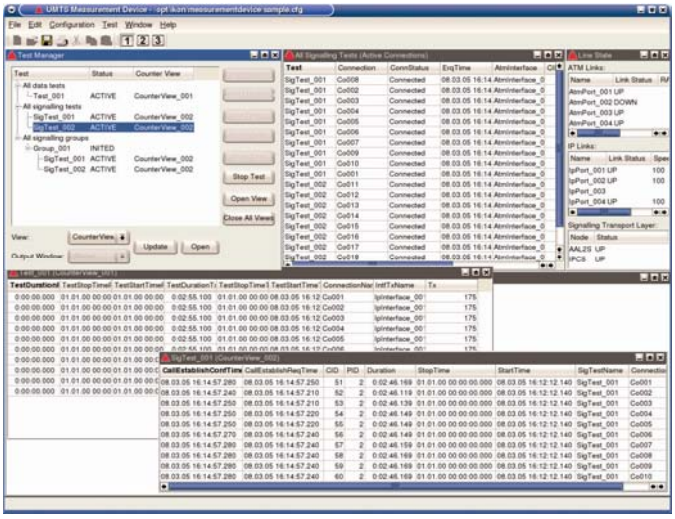
Communication Tester

Tester for UMTS Node B Transport Layer



The Communication Tester was developed by ikon as a flexible Tool to assist in specialized test purposes during the Development and the Production of Telecommunication equipment. It is intended to supplement traditional Protocol Testers and Measurement tools.

Therefore the Communication Tester is built on a powerful but cost-saving standard PC Workstation or Compact PCI System and standard Communication Boards in PCI or PMC format. These Communication Boards support a broad variety of Interfaces like ATM over E1 or STM-1, Fast Ethernet or Gigabit Ethernet, TDM over E1 or E3 etc.

The Communication Tester Software is built of two Parts: a Test Kernel and a Graphical User Interface. The Test Kernel can run standalone and is controlled via a Command Line Interface. Based on this an external Test Robot can be used for fully automated Tests. The GUI allows easy Configuration and Control of the Tests by a human Operator. It uses the Test Kernel to perform the selected Tests. The Communication Tester Software is based on a Linux Operating System. All Software Modules or Protocol Stacks are either built by ikon or obtained from leading Vendors. Therefore the Communication Tester Software can easily be modified according to the needs of the Customer.

The Communication Tester may be used for testing Telecommunication equipment for UMTS, ATM, VoIP or ISDN. Examples of test Candidates are Node Bs, RNCs, DSLAMs, IP-PBXs or other Gateways.

Special functions of Node B Tester

The Tester for UMTS Node B is built for testing the Transport Layer of the Node B Interworking Unit according to the Specifications of the Open Base Station Architecture Initiative (OBSAI).

In the standard Configuration it supports 4 E1-Interfaces for ATM AAL-2/5 traffic and 4 Fast Ethernet Interfaces for IP Traffic.

The main functions of the Tester are:

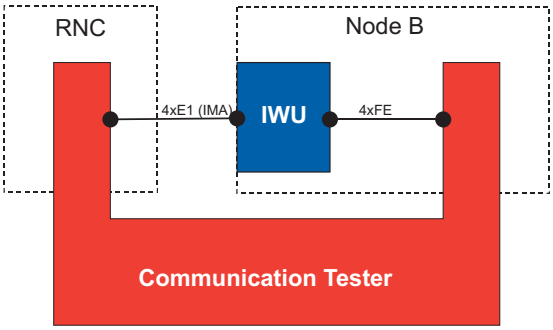
- Test of static configured Connections between ATM and Ethernet Interface. AAL-2/5 to UDP/TCP Mapping including Data Integrity, Sequence and Latency are tested.
- Test of dynamic Connections setup via AAL-2 Signalling (Q.2630) and IP Connection Control Signalling (Q.2631). Again AAL-2/5 to UDP/TCP Mapping including Data Integrity, Sequence and Latency are tested.
- Test of ATM/ATM Switching with AAL-2/5 User Data including Latency, Sequence, Protocol Errors and OAM.
- Test of IP/IP Switching with UDP/TCP User Data including Mapping, Data Integrity, Sequence and Latency.
- Test of ATM/IP NBAP Transport Converter including Mapping, Data Integrity, Sequence and Latency

ikon
YOUR BEST CONNECTION

ikon GmbH
Benzstrasse 17
89079 Ulm
Germany

fon +49 731 94661-0
fax +49 731 94661- 61
web www.ikon-gmbh.de
e-mail info@ikon-gmbh.de

All Test Functions can run simultaneously.



Operational Concept

The operational Concept is split up in four main Steps:

- Make a new Configuration for Interfaces and Tests or load an existing Configuration File.
- Initialise Hardware and Tests, open Counter Views.
- Select and start Tests or groups of Tests with the Test Manager – Counter View Windows, Active Connections and Line State Windows will display all relevant Information online. Script Files can be loaded and controlled with a separate Process Window.
- When the Tests are completed examine Results and Log Files.

Therefore the GUI allows easy access to the vast variety of Configuration Parameters:

- Extensive Configuration of the ATM and IP Hardware Interface Parameters. Definition of virtual Tester Interfaces including Parameters like Service Classes for ATM.
- Configuration of Data Connections and Tests including Transmission Parameters, Packet Formats, Measurement and Logging Parameters.
- Configuration of Signalling Connections, Tests and Groups including Call Settings, supported Message IEs, Data and Logging Parameters.
- Definition of Counter Views relating to defined Tests to display relevant Information while running these Tests.
- Configuration of Global Options like Timers for AAL-2 and IPC Signalling and Trace Options.

The Action and Monitoring Windows of the GUI are used to control the Tester Application and display relevant Information:

- Main Console - outputs standard Program Messages.
- Validate Console - displays Information about the Test Configuration.
- Test Manager - is the central Command Window for selecting, starting and stopping of Tests including the control of the Counter Views.
- Line State Window - shows the state of the ATM and IP Links as well as the status of the Signalling Transport Layers.
- Active Connections Windows - displays all Connections setup by Signalling.
- Command Console Window - is used to directly enter Application Commands.
- Counter View Windows - displays the current Test Status in realtime.
- Process Window - can be used to enter CLI commands or load and start Script Files.
- Signalling Control Window - allows sending of specific Signalling Messages on selected Channels.

The GUI supports up to 3 virtual Workspaces to arrange the Windows based on the Customer needs. The Windows may be opened, closed, arranged and moved on these Workspaces.

All User Input and Application Output is stored in Trace Files in Text Format. The Trace files can be viewed and edited with standard Word Processor Applications invoked by GUI Commands. Test Results like Counters and Timestamps are stored in Log Files in CSV Format. This allows easy processing with standard Spreadsheet Applications, e.g. for Test Result Diagrams.

About ikon

ikon GmbH delivers Products and Development Services with main Focus on Telecommunications. Since its Foundation in 1988 ikon GmbH is a reliable Partner for customer specific Development in the Telecommunication Sector.

Parts of our Product Portfolio are several Protocol Stacks and Software Modules for Technologies like ATM, DECT, ISDN, VoIP, Frame Relay, MPLS, IP-Routing and V5.x.