TELECOM TESTING AND COMPLIANCE TESTING FOR INTERNATIONAL MARKETS

Telecom products are increasingly being developed and introduced to a global marketplace. Type approval and testing requirements are also rapidly changing. Many markets maintain a more stringent compliance based on local testing and approvals.

For manufacturers, "in-house" testing facilities can provide a significant advantage and help ensure products reach market on time. Test laboratories are also under constant pressure to respond to market demand and provide "local", competitively priced, "rapid response" testing services.

The TCA 8200 test system has been developed to satisfy the needs of both manufacturers and test laboratories. It offers a set of reliable, accurate test tools with unrivalled features and "point & click" ease of use. The TCA 8200 provides tremendous flexibility. It can be used for "full compliance", "pre-compliance", product debugging, development testing and production testing.

- Flexible, full compliance and pre-compliance testing for global markets.
- Fast and accurate, automated testing.
- Easy to use, "point & click" access to all features, low training overhead.
- Full automatic report generation.
- Competitively priced to allow rapid return on investment and low cost of ownership.
- Future proof with a range of options and upgrades.

Features & Flexibility

The TCA 8200 is supplied with full test suites for many countries such as, FCC 68, Canada CS-03, part1,2,6,8 Australia AS/ACIF S002,3,4,016,041,043, European standards ETSI EG 201 121, ES 203 021, TS 101 270-1, TS 102.027 (SIP), JATE (Japan), New Zealand PTC 200/220 to mention just a few. Each test module provides extensive user adjustment of test conditions and limits for "engineering development" and pre-compliance testing against worldwide standards. Test settings can be saved for future use with automatic test report which can save you many days of paper work.

TCA 8200 Introduction

Since 1987, Hermon Laboratories has been a leading provider in Israel of EMC, Product safety, Telecom, Environmental testing and worldwide certification services. Hermon Laboratories is accredited for ISO/IEC 17025. Gaining on its telecom testing experience, Hermon Laboratories has developed and manufactures the TCA 8200 Telecom Conformance Analyzer which covers the broadest range of standard requirements for access equipment including analog PSTN, telephones (analog and digital), xDSL, E1, T1 and ISDN PRI, VoIP, SIP. Provides fully automated compliance, pre-compliance, development and production testing solution for; Analog PSTN, Acoustic, xDSL, VoIP, SIP, T1, E1 and ISDN PRI interfaces. Covers world's major network access standards and more.

Compliance testing to world's major standards TCA 8200 provides compliance testing solution according to the world's major network access standards, covering many types of telecom equipment ranging from handset telephones to digital switches, PBXs and VoIP gateways. In the past, approval of terminal equipment meant using a test lab with expert test engineers and tens of non-automated or semi-automated expensive test instruments and setups. Such process usually took weeks. With TCA 8200 you can complete the tests and the documentation required by the standards and agencies in a matter of hours without a need for in-depth knowledge of the standards. Due to recent liberalization of regulation processes in Europe, the USA and other countries manufacturers can now perform in-house testing and declare compliance or apply for approval of a regulatory agency. Having an in-house compliance testing solution from early design stages can significantly reduce time-to-market. Test labs can benefit also from the ability to provide fast and cost-effective testing services for a broad range of the interfaces and standards covered by the instrument, its expandability and its extensive management features.

VOIP Acoustic & VQT (PESQ) and SIP Compliance Testing

HL SIP Signaling Tester is a test environment for the SIP signaling specification as defined by the IETF standards ETSI TS 102 027 using the TCCN 3 test suites.

Digital Testing VoIP products with HL VoIP using TIA/EIA 810-A standard for acoustic and voice quality testing (PESQ) with MOS

Telecommunications Telephone Terminal Equipment Transmission Requirements for Narrowband Voice over IP and Voice over PCM Digital Wireline Telephones. TIA/EIA/IS-810 establishes handset, headset and hands free telephone audio performance requirements for digital wireline telephones regardless protocol or digital format.

HL VOIP Test provides VoIP telephone manufacturers and designers with a method for evaluating the acoustic properties of their voice over packet telephones.

Next Generation VOIP Testing

VoIP (TIA/EIA 810) - New Zealand, and TBR 10 Standards
    Distortion
    Noise
    Side tone
    Instability
    ROLR (receiving objective loudness rating)
    Through transmission (gain linearity, NB & BB etc.)
    Acoustics (receive/transmit frequency response; RLR & SLR, etc.)
    VQT (PESQ)

HL VoIP Testing

✶ **Acoustic Testing -** Tests are performed by the measurement of various electro-acoustic parameters. The Telecommunications Industry Association (TIA) has established standards for the acoustic performance of digital telephones. TIA-810-A specifies requirements for narrowband telephones.

✶ **Network Signaling Protocol -** The signaling protocol SIP can be tested for compliance with the appropriate standard ETSI (TS 102 027). Protocol analysis tools and interoperability tests are used to verify compliance

✶ **PESQ - VQT (Voice Quality Testing) -** The telephone is tested to determine how well it handles packet loss, network jitter and other network disturbances. Tests can be performed using mean opinion score (MOS) prediction algorithms (ITU-T P.862 PESQ)

The acoustic tests should be performed for handset, hands free, and headset operation. The standards' requirements are different for each mode of operation. Results are automatically archived to hard disk and documented in Microsoft Word.

Next Generation Conformance Testing for SIP and H3.23

SIP (ETSI TS 102.027)
Signaling Voice

✴ **Fully automatic testing of SIP protocol (RFC 3261) according to ETSI TS 102 027 V4.1.1 (2006-07) standard**

✴ **TTCN-3 suites for User Agent, Proxy, Redirect server, Registrar**

✴ **User-friendly test parameter (PICS/PIXIT values) setting**

✴ **User-configurable tests suites**

✴ **On-line and Off-line analysis**

✴ **Real time display of protocol traces and test results**

✴ **Logging of trace and results to file**

✴ **Automatic test reports in text and MS Word format**

✴ **Powerful management features**

R&D TESTING

✴Used by telephone designers to ensure their design meets the requirements of the target market.

✴High speed testing makes it cost effective to continually test the product through all the design stages.

✴Interfaces to Acoustic testing (mouth, ear and test head) and/or Head and Torso Simulators (HATS)

APPLICATIONS

✴Softswitches
✴Gateways
✴Application servers
✴Conference bridges
✴Interactive Voice Response Systems (IVR)
✴SIP multimedia servers
✴2.5G/3G cellular devices
✴IP phones
✴IP PBX
✴Connected PDAs
✴Video terminals
✴Soft phones
✴Voice enabled Web and e-commerce solutions

HERMON LABORATORIES

H.323

Hermon Labs H.323 solution is widely used in advanced communications equipment, ranging from Internet telephones to carrier-class SoftSwitch, IP PBX solutions and test equipment tools. The solution conforms to the latest version of the H.323 industry specification (**version 3**) and includes software stacks for a number of key telephony applications.

KEY FEATURES

- Fully automatic testing of H.323 protocol (H.225 and H.245) according to ETSI TS 101 804 and TS 101 883
- The H.323 Signaling Tester is suitable for conformance tests, functional tests, factory tests & acceptance tests
- Close to 600 suites for Endpoint and Gatekeeper
- User-friendly test parameter (PICS/PIXIT values) setting
- User-configurable tests suites
- On-line and Off-line analysis
- Real time display of protocol traces and test results
- Logging of trace and results to file
- Automatic test reports in MS Excel and MS Word format
- Powerful management features
- It is suitable for manufacturers, network operators and service providers to address all stages of the development cycle, regression testing through to type approval, acceptance testing & certification (note: requirements may be country/organization specific).
- H.323 Framework Test Suite includes test scenarios for the validation of terminal equipment by simulating the controlled interaction with other H.323 entities such as:

  ▶ Terminal
  ▶ Gateway
  ▶ Gatekeeper

APPLICATIONS

✴ Gateways
✴ H.323 Network
✴ IADs and IP Phones
✴ IP PBX
✴ MCUs
✴ Network Equipment
✴ Service Providers
✴ Session Border Controllers
✴ Softswitches
✴ VoIP enabled Phones