TESTER CAPABILITIES

Features

- Production and Lab Network Applications
- LTE, IMS, VoIP, PSTN Protocol Support
- RTP Media with POLQA
- PCAP (Wireshark) import Automated Test Case creation
- Simultaneous multi-protocol testing
- Multiple simultaneous element simulation
- Millions of user agents
- Thousands of calls per second
- Thousands of RTP streams
- Schedule automated test execution
- API for 3rd party test harness support
- SNMP Alarming
- Run-time message manipulation
- Built-in protocol message libraries
- Built-in conformance test suites
- Configurable automated message responses
- Programmable logic
- User-defined event counters and timers
- Commercial Off-the-shelf hardware
- VM Environment Compatible
- Laptop portability
- Multi-user

Spectra 2|SE²

Software Edition. An intuitive Test Solution for Lab and Production Networks

The Spectra2|SE² software-only test solution provides carriers and equipment manufacturers with multi-user portable low-cost signaling and media testing for both the lab and the production network.

Spectra2|SE² supports five basic pillars of network testing:

- Functional Testing for the purpose of proving the functions and features of a network.
- Load / Stress / Performance Testing to validate network capacity and performance.
- Negative Testing for the purpose of ensuring that the network can survive protocol errors or malicious attacks.
- Media Quality Assurance to prove the quality of Audio, Video, and other sources of media.
- Automation to ensure that testing and regression cycles are as efficient as possible.

In Production

Spectra2|SE² provides a range of services that can be utilized in production network:

- **Network Element Performance Assurance** – use our unique API to systematically generate test calls through every single hardware and software resource on your Media and Access gateways. Spectra2 generates a report that easily identifies any broken or underperforming resources such as "1 Way Audio" or "Bad Transcoding".
- **End to End Service Validation** – With the powerful User Emulation capabilities, use Spectra2 to generate test calls to completely validate end-to-end service quality.
- **Enterprise Premise Validation** – Spectra2 can be used to generate periodic test calls to an enterprise premise to validate service quality. Configure SNMP Traps to report any call failures or service quality issues.
- **Field Troubleshooting** – equip your engineering and operations teams with Spectra2|SE² on their laptops for the purpose of troubleshooting and debugging calls in the field.
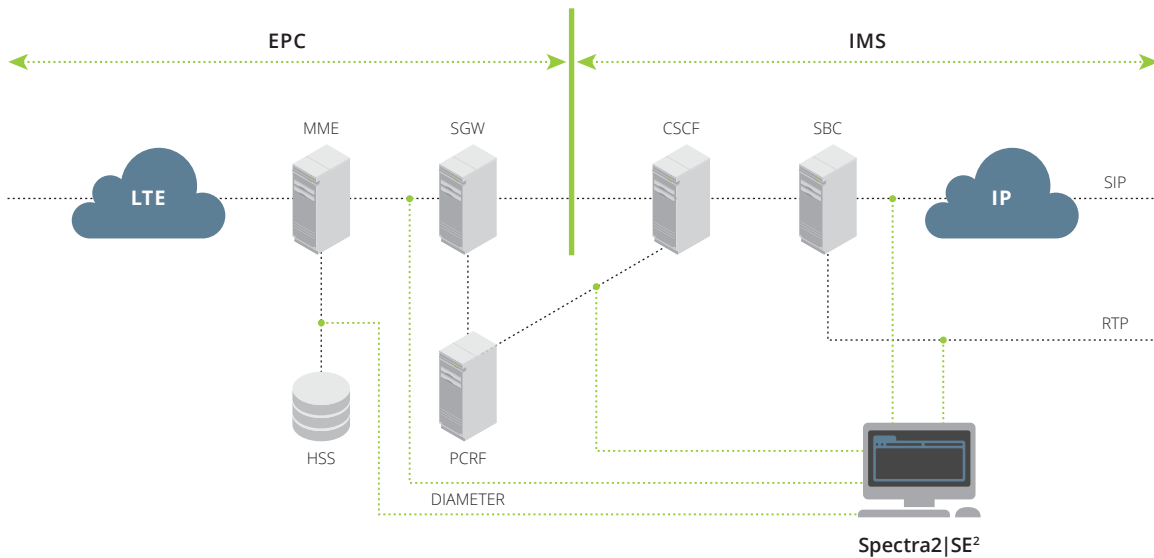
Figure 1: Spectra2|ES² for your field troubleshooting (EPC/IMS/VoIP).

In the Lab

Spectra2|SE² is extremely powerful in the lab environment. Our customers use Spectra2 for a variety of testing scenarios:

- **Network Function Development** – Spectra2 is used to simulate calls in the lab environment to validate features, functionality, and conformance to standards of a given network element function.

- **Core Network Simulation for Interoperability Testing** – Spectra2 can simulate the functionality of many different equipment vendors. Rather than purchase a variety of equipment, Spectra2 can be used to simulate individual functions or even a full core network environment.

- **System Test Validation** – Use Spectra2 to simulate millions of users simultaneously originating and terminating high volumes and varied mixes of signaling and media traffic to validate end to end network performance.

- **Advanced Troubleshooting** – Specta2's automated import functions enable rapid test case creation to easily replicate issues that have been captured from the field.

- **Automated Regression** – With advanced scheduling functions and a secure API, Spectra2 can work overtime while your people rest.

Other Features

- Powerful built-in simulations for EPC, IMS, VoIP and PSTN elements such as SIP UA's, Media Gateways and Controllers, Signaling and Packet Gateways, Access and Border Controllers, HSS, MME, and Policy and Charging functions

- Automated Scripting functions reduce test case creation times mere seconds.

- Data import makes it easy to run tests with real data captured from your network (subscriber credentials, service policies, dialing plans, and more).

- Run-time message population is an automated process that populates message parameters during the test execution allowing you freedom to modify data without modifying the test cases.

- User interface allows for total manipulation of call flow, message structure, and message payload.

- Automated layer2 and layer3 communications are built-in so you don't have to spend time scripting lower layer communication functions.

Spectra2|SE² Software Application Capabilities	
Software Application	Spectra2 SE²
NGN Protocols	SIP, H.248, DIAMETER, XCAP, HTTP, RTSP, WebSocket, WebRTC
VoIP Protocols	SIP, SIP-I/T, SIP TLS, H.323, Megaco/H.248, RTSP and MGCP
Diameter Interfaces	Cx, Dx, E2/E4, Gq/Gq', Gx, Gxx, Gy/Ro, Gz/Rf, Rq, Rx, Sh, SLg/h, Sta, SWa/x, Sy, S6a/b/d, S9, S13/13', Sh/Dh
PSTN Protocols	ISUP, BICC
TCAP	AIN, CAMEL, GSM, INAP, IS-41, IS-634A, IS-826, INCS2, UMTS MAP
IP Versions	IPv4 and IPv6 IPSec, VLAN
Transport	TCP, UDP and SCTP
PSTN Link Types	SIGTRAN (M2PA, M3UA)
Media Capabilities	Inject media, capture media, detect media, Import via PCAP and replay QoS Scoring algorithms (POLQA, PESQ, MOS, R-Factor, VMOS)
Media types	Voice: G.711, G.722, G.723, G.726, G.729, AMR WB/NB, EVRC Tones: RFC 2833, RFC 4733, RFC3556, DTMF, SF Video: H.263, H.263+, H.264, MPEG4 Fax: T.38 Raw: Capture and Test with any RTP based Codec
Media Transport	RTP, RTCP and SRTP
Conformance Testing	SIP, H.323, MGCP, H.248, Diameter
Hardware Support	Any commercial off the shelf (COTS) server supporting Windows 7, 8, or Windows Server 2008/2012, OR Any Laptop/Desktop with a WEI of 5.5+ (e.g. Quad Core Processor, 4Gb Memory, 300Gb Hard Drive)
Element Simulations	IMS: CSCF, HSS, HLR, VLR, SLF, AGW, MRFP, MRFC, IBGC, SGW, AS, etc... VOIP: Redirect, Proxy, MGW, MGC, UA PSTN: SP, SSP, STP, AS

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