



Spectra2|SE²

Software Only

An intuitive IMS/NGN/VoIP/EPC Tester Solution

The Spectra2|SE² software-only testing solution is a Windows Operating System software application that provides users the capability to test their IMS and VoIP networks using any off-the-shelf computing platform.

Spectra2|SE² is a multi-user software application that utilizes native Ethernet interfaces (e.g. through USB to GigE adapters) to provide functional testing, load/stress testing, media quality testing /analysis and monitoring capabilities to assist with: product / application development; product testing; first market application validation; network monitoring and troubleshooting.

Spectra2|SE² automates layer2 and layer3 communications so you don't have to spend time scripting lower layer communication functions. Spectra2|SE² features powerful built-in simulations 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.

Spectra2|SE²:

Cost effective IP test solution

Tester Capabilities:

- Built-in protocol message libraries.
- Built-in conformance test suites.
- Scheduling Application for automation of test cases
- Configurable automated message responses
- Auto-population of message parameters
- Conditional Branching : IF THEN/ELSE 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

Monitor Capabilities:

- Real-time capture with save/export/customize/reuse options
- Automated correlation of messages on a call by call basis
- Multi-protocol Call trace with ladder diagram or bulk message views
- Filter-In/Filter-Out captures message data based on user-defined filters
- Automatic correlation of RTP streams allows for point and click media playback

The screenshot displays the Spectra2|SE2 software interface. The main window shows a test configuration table with columns for SUT, Call L..., +/-, and Description. The table lists 16 test steps, all involving 'Transmit PDU (ITU BICC\...)' for 'BICC_1'. To the right, there are panels for 'Terminated List' and 'Monitored List'. Below the main window, an 'Event Log' shows a sequence of events including connection to a server, configuration errors, and successful network configuration.

SUT	Call L...	+/-	Description
1	SN2 BICC_1	+	BICC_1: BiccCall
2	SN2 BICC_1	+	Transmit PDU (ITU BICC\IAM)
3	SN2 BICC_1	+	Transmit PDU (ITU BICC\ACM)
4	SN2 BICC_1	+	Transmit PDU (ITU BICC\ANM)
5	SN2 BICC_1	+	Transmit PDU (ITU BICC\APM)
6	SN2 BICC_1	+	Transmit PDU (ITU BICC\CFN)
7	SN2 BICC_1	+	Transmit PDU (ITU BICC\CGB)
8	SN2 BICC_1	+	Transmit PDU (ITU BICC\CGBA)
9	SN2 BICC_1	+	Transmit PDU (ITU BICC\CGU)
10	SN2 BICC_1	+	Transmit PDU (ITU BICC\CGUA)
11	SN2 BICC_1	+	Transmit PDU (ITU BICC\CON)
12	SN2 BICC_1	+	Transmit PDU (ITU BICC\COT)
13	SN2 BICC_1	+	Transmit PDU (ITU BICC\CPG)
14	SN2 BICC_1	+	Transmit PDU (ITU BICC\CQM)
15	SN2 BICC_1	+	Transmit PDU (ITU BICC\CQR)
16	SN2 BICC_1	+	Transmit PDU (ITU BICC\CRG)

Date	Time	Application	Count	Description
11/5/2008	4:38:13 PM	Client	1	Connected to server on port - 10010 (0000271A Hex)
11/5/2008	4:38:14 PM	Configuration	1	No DSP board in bank 2, therefore, this configuration cannot perform media detection. See the Frequently Asked Questions section of the System Configuration online help for more information.
11/5/2008	4:38:14 PM	Network	1	Attempting to store Network Configuration Network Elements to Server.
11/5/2008	4:38:14 PM	Network	1	Network Configuration Network Elements stored successfully.
11/5/2008	4:38:14 PM	Client	1	Apply configuration successful
11/5/2008	4:38:14 PM	Client	1	Return

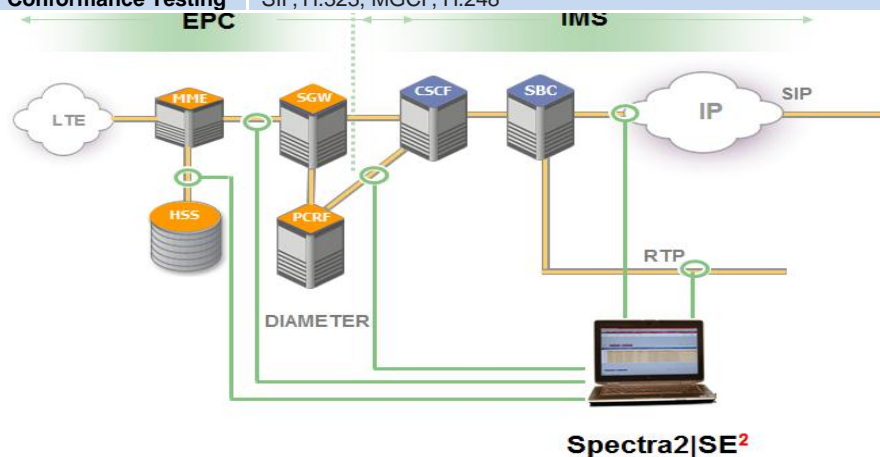


Spectra2|SE² System Capabilities

Host Machine	Any Laptop/Desktop with a WEI of 5.5+ (e.g. Quad Core Processor, 4Gb Memory, 300Gb Hard Drive)
Operating System	Windows XP / Windows 7 (64 bit)
Maximum Simultaneous Users	2
Maximum Ethernet Interfaces	2
IP Addresses per Ethernet Port	Up to 32K per GigE port (Max 250K per System)
CPS Load	Hardware Dependent
Simultaneous RTP Open Streams	Hardware Dependent
Automation	API Control, Automated Test Scheduling, Automatic Message Parameter Population, Completely Automated L1-L3
Element Simulation	AF, AS, BGF, CTF, CGF, CSCF, HLR, HSS, MGC, MGW, MMS, OCS, PCRF, PCEF, SBC, SGW, SLF, SSP, STP, UE, and more

Spectra2|SE² Software Application Capabilities

Software Application	Spectra2 SE ²
Capabilities	Functional/Conformance Testing Media/QoS Testing Monitoring and Troubleshooting (SIP Auto-scripting, InjectRAW)
NGN Protocols	SIP, H.248, DIAMETER, XCAP, HTTP, RTSP
VoIP Protocols	SIP, SIP-I/T, SIP TLS, H.323, Megaco/H.248 and MGCP
Diameter Interfaces	Cx, Dx, Ro/Gy, Rf/Gz, Rq, Gx, Rx, Sh, S6a, S9, Gq/Gq', E2/E4
PSTN Protocols	ISUP, TCAP, BICC
TCAP	AIN, CAMEL, GSM, INAP, IS-41, IS-634A, IS-826, INCS2, UMTS MAP
IP Versions	IPv4 and IPv6
Transport	TCP, UDP and SCTP
PSTN Link Types	SIGTRAN (M2PA, M3UA)
Media Capabilities	Inject media, capture media, detect media PESQ, MOS, R-Factor Quality of Service measurements
Media types	Voice: G.711, G.723, G.726, G.729, AMR WB/NB, EVRC Tones: RFC 2833, DTMF, SF Video: H.263, H.263+, H.264, MPEG4 Fax: T.38
Media Transport	RTP, RTCP and SRTP
Conformance Testing	SIP, H.323, MGCP, H.248



Spectra2|SE2 for your field troubleshooting (EPC/IMS/VoIP)

About Tektronix Communications:

Tektronix Communications provides network operators and equipment manufacturers around the world an unparalleled suite of network diagnostics and management solutions for fixed, mobile, IP and converged multi-service networks.

This comprehensive set of solutions support a range of architectures and applications such as LTE, fixed mobile convergence, IMS, broadband wireless access, WiMAX, VoIP and triple play, including IPTV.

For Further Information:

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

Contact Tektronix Communications:

Please visit www.tekcomms.com/spectra2

Other Products:

Spectra2|SE² PCIe-1: A field transportable chassis solution that works with Spectra2 application for field troubleshooting. Spectra2 workspaces are compatible between PCIe-1 and 3U making it easy for field operations units to work with R&D teams

Spectra2 3^U: A high performance rack mount chassis solution that runs Spectra2 application for lab testing. Spectra2 workspaces are compatible between PCIe-1 and 3U making it easy for field operations units to work with R&D teams.