

# Spirent C100-S3-MP

For CyberFlood and Avalanche

Applications and Security Testing Solutions

The C100-S3-MP for CyberFlood and Avalanche solution provides options for 1 Gbps, 10Gbps, 25Gbps, 40Gbps, 50Gbps and 100Gbps of capacity, security and performance testing for network infrastructures, Web application infrastructures and Triple Play 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 over 10,000 application scenarios
- Advanced video application testing
- Attack and Malware
- Mobile network firewall testing
- Security testing
- Replay any traffic at scale virtually
- Advanced DDoS testing
- High-performance SSL testing



In today's digital world, it's essential that the performance of content aware networks, security systems 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 security 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 worse case scenarios.

## Performance and Flexibility

The C100-S3-MP is available in multiple configuration options: 1Gbps, 10Gbps, 25Gbps, 40Gbps, 50Gbps and 100Gbps of Layer 4-7 and with over 170 million connections, testers are able to specify load variables such as user sessions, new user sessions per second, transactions, transactions per second, connections or connections per second. One load profile can be specified for an entire test, or a separate load profile can be defined for each group of simulated users. You can also turn on and off any protocol at any phase during the test. 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	80 Gbps/90 Gbps
HTTPS bandwidth	>60 Gbps
Sustained connections	>170,000,000
Sustained IPSec tunnels	>450,000
Sustained video sessions	300,000

\* The above numbers are obtained using two 8x10G C100-S3-MP's with SSL/TLS acceleration option operating as client and server. Unidirectional/bidirectional traffic.

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## 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®.

Avalanche quickly identifies potential points of failure by stress-testing the infrastructure. With tremendous performance at your disposal, highly realistic simulated user and network traffic can be generated, recreating a wide range of real-world loading scenarios. This proactive approach enables you to correct trouble spots and bottlenecks before network slowdowns or costly outages occur.

Ideal for equipment manufacturers, service providers and enterprise network operators, Avalanche eliminates the need to build expensive and cumbersome test infrastructures. The challenge of analyzing performance and security in today's Triple Play voice, video and data networks requires the best testing equipment you can get. By accurately emulating user and network behavior, the Avalanche load testing appliances help ensure tight security and optimum application performance. For testing next generation firewalls including mobile infrastructures between SGSN and GGSN Avalanche provide GTP tunnelling capabilities to test tunnel setup rate along with high-performance application data traffic.

## Features & Benefits

- **>100 Gbps Line Rate Stateful Traffic**—Provides the capability to generate over 100 Gbps of line rate stateful Layer 4-7 traffic. Available in specific configurations for 1 Gbps to native 100 Gbps interfaces available.
- **Flexible Software Options**—The C100-S3-MP is compatible with both CyberFlood providing a web-based, easy-to-use yet powerful application and security/attack testing and Avalanche for advanced directed one-end 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), and a reporting tool makes 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, URL Filter, Content Filter, Anti-Virus, Anti-Spyware, Reverse-Proxy, SSL Accelerator, HTTP/HTTPS Accelerator, WAN Accelerators, SMTP Relay, IDS/IPS, and IPSec VPN Gateway
- **Application Server Performance Testing**—Validates the performance of several types of real servers including Web Server, CIFS Server, Application Server, Mail Server, DHCP Services, FTP Server, DNS Server, Telnet Server, RTSP/ RTP QuickTime Streaming Server, Multicast Server, RTMP Servers, 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 assign by DHCP over PPPoE, VLAN and Stacked VLANs (e.g., Q-in-Q)
- **Web Application Testing**—Performs Web application testing including Web services, SOA, 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
- **Network Security Testing**—Provides extensive testing for secure network communication, vulnerability assessment with an always up-to date attack database and user and user authentication including: IPSec, SSL, 802.1x, Network Access Control (NAC) and RADIUS

## C100-S3-MP for Avalanche

Feature	
Number of test users	Up to 4 users on specific configurations
Type of simulation	Client and Server
Network interfaces	<ul style="list-style-type: none"> <li>■ Up to 16x10/100/1000 Copper</li> <li>■ Up to 16x10/100/1000 Fiber</li> <li>■ Up to 8x10 Gbps Fiber Interface</li> <li>■ 4xQSFP28 multi-speed interfaces for support of 10Gbps, 25Gbps, 40Gbps, 50Gbps and 100Gbps (SR4, LR4 or DAC transceivers - not included)</li> </ul>
<i>The C100-S3-MP is available in a number of configuration options</i>	
Network access protocol	DHCP, PPPoE, IPSec, 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 and TLSv1
Data protocol	HTTP, HTTPS, FTP (Active/Passive), TLS v1.2/ v1.3, QUIK, DNS, 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
CyberFlood	CyberFlood provides over 10,000 user applications 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
Voice quality measurement	MOS R-factor
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
Video quality measurement	MDI measurements along with additional stats to detect picture quality
Attack generation	Layer 2-4 DDOS Attacks and >8000+ Layer 4-7 Application Attacks
Reporting	Integrated CSV test results analyzer fully customizable with report generation in PDF and HTML
Automation	GUI to TCL
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

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## Spirent Services

Spirent Global Services provides a variety of professional services, support services and education services—all focused on helping customers meet their complex testing and service assurance requirements.

For more information, visit the Global Services website at [www.spirent.com](http://www.spirent.com) or contact your Spirent sales representative.

## Ordering Information

Due to the wide range of available system configurations, please contact your regional Spirent sales representative for detailed ordering information.

[spirent.com](http://spirent.com)

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## 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