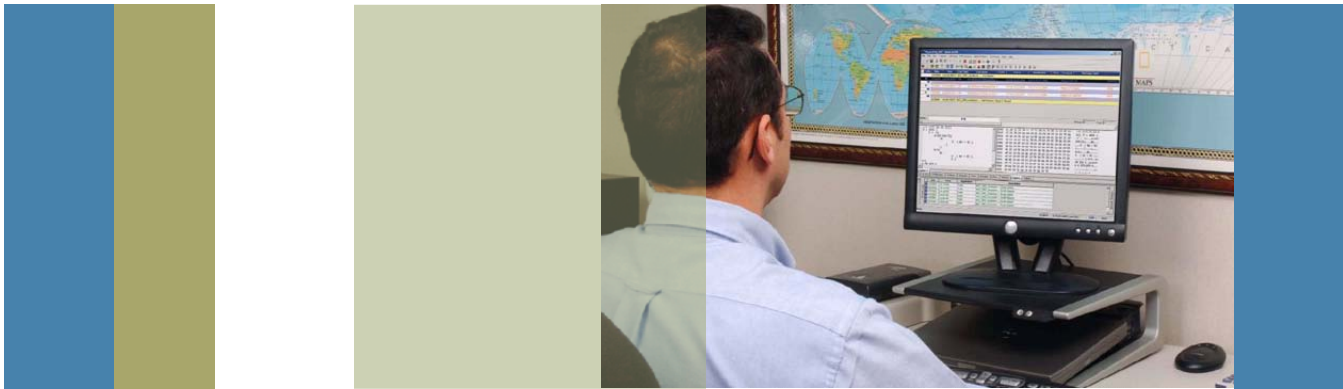


# Spectra2|SE Software-only IMS and VoIP Testing Solution

Functional and Load Testing from Your Laptop



## Overview

The Spectra2 SE software-only testing solution is a Windows PC based software application that provides users with the capability to test IMS and VoIP networks from their laptops or desktops.

Utilizing the on-board Ethernet interface of your PC, Spectra2 SE can Functional Test, Load Test, and monitor IP protocols such as SIP, Megaco and Diameter (among others) along with RTP/RTCP based media streams which are at the heart of today's IP communication networks.

With built-in network element emulations, protocol conformance tests, protocol message libraries, and Media/QoS testing capabilities, Spectra2 SE is the affordable solution for your IP test needs.

## IMS and VoIP:

- **Functional Testing:** use Spectra2 SE's graphical editor to quickly generate functional test cases tailored to your specific test needs
- **Load Testing:** the load generator function allows you to define complex traffic mixes that resemble real-world traffic models
- **Media/QoS:** evaluate media as it traverses through your network with Spectra2 SE's QoS and media analysis capabilities
- **Monitor:** capture, save, and correlate data from your network using Spectra2 SE's capture/analyzer function

## Issue:

When you test your network, how much time do you spend preparing your tools?

- Do you have to build complex scripts starting with a base protocol structure or primitive?
- Do you have to build complex element emulations and state machines?

## Solution:

Spectra2 SE is designed to maximize your productivity while managing the complexity of your testing with simplicity.

- Spectra2 SE automates layer2 and layer3 communications so you don't have to spend time scripting lower layer communication functions.
- Spectra2 SE features powerful built-in emulations for IMS/VoIP elements such as SIP UA's, MGW's, MGC's, CSCF's, HSS's, and others to ensure that the only administration required is to assign IP addresses and message flows to be run against your system under test.

## Merits:

- Spectra2 SE contains many built-in base features that enable your organization to maximum productivity and flexibility.
- Spectra2 SE is designed to make your complex tasks easy to manage.
- Spectra2 SE is your all-in-one IP tester for your IMS/VoIP networks.
- Spectra2 SE provides a flexible configuration to enable a cost effective test solutions for your organization.



## Spectra2|SE: Testing Functions

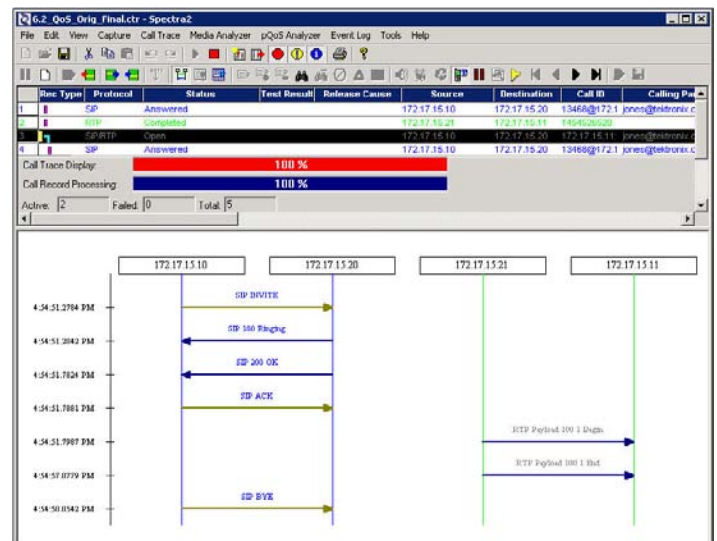
Spectra2 SE's industry leading easy-to-learn, easy-to-use scripting interface, and protocol test packages greatly simplify your testing process enabling you to a faster time to market.

- Functional and Load Testing of SIP, H.323, Megaco (H.248 Text and Binary), MGCP, DIAMETER, and XCAP protocols
- Built-in Element Emulations for SIP, H.323, Megaco, MGCP, and DIAMETER
- Scheduling Application for automation of test cases
- Configurable automated message responses
- Auto-population of message parameters
- Scripting flexibility: IF THEN/ELSE conditional branching capabilities, procedure definition / procedure calls, user-defined event counters and timers
- Get/Put parameter management for customization of incoming and outgoing messages in real-time
- Test multiple protocols concurrently in a single test model
- Passive QoS testing with media injection and media capture coupled with MOS, PESQ, R-Factor scoring
- Media Support: G.711, G.723, G.726, G.729, RFC 2833, AMR
- Transport Layer Support: TCP, UDP, SCTP
- Built-in protocol message libraries
- Built-in conformance tests
- 10 calls per second load generation on the software only edition
- Customizable traffic mixes and traffic flows

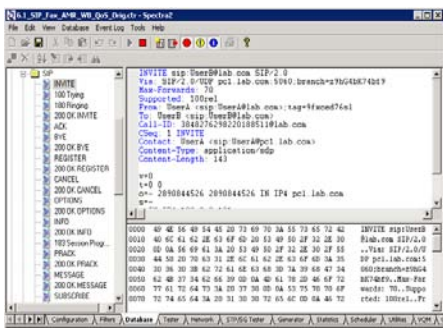
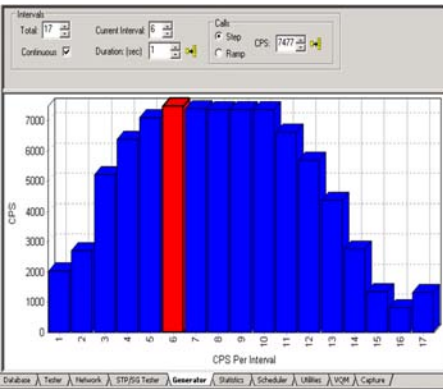
## Spectra2|SE: Monitor

Support for multi-protocol analysis of H.323, SIP, MGCP, Megaco, Diameter, XCAP/HTTP, RTP, and RTCP provides visibility into your testing environment.

- Additional monitored protocols: HTTP, IGMP, ICMP, RTSP, ARP
- Real-time data trace capture with save/export/customize/reuse capabilities
- Automated correlation of messages on a call by call basis
- Filter-In / Filter-Out captured message data based on user-defined filters
- Automatic correlation of RTP streams allows for point and click media playback
- Multi-protocol Call Trace with ladder diagram or bulk message views
- Color code messages by multiple criteria to ensure easy readability



**We have chosen to deploy Spectra2 SE throughout our entire development and test organization because it gives us the flexibility we need to get the job done. Everyone can test directly from their laptop or desktop when and how they want to.**



For extreme load testing of IMS, VoIP, and/or Converged Networks, Spectra2 is available in multi-user portable or rackmount hardware configurations that are scalable to meet your testing needs. Protocols capabilities for hardware configurations extend to ISUP, TCAP, BICC, SIGTRAN, and ISDN. Media codec capabilities extend to FoIP (T.38) and Video (H.263/H.263+).



## Spectra2|SE Protocol Support

### H.323

ITU-T H.323 Version 2, February 1998

ITU-T H.323 Version 3, September 1999

ITU-T H.323 Version 4, November 2000

ITU Implementer's Guides

July 1999  
March 2000  
December 2000  
October 2002

### SIP

IETF RFC 2543

IETF RFC 2976

IETF RFC 3261

IETF RFC 3262

IETF RFC 3264

IETF RFC 3265

IETF RFC 3310

IETF RFC 3311

IETF RFC 3312

IETF RFC 3323

IETF RFC 3325

IETF RFC 3326

IETF RFC 3428

IETF RFC 3455

IETF RFC 3515

IETF RFC 3578

IETF RFC 3680

IETF RFC 3856

IETF RFC 3857

IETF RFC 3858

IETF RFC 3863

IETF RFC 3903

IETF RFC 4168

IETF RFC 4475

### SIP-T

IETF RFC 2046

IETF RFC 3204

IETF RFC 3372

IETF RFC 3398

IETF RFC 3578

### Diameter

IETF RFC 3588

(3GPP) ETSI TS 129.228 v.7.0.0

(3GPP) ETSI TS 129.229 v.6.7.0

(3GPP) ETSI TS 129.328 v.6.8.0

(3GPP) ETSI TS 129.329 v.6.6.0

### Diameter Rf

ETSI TS 132 260

v.6.8.0

ETSI TS 132 299

v.6.10.0

ETSI TS 132 240

v.6.4.0

### MGCP

IETF RFC 2705

IETF RFC 3435

### Packet Cable

PKT-SP-TGCP-101-991201

PKT-SP-EC-MGCP-I03-010620

### Megaco/H.248 (Binary and Text Encoding)

IETF RFC 3015

IETF RFC 3525

ITU-T H.248, June 2000

ITU-T H.248.1, March 2002

ITU-T H.248.1 May 2002

ITU-T H.248.1 v2 Corrigendum 1, March 2004

### Media

IETF RFC 2327

IETF RFC 3550

IETF RFC 3551

ITU-T G.711, November 1998

ITU-T G.723.1, March 1996

ITU-T G.726, January 2000

ITU-T G.729 Annex A, November 1996

### Voice Quality

ITU-T P.862, February 2001 ITU-

T G.107, March 2003

### Available Packages for Spectra2|SE

SIP Testing

VoIP Analyzer

SIP/TLS Testing

SIP-T Testing

H.323 Testing

MGCP Testing

Megaco Testing

Binary Megaco Testing

RTP QoS Testing Passive

QoS Testing RFC 2833

Testing

Diameter Generator

Package

Diameter Cx / Dx

Interface Support

Diameter Sh Interface

Support

### Minimum

Hardware

Requirements

Windows 2000 or

Windows XP

Network Interface Card

(NIC) 512 MB RAM

## About Tektronix:

Tektronix has more than 60 years of experience in providing network operators and equipment manufacturers a comprehensive and unparalleled suite of network diagnostics and management solutions for fixed, mobile, IP and converged multi-service networks.

These solutions support such architectures and applications as fixed mobile convergence, IMS, broadband wireless access, WiMAX, VoIP and triple play, including IPTV.

Learn more about Tektronix' communications test, measurement and network monitoring solutions by visiting:  
[www.tek.com/communications](http://www.tek.com/communications).

## For Further Information:

Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology.

Please visit [www.tektronix.com/communications](http://www.tektronix.com/communications)

## Contact Tektronix:

Please visit [www.tektronix.com/communications](http://www.tektronix.com/communications)

Phone:  
1-800-833-9200 option 1  
+1-469-330-4000

Locate your nearest  
Tektronix representative at  
[www.tektronix.com/contactus](http://www.tektronix.com/contactus)