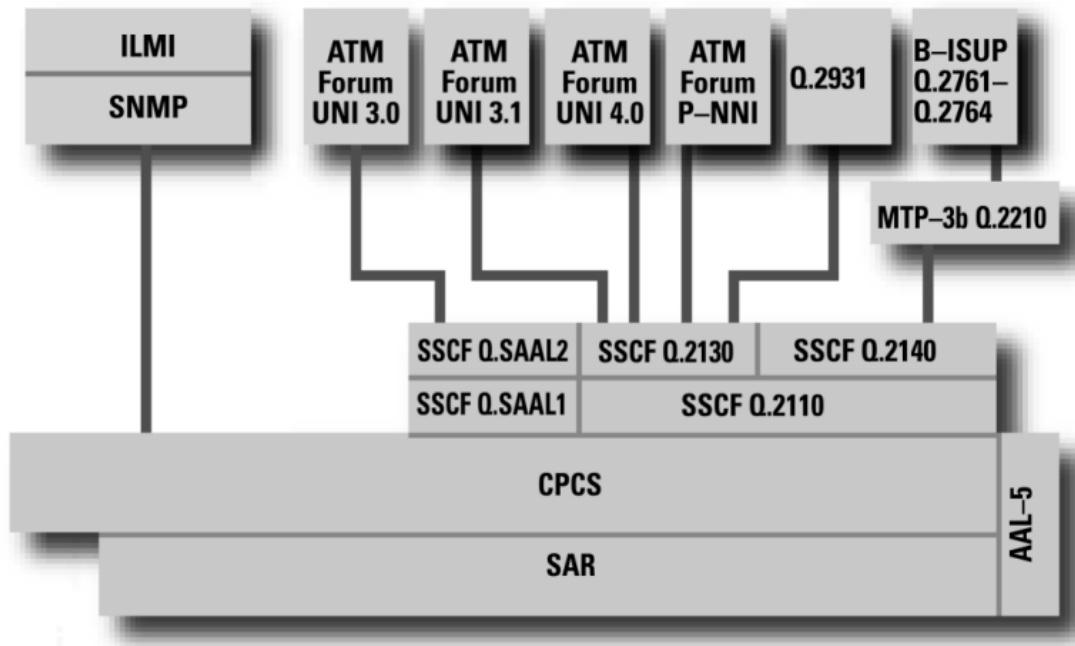


ATM Signalling Test Solutions

For the HP Broadband Series Test System



The complexity of ATM signalling, and the many different interfaces over which signalling must operate, represent a test challenge for network equipment manufacturers and service providers seeking to ensure standards conformance and interoperability, and deliver products and services quickly.

To meet this challenge, HP has developed a comprehensive solution that addresses the complete ATM signalling stack, from local management and address registration protocols, through user/network signalling, private network signalling and signalling within and between public networks.

New applications available for the industry-standard HP Broadband Series Test System provide the full range of functionality required to test all aspects of ATM signalling, and the tools needed to perform functional, conformance and performance testing at each interface in the signalling chain.

A complete testing solution for all aspects of ATM signalling including:

- ILMI Emulation and Address Registration Executable Test Suites
- UNI 3.0/3.1/4.0 and Q.2931 Signalling Emulations and Executable Test Suites
- PNNI Signalling and Routing Test Software
- NNI B-ISUP/B-ICI Test Software

Key Signalling Test Points and Products

HP provides powerful, easy-to-use test applications for each element of signalling testing.

UNI Signalling Testing

Signalling procedures handling call control between user and network equipment at the user/network interface (UNI) must be tested. HP's E4214B B-ISDN UNI Signalling Test Software provides a complete reference emulation for the for the Signalling ATM Adaptation Layer (SAAL) and for the ATM Forum's UNI 3.0, 3.1 and 4.0 specifications, as well as the ITU-T's Q.2931 specification. The product also provides complete emulation support for point to multipoint signalling, and includes tools for testing the ITU-T's Capability Set 2.1.

UNI Signalling Automated Conformance Testing

The complex interaction of UNI signalling protocols requires that this protocol be rigorously tested, in a standardized, industry reference manner, in order to ensure the interoperability of equipment. A complete set of executable test suites is available from HP to test UNI 3.0 signalling on network equipment (E7823A), UNI 3.1 signalling on both network and terminal equipment (E7833A, E7833C and E7834A), or UNI 4.0 signalling on both network and terminal equipment (E7844A and E7845A). Use of these test suites can help to verify correct implementation of UNI signalling standards on each type of device.

ILMI Testing

At the user/network interface (UNI), HP's E6273B ILMI Emulation Test Software for the BSTS allows verification of local management support layer services provided by the ATM Forum's Integrated Local Management Interface (ILMI) protocol. These ensure the correct operation of link keep-alive, address registration and configuration parameter exchange. The software provides an emulation for keep alive, walking through a local or a peer's MIB, registering and deregistering multiple ATM addresses, and examining objects passed between peers.

ILMI Address Registration Automated Conformance Testing

In order to guarantee correct implementation of ILMI address registration, HP's E7842A and E7843A products provide conformance suites for testing address registration on user and network equipment respectively.

PNNI Testing

Within private networks, the ATM Forum's Private Network-Network Interface (PNNI) routing protocol provides resource availability, routing information and address reachability information exchange within the network, while the PNNI signalling protocol provides call transfer, crankback and alternate routing support. HP's E6280A PNNI Test Software provides tools for building and viewing PNNI messages, and its user programming environment provides a complete framework for building specialized PNNI test routines.

NNI Testing

Within public networks, the ITU-T's Broadband ISDN Signalling User Part (B-ISUP) transfers signalling information between Signalling Transfer Points and Switching Points. Similarly, the ATM Forum's Broadband Inter-carrier Interface defines the messages passed between networks. HP's E4217B NNI Signalling Test Software allows emulation of MTP-3b signalling message handling and a comprehensive set of tools for testing the B-ISUP protocol within public networks, and for testing the B-ICI protocol between public networks.

Summary

Whether your signalling test needs are focused at the UNI, or include your system integration and inter-networking test requirements, HP has the test solutions you need to speed “time to market”. The HP Broadband Series Test System offers the broadest range of tools, capabilities and support for testing ATM signalling functionality, conformance and performance, all on a single platform.

Related HP Products

- **E4214B** B-ISDN UNI Signalling Test Software
- **E4217B** NNI Signalling Test Software
- **E6273B** ILMI Emulation Test Software
- **E6280A** PNNI Signalling Test Software
- **E7823A** ATM Forum UNI 3.0 Core Signalling Conformance Test Suite for the Network Side
- **E7833A** ATM Forum UNI 3.1 Core Signalling Conformance Test Suite for the Network Side
- **E7833C** ATM Forum UNI 3.1 Complete Signalling Conformance Test Suite for the Network Side
- **E7834A** ATM Forum UNI 3.1 Signalling Conformance Test Suite for the User Side
- **E7842A** ATM Forum UNI 3.0/3.1 ILMI Address Registration Test Suite for the User Side
- **E7843A** ATM Forum UNI 3.0/3.1 ILMI Address Registration Test Suite for the Network Side
- **E7844A** ATM Forum UNI 4.0 Core Signalling Conformance Test Suite for the Network Side
- **E7845A** ATM Forum UNI 4.0 Core Signalling Conformance Test Suite for the User Side



E4200/E4210 Broadband Series Test System (BSTS)

The E4200/E4210 Broadband Series Test System (BSTS) is the industry-standard ATM/BISDN test system for R&D engineering, product development, field trials and QA testing. It offers:

- The widest variety of standard interfaces
- The broadest, most powerful range of signalling capabilities
- Complete, automated conformance testing
- Time-saving features for monitoring, emulation, simulation, load generation, performance and automated testing.

The HP BSTS is modular to grow with your testing needs. And, because we build all the BSTS products without shortcuts according to full specifications, you'll catch problems other test equipment may not detect.

UNIX® is a registered trademark in the United States and other countries, licensed exclusively through X/Open Company Limited.

Specifications subject to change.

5965-9076E 06/97 Rev A

For more information

For an introduction to the modular Broadband Series Test System, please request the *BSTS Product Information & Technical Specifications*, HP publication 5966-0035E or visit the BSTS web pages at

<http://www.hp.com/go/bsts>

The *BSTS Ordering Guide*, HP publication 5964-0393E, helps you determine the appropriate system configuration for your testing needs. Technical specifications detailing other dedicated test modules and test software packages for the BSTS are also available.

How to Find Out About Other HP Products, Publications & Services

For more information about Hewlett-Packard test & measurement products, applications, services, and for a current sales office listing, visit our web site,

<http://www.hp.com/go/tmdir>.

You can also contact one of the following centers and ask for a test and measurement sales representative.

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Test and Measurement Call Center
P.O. Box 4026
Englewood, CO 80155-4026
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Hewlett-Packard Canada Ltd.
5150 Spectrum Way
Mississauga, Ontario
L4W 5G1
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