Spirent Communications IP Telephony Test Systems

Spirent Communications delivers IP telephony test systems that help you manage the challenges of VoIP development and deployment.
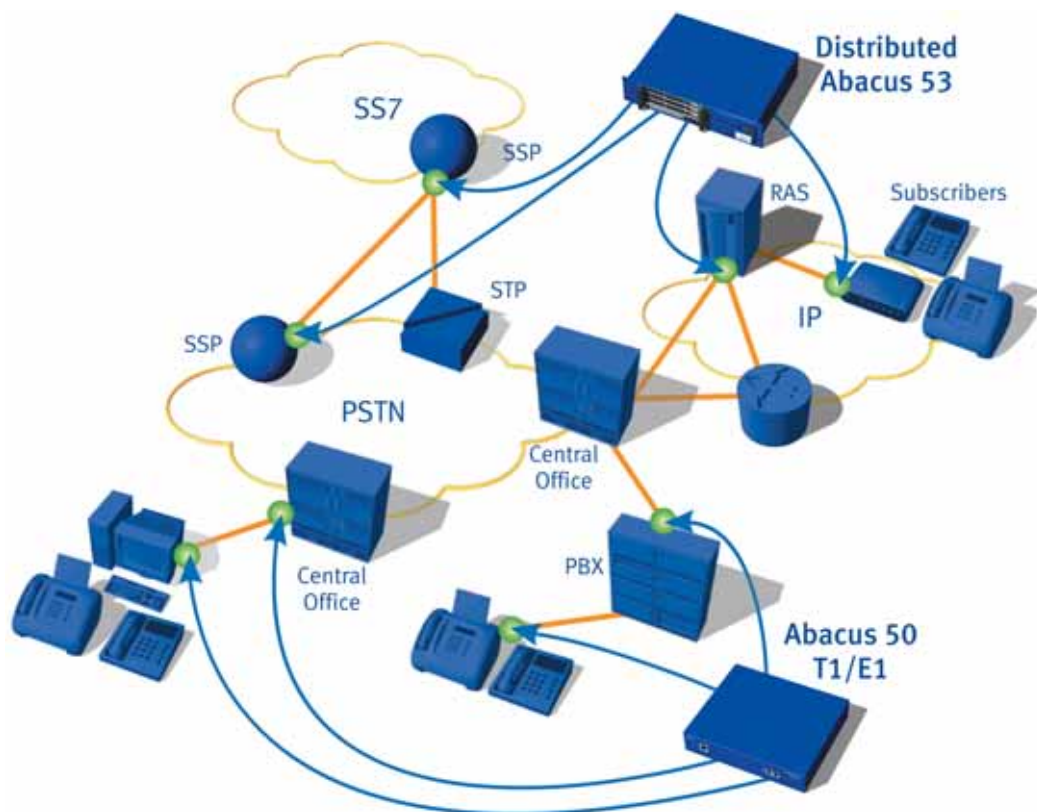
Spirent's Distributed Abacus 53 is a cost-effective, flexible and scalable IP telephony test system, with integrated analog, TDM and Ethernet interfaces for comprehensive testing of converged IP Telephony network elements.

Product Overview

Distributed Abacus 53 is a fully integrated IP and PSTN telephony test system in a single platform. The Distributed Abacus 53 test system has all of the features of an Abacus 5000, but is designed to reduce the cost of deploying a remote testing solution. This enables service providers and enterprises to reduce time to market of IP-based voice, video and data services, while meeting the quality requirements as perceived by users. The Distributed Abacus 53 is available in six pre-configured versions, each having two open slots for expansion and each includes the Distributed Testing firmware option:

- Analog FXO 14-Port with PESQ
- Gigabit Ethernet (10/100/1000) Dual-Media with PESQ and SIP
- T1 4-Port with PESQ, CAS, PRI, and SS7
- E1 4-Port with PESQ, CAS, PRI, and SS7
- T3 with PESQ, CAS, PRI, and SS7
- E3 with PESQ, CAS, PRI, and SS7

Distributed Abacus 53 test methodology allows users to objectively measure voice quality (MOS, PSQM, PSQM+, PESQ, PESQ-LQ, R-factor, J-MOS) under real-world voice stream load generation. Other test methodologies are advanced trunking signaling, functional testing, capacity, performance, interoperability, conformance, robustness, triple play testing (voice in the presence of video and data traffic) and distributed testing with multiple Abacus systems. Distributed Abacus 53 media payload formats include tones, WAV, Video H.261 and H.263 encoding, Mobile NB GSM-AMR and EVRC encoding and decoding, Mobile NB 1/2 rate EVRC encoding, CODEC variants G.711, G.726, G.723.1, G.729A/B encoding and decoding.

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Analyze | *Assure* | *Accelerate*™

Distributed Abacus 53 protocols include analog FXO and FXS (loop start/ground start), T.30 Fax, V.34 analog data modem, SS7, CAS, MF R1/R1.5/R2, ISDN PRI, GR-303, V5.1/V5.2, SLC-96/TR08 (Mode 1), V.90 Server Data Modem, QSIC (Basic Call Support) on ISDN PRI, BRI over V5.2, RTP/RTCP, Skinny, H.323, SIP, MGCP, H.248.1/ Megaco v1 and v2, NCS, SIP-T, SIGTRAN (M3UA), clear channel signaling, Echo measurements, GRQ - H.235 VoIP gateway message encryption, 3PCC, T.38 Fax over IP.

The Distributed Abacus 53 platform supports analog FXO (ECG3), analog FXS (XCG3), T1/E1 (PCG3), T3/E3 and G.747 (TCG3), IP telephony (ICG3), Architecture for Converged Network Testing (ACT-5000) and Converged Test and Measurement (CTM-5000).

Distributed Abacus 53 Benefits
- Simplifies the testing of converged IP telephony and PSTN networks and services
- Performs synchronized and complex test scenarios to help Service Providers and Enterprise customers migrate or converge into IP telephony
- Includes voice quality analysis (MOS, PESQ, PSQM, etc.) with echo and one way delay measurements to provide a complete picture of voice performance across the network
- Achieves higher network reliability and interoperability of IP telephony network elements
- Tracks the signaling history only on the channels where errors occurred with the Event AutoTrack, providing detailed failure information around the time of the event
- Integrated Avalanche and Distributed Abacus 53 systems provide testing of voice in the presence of video and data in an objective manner
- Test Skinny Client Control Protocol (SCCP) - based networks alongside PSTN generated analog calls
- Perform service rollout across the network, pre-production network testing with the distributed/multi-system Abacus

Scalability and Versatility

The multipurpose Distributed Abacus 53 delivers all of your test needs — advanced trunking signaling support, load handling, functionality, and interoperability testing — in one affordable package.

Distributed Abacus 53 is available as a 3-slot rack mountable chassis and can use any Abacus 5000 subsystems.

Distributed Abacus 53 systems include one of the following:
- Dual media Gigabit Ethernet with 1000Base-SX and 10/100/1000Base-T Ethernet (ICG3) subsystem for call generation, supports fax, RTP/RTCP, Skinny, H.323, SIP, MGCP, H.248.1/Megaco v1 and v2, NCS, SIP-T, SIGTRAN (M3UA), echo measurements, GRQ - H.235 VoIP Gateway Message Encryption, 3PCC, T.38 Fax over IP, and clear channel signaling
- TDM subsystem (PCG3) for call generation and optional switching, supports T1, E1, CAS and MF R1/R1.5/R2, ISDN PRI, GR-303, V5.1/V5.2, SLC-96/TR08 (Mode 1), SS7, T.30 Fax up to V.1 7, V.90 server data modem (up to V.90), echo measurements, QSIG (basic call support) on ISDN PRI, BRI over V5.2, and clear channel signaling
- T3 subsystem (TCG3) for call generation and optional switching, supports T3, E3, G.747, CAS, MF R1/R1.5/R2, ISDN PRI, GR-303, V5.1/V5.2, SLC-96/TR08 (mode 1), SS7, T.30 fax up to V.1 7, V.90 server data modem (up to V.90), echo measurements, QSIG (basic call support) on ISDN PRI, BRI over V5.2, and clear channel signaling
- Analog FXO (ECG3) subsystem for call generation, sup¬ports loop start and ground start, T.30 fax up to V.17, V.34 analog data modem (up to V.34), echo measurements
- Analog FXS (XCG3) subsystem for call generation and switching, supports loop start and ground start, T.30 Fax up to V.17, V.34 analog data modem (up to V.34), echo measurements

Applications

Distributed Abacus 53 flexibility and scalability allows users to test network performance, including:

- Performance of media gateways, media gateway controllers, signaling gateways and trunking gateways (softswitches)
- Capacity of signaling and media processing for IP telephony equipment
- Network information accuracy of registration servers
- SIP signaling call setup of proxy servers
- Signaling handling of TDM and IP-PBXs
- Call accounting, voice messaging, and conferencing servers
- IP telephony switches and routers
- The SCCP (Skinny Client Control Protocol) - based networks alongside PSTN generated analog calls

Distributed Abacus 53 is a voice quality performance measurement tool that allows users to objectively measure voice quality over analog, TDM and IP telephony networks. Voice quality measurements-over-time in the presence of data enables service providers to analyze and test network equipment and infrastructure before deploying new voice services on converged data and video networks.

Specifications

PSQM and PSQM+ Measurements

- Send multiple standard and user-defined audio files using either G.711 over TDM, or as analog signals over analog lines, or in encoded format in RTP streams
- Encode and decode using G.711 u-Law, G.711 A-Law, G.723.1, G.726, and G.729AB CODECs
- Real time PSQM/PSQM+ measurements with stop/freeze triggers
- Conversion to Mean Opinion Score (MOS) values
- Capture and analysis of received audio signals

PESQ Measurements

- Simultaneous PESQ measurements
- Calculation of PESQ-LQ, R-factor and J-MOS from PESQ measurements
- Simultaneously mix traffic with speech or tones

Chassis

- 3-slot rack-mountable chassis

System Controller

- System Controller front card fits into the slot 0 of the Distributed Abacus 53 chassis
- Slot 0 is a reserved slot, which does not reduce the usable slots available for the circuit generator cards

Circuit Generator

- One circuit generator (CG) front card fits into one Distributed Abacus 53 slot
- Up to 3 CG cards can fit in the chassis

Dimensions

- 3.5" x 19" x 11.75" (89 mm x 482 mm x 298 mm)

Environment

- Operating temperature range: 0º-40 ºC at 20%-80% non-condensing humidity
- CE marked

Power Supply

- Nominal AC input: 100 to 240 Vac, 47 to 63 Hz

Power Draw

- 250 Watts maximum

OS Architecture

- Windows® 2000 operating system
- Windows XP Professional operating system

Ordering Information

Chassis Bundles

- DA-53-101   Distributed Abacus 53 - analog FXO with 14 ports. Includes PESQ
- DA-53-102   Distributed Abacus 53 - GigE Dual-Media Includes PESQ and SIP
- DA-53-103   Distributed Abacus 53 - T1 with 4 ports. Includes PESQ, CAS, PRI, SS7
- DA-53-104   Distributed Abacus 53 - E1 with 4 ports. Includes PESQ, CAS, PRI, SS7
- DA-53-105   Distributed Abacus 53 - T3. Includes. PESQ, CAS, PRI, SS7
- DA-53-106   Distributed Abacus 53 - E3. Includes PESQ, CAS, PRI, SS7
- DA-53-401   Distributed Abacus 53 4-Pack - analog FXO with 14 ports. Includes PESQ
- DA-53-402   Distributed Abacus 53 4-Pack - GigE Dual-Media. Includes PESQ, SIP
- DA-53-403   Distributed Abacus 53 4-Pack - T1 with 4 ports. Includes PESQ, CAS, PRI, SS7
- DA-53-404   Distributed Abacus 53 4-PACK - E1 with 4 ports. Includes. PESQ, CAS, PRI, SS7
- DA-53-405   Distributed Abacus 53 4-PACK - T3. Includes PESQ, CAS, PRI, SS7
- DA-53-406   Distributed Abacus 53 4-PACK - E3. Includes PESQ, CAS, PRI, SS7

Firmware Options

- All Abacus 5000 firmware options may be ordered for the Abacus 53

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For More Information

Visit Spirent Communications' Web site at www.spirentcom.com/voice to learn more about Spirent IP telephony test systems and services, download product literature, white papers and test methodologies. Contact your local sales representative for details.

Spirent Global Services

Spirent Global Services provides a variety of professional services, support services and education services - all focused on helping customers meet their complex testing and service assurance requirements. For more information, visit the Global Services website at www.spirentcom.com/gs or contact your Spirent sales representative

**Spirent
Communications**
26750 Agoura Road
Calabasas, CA
91302 USA
E-mail: productinfo
@spirentcom.com

Sales Contacts:
North America
+1 800-927-2660
Europe,
Middle East, Africa
+33-1-6137-2250
Asia Pacific
+852-2511-3822
E-mail:salesasia
@spirentcom.com
All Other Regions
+1 818-676-2683

www.spirentcom.com