Spirent C100-S3-MP

For CyberFlood and Avalanche

In today's digital world, it's essential that the performance of content aware networks and Web applications are carefully tested to ensure that business transactions and communication are not impacted. The C100-S3-MP is a powerful Layer 4-7 stateful traffic performance solution that is capable of high throughput testing of high-strength bulk encrypted hyper-realistic traffic. Users now have the ability to test devices to their limits at line rate, simulating daily traffic to understand the impact under worst case scenarios.

Performance and Flexibility

The C100-S3-MP is available in multiple configuration options: 1G, 10G, 25G, 40G, 50G and 100G of Layer 4-7 application traffic. Testers are able to specify load variables and easily create tests with mixed traffic profiles emulating real-world network scenarios. With the available SSL/TLS acceleration module, the C100-S3-MP can meet today's most demanding test needs for encrypted traffic with high strength ciphers at massive scale.

C100-S3-MP for Avalanche performance examples*	
TCP connections per sec	>5,000,000
HTTP GETs/Sec	>4,000,000
HTTPS GETs/Sec	>200,000
HTTP bandwidth	>150Gbps
HTTPS bandwidth	>70Gbps
Sustained connections	>170,000,000
Sustained IPSec tunnels	>450,000
Sustained video sessions	300,000

* The above numbers are obtained using two QSFP28 C100-S3-MPs with SSL/TLS acceleration option operating as client and server. Unidirectional/bi-directional traffic.

Application Performance Testing Solutions

The C100-S3-MP for CyberFlood and Avalanche solution provides options from 1G to >100G of capacity, application performance testing for network devices and solutions, Web application infrastructures and media services, ensuring Quality of Service (QoS) and Quality of Experience (QoE) for your customers. The C100-S3-MP is compatible with both CyberFlood and Avalanche, giving you the most versatility in a Layer 4-7 testing solution.

Applications

- Network performance testing
- Web application testing
- Triple Play testing
- Application Identification testing with tens of thousands of application scenarios
- IPSec and SSL VPN testing
- Advanced video application testing
- Mobile network firewall testing
- Replay any traffic at scale virtually
- High-performance HTTPS/TLS testing
- Optional advanced security testing solutions are also available

User Realism with Avalanche

Avalanche supports the configuration of extremely realistic user behaviors so tests accurately reflect your company's network usage patterns. The system interacts seamlessly with sites using dynamic and interactive content, HTML links and online fill-in forms. Multiple types of browsers can be emulated, providing detailed control over browser connection behavior, SSL versions, authentication and browser client headers. User behavior such as think times and "clickaways" (HTTP aborts) can be simulated, and the system also supports HTTP basic and proxy authentication. In addition, next-generation integrated video testing is available for protocols such as HTTP Adaptive Bitrate streaming for Apple®, Microsoft®, and Adobe®.

Application Performance Testing with CyberFlood

CyberFlood is a powerful, easy-to-use web-based testing solution that generates thousands of different realistic application traffic scenarios to test the performance and scalability of today's application aware network infrastructures. Unlike other testing solutions, CyberFlood generates real high performance user applications based on actual application scenarios for realistic load and functional testing.

NetSecOPEN standards-based realistic mixed traffic testing is available for CyberFlood and Avalanche.

NetSecOPEN is a networking industry group where networking vendors, tool vendors, labs and enterprises collaborate to create open and transparent testing standards.

The goal of this group is to create a suite of standards that can be used for the evaluation and/or certification of network devices and solutions. The NetSecOPEN standard methodologies in Avalanche and CyberFlood provide easy-to-use methodologies for testing modern network devices. For more information on NetSecOPEN, go to www.netsecopen.org.

Features & Benefits

- **>100Gbps Line Rate Stateful Traffic—**Provides the capability to generate over 100Gbps of line rate stateful Layer 4-7 traffic. Available in specific configurations for 1G to native 100G interfaces.

- **Flexible Software Options—**The C100-S3-MP is compatible with CyberFlood, providing web-based, easy -to-use yet powerful application testing, and with Avalanche for advanced directed one-ended and two-ended testing

- **Configurations to meet your needs—**The C100-S3-MP for Avalanche comes in a number of different configurations to best meet your specific needs. Real-Time Statistics (across all protocols), along with a reporting tool, make analyzing results faster and easier

- **Network Devices Performance Testing—**Provides performance and capacity testing on a variety of network devices including: Firewall, Application Firewall, Load Balancer, Cache, Proxy, SD-WAN, SASE, URL Filter, Content Filter, Anti-Virus, Anti-Spyware, Reverse-Proxy, HTTP/HTTPS Accelerator, WAN Accelerators, SMTP Relay, IDS/IPS, IPSec VPN Gateway, and OpenConnect compatible SSL VPN

- **Application Server Performance Testing—**Validates the performance of several types of real services including Web, CIFS, Application, Mail, DHCP, FTP, DNS, Telnet, RTSP/ RTP QuickTime Streaming, Multicast, RTMP, NFS, and more

- **Triple Play Performance Testing—**Validates Triple Play service from the user's point of view with realistic voice calling, unicast and multicast streaming video, HTTP adaptive bitrate streaming for Apple, Microsoft, and Adobe, and simulates Internet data traffic using static IP address or IP address assignment by DHCP over PPPoE, VLAN and Stacked VLANs (e.g., Q-in-Q)

- **Web Application Testing—**Performs Web application testing including Web services, SOAP, ERP and CRM applications with Spirent Avalanche's application testing capability to support cookie, session ID, dynamic link, automatic follow redirect, additional header, content validation, SOAP message, think time, variable think time and variable assignment

- **Cryptographic Load Testing—**Provides extensive testing for secure network communications, capacities, rates and bandwidth. Additionally, supports user and user authentication performance testing including: IPSec, SSL/TLS, SSLVPN, 802.1x, Network Access Control (NAC) and RADIUS

NetSec⊘OPEN

C100-S3-MP for Avalanche	
Feature	
Number of test users	Up to 8 users on specific configurations
Type of simulation	Client and Server
Network interfaces The C100-S3-MP is available in a number of configuration options	Up to 16x10/100/1000 Copper Up to 16x10/100/1000 Fiber Up to 8x10 Gbps Fiber Interface (MMF or SMF) 4xQSFP28 multi-speed interfaces for support of 10Gbps, 25Gbps, 40Gbps (SR or DAC only) / 50Gbps and 100Gbps (SR4, LR4 or DAC transceivers—not included)
Network access protocol	DHCP, PPPoE, IPSec, SSL VPN, 802.1x/NAC and GTP tunneling
Network realism	Line speed limitation, network latency, packet loss and fragmentation
IP version supported	IPv4, IPv6, DSLITE, and 6RD
Encapsulation protocol	802.1Q and 802.1 Q-in-Q
Transport	TCP, UDP, SSLv2, SSLv3, TLS v1.0, TLS v1.2, TLS v1.3, QUIC
Data protocol	HTTP, HTTPS, HTTP/2, HTTP/3, FTP (Active/Passive), DNS, DNSSEC, DNS over TLS, DNS over HTTPS, TELNET, SMTP, POP3, IMAP4, CIFS, RADIUS, MM4, RTMP, ICMP, NFS and Capture/Replay
Authentication	802.1x, Network Access Control (NAC), Radius
Extended protocols	BitTorrent, Gnutella, MSN, Yahoo, SKYPE, SQL, MYSQL, Oracle, SMB, NFS, Remote Desktop, Exchange, LDAP and more
CyberFlood	CyberFlood provides tens of thousands of user application scenarios covering messaging, business applications, gaming, web, social media and a host of other scenario types
Voice protocol	SIP over TCP and SIP over UDP
Voice codec supported	G.711A, G.711U, G.723.1, G.726-32, G.728 and G.729AB
Video protocol	Flash Streaming using RTMP/RTMPT, Unicast Streaming Quicktime RTSP/RTP, Unicast Streaming RealNetwork RTSP/RTP, Unicast Streaming Microsoft MMS, Multicast Streaming IGMPv2, IGMPv3, MLDv2, HTTP ABR streaming for Apple, DASH, Microsoft, and Adobe
Video codec supported	MPEG-1, H.261, MPEG-2. H.262, MPEG-4. H.264
Reporting	Integrated CSV test results analyzer fully customizable with report generation in PDF and HTML
Automation	Avalanche Tcl API, CyberFlood RESTful API
Dimensions	5.25" H x 16.53" W x 19.75" D; Fits standard 19" rack, 3U high
Weight	32 lbs. (14 kg)
Operating environment	5°C–35°C
Non-operating environment	0°C–50°C
Relative humidity	10%–90% (non-condensing)
Power requirements	115-230V, 50/60 Hz–750W
Regulatory approvals	FCC Class A, EN 55022 Class A, EN 55024

About Spirent

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

Ordering Information

Description	Part Number
Avalanche C100-S3-MP with 8x10G	CMP-AKIT-021
Avalanche C100-S3-MP with 8x10G MMF 8X1G Copper	CMP-AKIT-022
Avalanche C100-S3-MP with 4x10G MMF 16X1G Copper	CMP-AKIT-023
Avalanche C100-S3-MP with 4x10G MMF 16X1G Fiber	CMP-AKIT-024B
Avalanche C100-S3-MP with 16x1G Copper	CMP-AKIT-025
Avalanche C100-S3-MP with 16x1G Fiber	CMP-AKIT-026B
Avalanche C100-S3-MP with 8x10G MMF 8x1G Fiber	CMP-AKIT-027B
Avalanche C100-S3-MP with 4x10G MMF Fiber	CMP-AKIT-028
Avalanche C100-S3-MP with 4-PORT QSFP28 10/25/40/50/100G (Transceivers Not Included)	CMP-AKIT-042

All C100-S3-MP kits come with Avalanche Base software (HTTP, FTP, Telnet and DNS).

Other hardware and software options are available. Please contact Spirent Sales for more information.

Spirent Services

Professional Services

- Test lab optimization: Test automation engineering services
- Service deployment and service-level optimization: Vendor acceptance testing, SLA benchmarking, infrastructure and security validation
- Device scalability optimization: POC high scalability validation testing

Education Services

- Web-based training: 24x7 hardware and software training
- Instructor-led training: Hands-on methodology and product training
- Certifications: SCPA and SCPE certifications

Implementation Services

- Optimized new customer productivity with up to three days of on-site assistance

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