growing number of public, private and proprietary protocols and interfaces. But with the mix of technologies becoming increasingly complex, highly functional testers that are easy and cost-effective to use are needed to enable configurations to be tested and issues resolved so that quality and reliability can be assured.

The IBT-5 provides a single solution for rapid and reliable performance testing and fault diagnostics in all environments

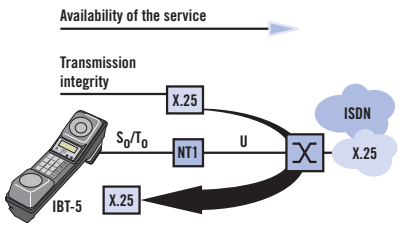
The JDSU IBT-5 is a low-cost, handheld tester for installing, commissioning and maintaining ISDN basic rate accesses and public and private PBX networks. Easy to use with clearly displayed results the IBT-5 provides a single solution for rapid and reliable performance testing and fault diagnostics in all environments, with a robust, compact design and extended eight-hour battery life.



Self-call mode



End-to-end measurements



Test of X.25 services

Quality access and services

The IBT-5 enables users to quickly and easily check accesses to the ISDN network, the availability of standard and supplementary services and teleservices, and the resulting transmission quality.

Low-cost, rapid installation

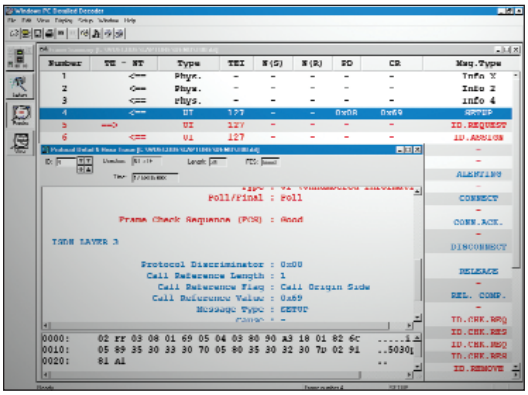
The IBT-5 provides all the tests and functions required for the installation of basic rate accesses, including bit error rate test (BERT) testing of the physical layer and transmission quality and X.25 testing in the D channel for packet transmission evaluation.

All major protocols (including Q.SIG, CorNet-T, CorNet-TS, and TN1R6) and interfaces (So/To, and U (2B1Q/4B3T)) are supported.

In BERT testing the IBT-5 can test the quality of transmission in self-call mode or through end-to-end measurements. Bit errors can be inserted manually and the level of quality displayed at any time during the test.

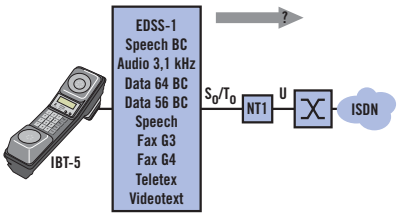
To evaluate X.25 quality the IBT-5 establishes an X.25 link (by self-call or via a loop) and analyzes the reception quality of a previously transmitted data packet. The tester indicates the availability of the service and the integrity of data transmissions, and includes a loopback function for complete testing.

The IBT-5 also enables testers to troubleshoot problems arising from the ISDN connection by displaying, storing and analyzing a call trace using the Real-Time Trace Windows™ PC Detailed Decoder software.

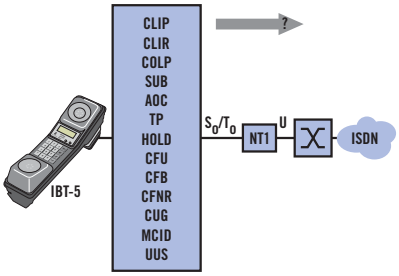


Decoder software

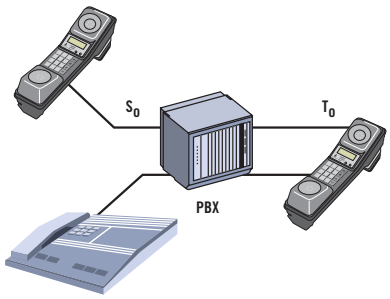
3



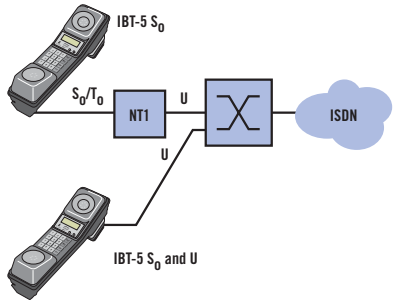
Test of services and teleservices



Test of supplementary services



Line simulation mode (LT)



Terminal simulation mode (TE)

Easy commissioning

The IBT-5 automatically tests the availability of the various ISDN services offered, including bearer capability, services/teleservices and ETSI supplementary services. A special mode enables the service and its associated protocol to be tested automatically.

Available for EDSS-1, EDSS-CH (SN3), 1TR67 and VN6 protocols the IBT-5 enables users to launch an automatic test to check for the presence of supplementary services on the basic access being tested. With the choice of services tested depending upon the services implemented in the network the IBT-5 avoids the risks of incorrect results caused by unnecessary tests, and indicates the availability, non-availability and/or causes for error for each tested service

Facilitated maintenance

Simulation (TE and LT) on all major interfaces (So/To and U (2B1Q/4B3T)) enables efficient management of ISDN accesses, with simulation of Q.SIG, CorNet-T, CorNet-TS or TN1R6 protocols for inter-PBX testing also fully supported.

The IBT-5's LT simulation function provides an easy means of simulating the ISDN network before connecting equipment such as a PBX. Additional to TE simulation this operating mode enables testers to use existing tests and functions such as call, automatic test of services, teleservices, BERT test and loopback.

Header-Section Head (optional)

Simplified use

The IBT-5 can be used just like an ordinary DTMF/touch tone telephone. The tester features clear scrolling menus for each test, prompting the user to enter specific data as and when required, and enabling testers to save data for future tests. All test results are provided in plain text and can be printed on any serial printer (figure 1).

The IBT-5 can repeat the last test sequence (recall), with a built-in memory for storing six numbers. The tester also displays information on the cost of the call, calling number and calling errors. In the event of connection failure testers can track the source and location of the problem using a simplified protocol trace (figure 2).

The IBT-5 is easily updated with new software in minutes, either by download or by exchanging a chip (FLASH).

Enhanced troubleshooting

Compatible with all JDSU's testers, the JDSU ISDNpartner Expert System enables information and statistics generated by the equipment to be downloaded for more detailed analysis by PC-based applications. Using the software solution, testers can analyze data on the D channel in realtime, examining logs and statistics and tracking for recurring errors so that long-term corrective action can be taken.

The software solution provides an HTML interface that guides testers through the testing process whatever their level of skills and experience, reducing the need for specialist staff to detect and correct common ISDN problems. Automatic diagnosis and suggested corrective actions are offered, as well as a sophisticated process for navigating the trace for complex faults, increasing the speed at which problems are isolated and resolved (figure 3).

figure 1 Protocol trace

figure 2 Scrolling menus

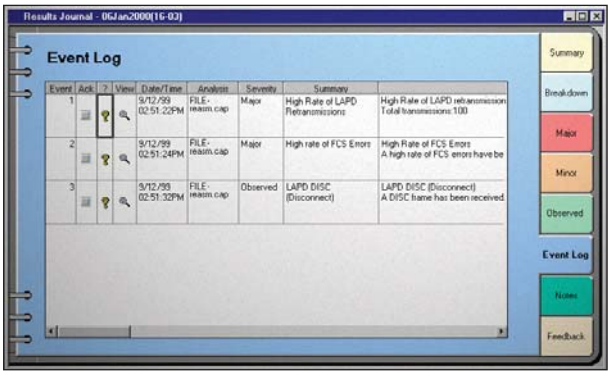


figure 3 Event log screen

Specifications

So/To basic rate access

Electrical characteristics to Rec. ITU-T I.430, ETS 300 012	
Connector	1 x RJ-45
Impedance	high impedance, 100 Ω
Protocols: EDSS-1, Q.931, BTNR 191, V1, Q.SIG, 1TR67, TN1R6, 1TR6, TPH1962, VN3/VN4/VN6, SN2, EDSS-CH (SwissNet 3), DMS-100 (funct.), N.ISDN, ATT, NTT, CorNet-T/TS®, Telenokia, Televerket	
Interface	auto-configuration, point-to-point, point-to-multipoint, no protocol (leased line mode)
Coding law	A, µ
Display	2 lines x 16 characters, backlit
Keypad	16 keys
Dimensions (w x h x d)	240 x 45 x 55 mm
Weight of the basic instrument	approx. 0.5 kg
Serial interface	jack connector

U interface (BN 7522/1X and BN 7522/7X)

Connector	2-wire
Layer 1 characteristics	conform to ANSI, ETSI
Line code	2B1Q, 4B3T

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General specifications

Menu languages	French, English, German, and Spanish
Power supply	phantom power or rechargeable batteries (option)
Operating time from NiMH batteries	> 8 hours
Charging time	< 3 hours from AC line
Safety	to EN 60950
Drop and shock test	to ETS 300 019-2 class 7M2
Permitted ambient temperature	to ETS 300 019-1 class 7.1
Operational range	–5 to +50°C
Storage and transport range	–25 to +70°C
Humidity	20 to 80% relative, 525 g/m3 absolute

Test features

Telephone function (TE simulation and option for LT simulation)

Selection	address, sub-address, channel, service, self-call
Phone-book	6 telephone numbers
Recall facility	
Keypad facilities test	on connection
DTMF generation	0 to 9, *, #
Dialling	overlap or "en bloc"
Interpreted trace	layers 1, 2, 3
Network charge analysis keypad and functional protocols	Screen display

Information on the current call, called address, calling address, connected address, billing statement, service, channel, reason for non-display of the address, cause of connection failure and location parameter, Call Waiting display, DISPLAY information element

Bit error rate test

Analysis to G.821 (ITU-T Blue Book)

Pseudo-random bit sequence	211–1
Measurement time	1 min, 15 min, 1 h, 24 h, infinite

Manual insertion of bit errors

Automatic test of services

Predefined tests: Bearer capability, teleservices

Loopbox mode (B1 and B2)

Selection mode: ISDN (all incoming calls or user-to-user signaling)/X.25 in the D channel

Realtime trace on PC

Detailed decoding of D-channel signaling on a PC

Result printouts

Results from various measurements with the IBT-5 can be printed directly on a printer with an RS-232 serial interface.

Commissioning

– Testing of all supplementary services (EDSS-1, VN6, 1TR67, SN3)	automatic mode
– Test of X.25 in the D channel (layers 1, 2 and 3)	
– Set-up of an X.25 connection (SAPI 16)	
– Transfer of a data packet	
– Checking for correct data transmission	
– Generic functional protocol	CFU, CFB, CFNR

Option: Rechargeable battery pack including LT simulation

This option is highly recommended for configuring and commissioning ISDN equipment in a network.

Protocols	EDSS-1, Q.SIG, Q.931, 1TR6, 1TR67, EDSS-CH(SN3), VN3/VN4/VN6, TPH1962, Telenokia, Televerket

Telephone function, BERT (bit error rate test), automatic testing of services and teleservices, loopback function.

Ordering information

IBT-5 basic instrument	
S0/T0 interface	BN 7522/20
S0/T0 and U (2B1Q) interfaces	BN 7522/10
S0/T0 and U (4B3T) interfaces	BN 7522/70

Standard package includes:
- Operating manual
- Quick User Guide
- Carrying bag
- Test cables for the S0/T0 and U (2B1Q) or U (4B3T) interfaces.

Menu available in:
- English
- French
- German
- Spanish

IBT-5 complete packages
- IBT-5 S0/T0 and U (2B1Q) BN 7522/11
- IBT-5 S0/T0 and U (4B3T) BN 7522/71

Includes IBT-5 basic instrument (S0/T0 and U interfaces), all software options and rechargeable battery pack option with serial interface (NiMH cells with universal charger).

Standard package includes:
- Operating manual
- Quick User Guide
- Carrying bag
- Test cables for the S0/T0 and U (2B1Q) or U (4B3T) interfaces
- Decoding software on PC.

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