Spirent’s OpenFlow controller emulation is an industry-leading solution that allows companies to benchmark flow scalability and forwarding performance of High-Speed Ethernet in addition to virtual OpenFlow network devices. OpenFlow controller emulation solution delivers the required empirical data to determine if OpenFlow compatible network devices and Software-Defined Networking (SDN) applications can deliver business benefits without degrading the user experience.

As networks evolve to being software-defined, OpenFlow devices must co-exist with traditional Ethernet switches running VLANs, MPLS, and routing protocols like BGP, OSPF, and IS-IS. OpenFlow network devices must also prove scalability and performance across multi-site data centers, virtualized cloud computing and big data networks.

Spirent’s OpenFlow controller emulation is able to stress-test OpenFlow network switches, providing insight into the throughput and capacity under load. It measures performance, availability, security and scalability of OpenFlow network devices and end-to-end SDN application scale by defining millions of flows and exercising them with traffic patterns and behavior.
Applications

• High-Speed Ethernet networks: Test end-to-end performance and scale of OpenFlow networks by populating multi-device forwarding tables, physical and virtual, with several thousands of flows combined with end-to-end traffic benchmarking.

• Hybrid Ethernet switches: Test switch ability to process OpenFlow flow traffic in combination with Spanning Tree, BGP, MPLS-TP and other protocols and determine hybrid environment throughput and latency.

• Virtual switches: Test OpenFlow capable virtual switch for flow scale and data plane throughput performance.

TechnicalSpecifications

• Open Networking Foundation OpenFlow 1.0 /1.3 specifications
• Push 1 million + flows to switches
• Emulate up to 20 controllers per port running v1.3 or v1.0
• Control up to 1000+ switches with a single controller
• Proactive mode controller support
• Data path verification of switch flow tables
• Test hybrid switches supporting traditional and OpenFlow forwarding planes
• Run multiple protocols concurrently on each OpenFlow traffic port to test scalability and protocol functionality
• Comprehensive results for analysis including Flow Add rates
• Add Flows using traffic already defined, Text Editor, or Graphical Flow Creation
• Support for IPv4, IPv6, VLAN, MPLS, VXLAN Flows
• Switch Topology Discover using LLDP
• Multiple Table Support with Metadata
• Flow Metering Support
• Master / Slave support for all controllers
• Group Table Support for types: All, Select, Indirect, and Fast-FailOver
• Secure OpenFlow Channel Support with TLS v1.2
About Spirent Communications

Spirent Communications (LSE: SPT) is a global leader with deep expertise and decades of experience in testing, assurance, analytics and security, serving developers, service providers, and enterprise networks.

We help bring clarity to increasingly complex technological and business challenges.

Spirent’s customers have made a promise to their customers to deliver superior performance. Spirent assures that those promises are fulfilled.

For more information, visit: www.spirent.com

Technical Specifications (continued)

| Supported platforms | • Supported on the Spirent MX, MX2, FX, FX2, DX and DX2 Family modules |
|                    | • Supported on Spirent TestCenter Virtual |
|                    | • Supported on Spirent TestCenter C1 and C50 |
| Ordering information | • OpenFlow Controller Emulation BPK-1193A |
| Related | • EVPN Emulation BPK-1311A |
|      | • FCoE/DCBX Emulation BPK-1081A |
|      | • LISP Emulation BPK-1181A |
|      | • OpenFlow Switch Emulation BPK-1195A |
|      | • SPB Emulation BPK-1182A |
|      | • TRILL Emulation BPK-1187A |
|      | • VXLAN Emulation BPK-1310A |