



Service Gateway Sigma E

Powering solutions to optimize, monetize and personalize fixed/mobile broadband services



- **Control costs** through efficient traffic management
- **Increase profitability** with fully integrated network and subscriber services
- **Generate revenue from OTT** services through intelligent online charging
- **Ensure QoE** for all services, including over-the-top
- **Leverage actionable network intelligence** from traffic statistics per application, subscriber, content, and network location
- **Reduce deployment complexity** and time-to-market with a high-capacity, single-chassis services platform
- **Protect investment** in infrastructure and pay as you grow with an open, modular, standards-based solution



Allot Service Gateway Sigma E (SG-Sigma E) is a carrier-grade, highly scalable DPI-based platform for broadband optimization and revenue generation in fixed and mobile networks. It provides built in compatibility with 3G, 4G/LTE and converged network environments. With 160 Gbps of throughput in a single platform,

SG-Sigma E enables operators to manage high-speed broadband performance; to control infrastructure and operating costs; and to generate new revenue streams through the deployment of value-added network and subscriber services.



Feature Highlights

Core functionality

Real-time and long-term traffic monitoring and reporting, usage profiling, demographics, traffic management, policy enforcement, prioritization, traffic shaping, and QoS control.

Extreme performance

Supports throughput of up to 160 Gbps and up to 100 million concurrent flows in a single platform.

Actionable network intelligence

Powered by Allot's Dynamic Actionable Recognition Technology (DART) to provide:

- **Application awareness:** identifies applications at Layer-7 with extreme accuracy at very high speeds and peak loads. Visibility is further enhanced by proactive machine learning and dynamic analysis of the behavior and adaptation methods of individual applications, including in-depth analysis of HTTP applications in order to distinguish between streaming, file-sharing, social networking and others.
- **Subscriber awareness:** seamless integration with Allot Subscriber Management Platform provides monitoring, service provisioning and policy enforcement per subscriber-application.
- **Topology awareness:** cell-aware monitoring and enforcement capabilities allow operators to detect and reduce congestion within a mobile cell and on cell backhaul links.

User defined signatures

In addition to Allot's granular classification of various HTTP protocols, SG-Sigma E allows service providers to monitor and manage local applications, sites and URLs by creating customized HTTP signatures. User-defined signatures may be based on any of the main HTTP headers in use. These signatures can also be included in the system's full range of monitoring reports, providing valuable traffic statistics and usage analysis.

Value-added network and subscriber services

Facilitates fast and cost-effective deployment of value-added network and subscriber services that are integrated in the Service Gateway platform, including URL filtering (parental control), media caching and acceleration, DoS/DDoS protection, outgoing spam mitigation, tiered and quota-based services and third-party service applications.

Traffic steering and load balancing

Steers relevant traffic to network and subscriber service applications deployed in the SG-Sigma E chassis or on external servers, and dynamically balances the load among multiple service elements as needed. Traffic steering policies may be based on application, subscriber, network topology or any combination of these criteria.

Online policy control and charging

SG-Sigma E works in conjunction with Allot's policy control

and charging (PCC) solution and Allot Subscriber Management Platform to provide accurate, real time usage data for online and offline charging. The solution is designed for flexible and cost-effective integration with operator PCRF infrastructure and with online and offline charging systems (OCS, BSS) in 3G and 4G mobile broadband networks. Supported interfaces include standard Diameter Gy for real-time service metering and online charging; Diameter Gz for offline charging and reconciliation; and Diameter Gx for real-time policy enforcement.

Asymmetric traffic handling

Greatly enhances classification accuracy by ensuring that all traffic flows from the same connection are identified as such, even if the upstream and downstream traffic is processed by different Service Gateway platforms in a cluster configuration.

High scalability

Pay-as-you-grow deployment reduces initial capital outlay and allows operators to add services or upgrade capacity at any time.

- **Capacity:** Available in 14-slot chassis (SG-Sigma E14) and economical 6-slot chassis (SG-Sigma E6)
- **Port Density:** Network connectivity and service connectivity provided by
 - Up to 16 x 10GE network interfaces in SG-Sigma E14
 - Up to 8 x 10GE network interfaces in SG-Sigma E6
- **Performance:** Modular blades deliver incremental throughput from 32 to 160 Gbps, while platform clusters can scale to provide up to 1 Terabit /second of aggregate throughput
- **Subscribers:** Supports up to 8 million subscribers per platform, enabling scalable service deployment
- **Services:** Deployed on hot-swappable blades hosted in the platform or deployed externally; can be extended as needed

High availability

The platform provides 1+1 redundancy at the system level plus blade-level redundancy mechanisms to ensure service continuity with no downtime due to component failure.

Open architecture

Standard interfaces, protocols and APIs facilitate rapid and trouble-free integration of third-party network and subscriber services. Compliant with 3GPP standards for TDF and PCEF elements in mobile networks.

Carrier-grade design

Engineered to AdvancedTCA® standards for deployment in service provider networks.

Centralized management

Fully integrated with Allot NetXplorer Management system, which is able to manage up to 30 SG-Sigma E platforms.

Specifications

Allot Service Gateway Sigma E platforms comprise an AdvancedTCA chassis with a minimum blade configuration that includes two Core Controllers and two Switch & Flow Balancer blades, and one Bypass element.

Allot Service Gateway Sigma E Platforms

	SG-Sigma E14	SG-Sigma E6
Platform Configuration		
Chassis	14-slot, AdvancedTCA (ATCA)	6-slot AdvancedTCA (ATCA)
Maximum Available Slots	14	6
Core Controller (CC) Blade	2 to 10 (blade occupies 1 slot)	1 to 4 (blade occupies 1 slot)
Switch and Flow Balancer (SFB) Blade	2 to 4 (blade occupies 1 slot)	1 or 2 (blade occupies 1 slot)
Bypass (BP) Blade	1 to 2 blades (8 ports each), or external	1 blade (8 ports), or external
Service Blades	Up to 8 single-slot blades	Up to 3 single-slot blades
Capacity		
Throughput per Platform	Up to 160 Gbps	Up to 64 Gbps
Throughput per Cluster (cascading platforms)	1 Terabit/sec, using 8 devices	360 Gbps, using 8 devices
Number of Flows	Up to 100 Million (10 Million per CC)	Up to 40 Million (10 Million per CC)
Number of Subscribers / Active PDP Contexts	Up to 8,000,000	Up to 3,200,000
Connection Establishment Rate	150,000 per CC	150,000 per CC
Number of Lines / Pipes / Virtual Channels	Up to 256 / 1,000,000 / 2,000,000 (100,000 / 200,000 per CC)	Up to 256 / 400,000 / 800,000 (100,000 / 200,000 per CC)
Interface Types		
Ethernet Interfaces	Up to 24 x 10 Gigabit Ethernet SR/LR/ER	Up to 12 x 10 Gigabit Ethernet SR/LR/ER
Management	2 x 10/100/1000Base-T (1+1)	2 x 10/100/1000Base-T (1+1)
Console	Serial, RJ45 Connector	Serial, RJ45 Connector
Connectivity Configurations and Throughput Options		
Maximum Ports for Network Connectivity	16 x 10GE ports	8 x 10GE ports
Throughput	32 to 160 Gbps (in increments of 16 Gbps)	16 to 64 Gbps (in increments of 16 Gbps)
Availability		
Hardware Bypass	1-2 independent passive optical bypass, each support up to 4 links/8 ports (external and internal options available)	Independent passive optical bypass (external and internal options available)
High Availability	1+1 system-level redundancy N+1 redundancy of Core Controller blades	1+1 system-level redundancy N+1 redundancy of Core Controller blades
Management	Active-Standby HA on management ports	Active-Standby HA on management ports
System	Full redundancy for system components: PSUs, fans, etc.	Full redundancy for system components, PSUs, fans, etc.
Allot Product Compatibility		
Allot NetXplorer Centralized Management Server	Version NX11.2 and up	Version NX11.2 and up
Allot NetXplorer Collector	Version DC11.2 and up	Version DC11.2 and up
Allot Subscriber Management Platform	Version SMP11.2 and up	Version SMP11.2 and up
Dimensions		
Size	Standard 13U by 19" rack mount	Standard 6U by 19" rack mount
Weight	80Kg (177lb), in full configuration	40Kg (88.2lb), in full configuration
AC Power Supply Size (all PSUs)	External 1U by 19" rack mount	Integral Power Supply, Front redundant, Hot swappable
Bypass Unit (Optional)	1 or 2 x External 1U, 19" rack mount, 2.4kg (5.3lb)	External 1U, 19" rack mount, 2.4kg (5.3lb)
Power		
Input DC	-48V / -60V DC, 100A Max	-48V / -60V DC, 45A Max
Number of DC PSUs	2	2
DC PSU Redundancy	1+1	1+1
Input AC	External 100 – 240VAC, 50/60Hz, 4kW Max	External 100 – 240VAC, 50/60Hz, 1.8kW Max
Number of AC PSUs	5	3
AC PSU Redundancy	4+1	2+1
Heat Dissipation	13,658 BTU/hour (in full configuration)	6,146 BTU/hour (in full configuration)
Environment		
Operating Temperature	23 to 131°F (-5 to 55°C)	23 to 131°F (-5 to 55°C)
Operating Temperature; short term with fan failure	41 to 104°F (5 to 40°C)	41 to 104°F (5 to 40°C)
Storage Temperature	-38 to 150°F (-40 to 70°C)	-38 to 150°F (-40 to 70°C)
Storage relative humidity	5 to 95% relative humidity (RH)	5 to 95% relative humidity (RH)
Operating humidity, nominal	5 to 85% RH	5 to 85% RH
Operating humidity, short term	5 to 90% RH	5 to 90% RH
Operating altitude	-60 to 4000m	-60 to 4000m



Specifications (continued)

Allot Service Gateway Sigma E Platforms (continued)

SG-Sigma E14 and SG-Sigma E6	
Standards	
Designed to comply with NEBS, Level 3	Telecordia GR-1089-CORE , Telecordia GR-63-CORE
CE Conformity	Directive 2004/108/EC, Directive 2006/95/EC
Safety	UL 60950-1:2007 EN 60950-1:2006 / A11:2009 CAN/CSA-C22.2 No. 60950-1-07
EMC	European Directives 2004/108/EC & LVD 73/23/ EEC EN 55022: 2006 EN 55024:98 + A1: 2001 + A2: 2003 ETSI EN 300 386 V1.3.3:2005-04 FCC CFR 47 Part 15 Subpart B Industry Canada ICES-003:04; C108.8-M1983 VCCI Class A Technical Requirements, V-3/2001.04 Australia ACMA, AS/NZS CISPR22:2006
RoHS/WEEE Compliance	Directive 2002/95/EC (RoHS) Directive 2002/96/EC (WEEE)

Allot Service Gateway Sigma E Blades

	Switch & Flow Balancer (SFB) Blade	Core Controller (CC) Blade	Bypass (BP) Blade
Capacity			
Throughput	240 Gbps	16 Gbps	N/A
Number of Connections / Flows	N/A	5,000,000 / 10,000,000	N/A
Pipes / Virtual Channels	N/A	100,000 / 200,000	N/A
Number of Subscribers / PDP Contexts	N/A	800,000	N/A
Interface Types			
Console	Serial, RJ45 Connector	Serial, RJ45 Connector	N/A
Ethernet Interfaces	6 x 10 Gigabit Ethernet SR/LR/ER	N/A	N/A
Management	2 x 10/100/1000 BaseT	N/A	N/A
Availability			
Hot Swap	Supported	Supported	Supported
Redundancy	1+1	N+1	N/A
Dimensions and Power			
Size	Standard 1-slot ATCA blade	Standard 1-slot ATCA blade	Standard 1-slot ATCA blade
Power Dissipation (Max)	240W	215W	5W
Standards			
AdvancedTCA	PICMG 3.0 R.2.0	PICMG 3.0 R.2.0	PICMG 3.0 R.2.0

About Allot Communications

Allot Communications Ltd. (NASDAQ: ALLT) is a leading provider of intelligent IP service optimization solutions for fixed and mobile broadband operators and large enterprises. Allot's rich portfolio of solutions leverages dynamic actionable recognition technology (DART) to transform broadband pipes into smart networks that can rapidly and efficiently deploy value added Internet services. Allot's scalable, carrier-grade solutions provide the visibility, topology awareness, security, application control and subscriber management that are vital to managing Internet service delivery, enhancing user experience, containing operating costs, and maximizing revenue in broadband networks..

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