Allot High Performance Platforms

# Service Gateway Tera

## Delivering the Digital Experience

Allot Service Gateway Tera is a high-performance DPI-based platform built to power the deployment of Digital Lifestyle Services in fixed and mobile data networks that are on the path to software-defined networking (SDN) and cloud-based network services (NFV). It provides a unified framework for both physical and virtual service deployment across any access network, serving as a single point of integration for Allot bundled services such as real-time traffic management, video optimization, policy enforcement, service security and application-based charging, as well as value-added services (VAS) from other leading vendors.

## Highlights

- Engineered to operate in SDN environments
- Supports real-time traffic steering to NFV cloud services
- Delivers extreme performance: up to 500 Gbps in a single chassis; up to 4 Tbps in a chassis cluster
- Provides seamless, pay-as-you-grow scalability
- Designed to host and orchestrate value-added services in or out of the chassis
- Built to collect very large volumes of granular analytics data from the network
- Leverages DPI to enrich Policy and Charging functions

Allot communications

# Features

## Extreme Performance

Allot Service Gateway Tera (SG-Tera) provides the extreme performance and rich functionality that is needed to deliver digital lifestyle services in fixed, mobile and converged data networks operating in traditional, software-defined, and virtualized network environments. With 100 Gigabit Ethernet connectivity and terabits-per-second of throughput, this carrier-grade platform helps service providers satisfy the ever-growing demand for Internet services and bandwidth.

## Future-Proof Scalability

Modular platform architecture is designed for the tera era. Allot SG-Tera lets you start small and expand up (connectivity, throughput) and out (capacity) seamlessly. Pay-as-you-grow deployment reduces initial capital outlay and allows operators to respond quickly to market changes.

- **Capacity:** supports up to 15 million active subscribers (concurrently attached and active), and 360 million concurrent IP flows
- **Connectivity:** up to 8 x 100GE ports or 96 x 10GE ports
- **Throughput:** up to 500 Gbps in a single platform
- **Clustering:** supports up to 8 Allot SG-Tera platforms in a seamless cluster configuration, providing aggregate throughput of up to 4 Tbps
- **Management:** centrally configured and managed by Allot NetXplorer Management system, including full integration with Allot Subscriber Management Platform (SMP)

## Asymmetric Traffic Handling

Allot SG-Tera maintains accurate Layer-7 identification of applications when asymmetric upstream and/or downstream IP flows are processed by two or more platforms.

## High Availability

The platform is compliant with NEBS Level 3 and provides 1+1 redundancy at the system level, and N+1 blade-level redundancy mechanisms to ensure service continuity with no downtime due to component failure.

## Open, Carrier-Grade Architecture

Engineered to AdvancedTCA® standards for off-the-shelf, carrier-grade hardware, while standard software interfaces, protocols, and APIs facilitate rapid integration of third-party value-added services.

## Intelligent PCEF/TDF

Compliance with 3GPP standards enables Allot SG-Tera to provide intelligent Traffic Detection Function (TDF) and Policy and Charging Enforcement Function (PCEF) in 3G/4G mobile data networks. This allows operators to leverage superior traffic identification and classification to enrich the policy decisions of PCRF elements, and to enhance the charging capabilities of online and offline charging systems (OCS, OFCS).

## SDN / NFV Compatibility

Allot SG-Tera provides essential, real-time data-plane functionality that connects and interfaces with network and control-plane elements in SDN environments. The platform supports proprietary and standard OpenFlow implementations and provides extended functionality to support Allot's real-time Layer-7 traffic management, policy control, application charging, security, and service orchestration in software-defined networks.

In NFV environments, Allot SG-Tera steers only the relevant traffic to virtualized cloud services, which may be deployed in the Allot SG-Tera platform or externally. The platform dynamically balances the traffic load from multiple NFV service elements in real-time. Traffic steering may be based on application, subscriber, device, and/or topology ID such as cell or CMTS.

## Single Point of VAS Integration

Allot SG-Tera offers a growing portfolio of value-added services hosted in the platform as well as real-time traffic steering to external and third-party VAS systems. As a single point of integration for these services, Allot SG-Tera facilitates fast and cost-effective roll-out and accelerated ROI. Fully integrated VAS currently include Allot WebSafe (URL filtering), Allot WebSafe Personal (parental control, anti-malware), Allot ServiceProtector (anti-DDoS, anti-bot), and Allot VideoClass (video optimization).

## High-Resolution Data Records

From its vantage point in the network, Allot SG-Tera monitors and collects a rich variety of high-resolution usage data, including real-time transactions per user, per application, per device, per video session, per VoIP and Instant Messaging session, per Web session, and more. These flexible data records may be exported in standard formats to business intelligence systems and other operator systems for further manipulation and analysis. Frequency and triggers for data record export are configurable parameters, giving operators ready access to usage data that is critical to their business.

# Specifications

## Allot Service Gateway Tera Platform

| | Allot SG-Tera |
|---|---|
| **Platform Configuration** | |
| Chassis | 14-slot, AdvancedTCA (ATCA) |
| Maximum Available Slots | 14 |
| Core Controller (CC) Blade | 1 to 12 |
| Switch and Flow Balancer (SFB) Blade | 1 to 4 |
| Rear Input/Output (RIO) Blade | 1 to 4 |
| Service Blades | Up to 10 |
| **Capacity** | |
| Throughput per Platform | 500 Gbps |
| Throughput per Cluster | 4 Tbps using 8 platforms |
| Number of Flows | 360 Million (30 Million per CC) |
| Number of Active Subscribers | 15,000,000 |
| Number of Lines / Pipes / Virtual Channels | 512 / 4,800,000 / 24,000,000 (400,000 / 2,000,000 per CC) |
| **Interface Types** | |
| Ethernet Interfaces | 96 x 10 Gigabit Ethernet<br>8 x 100 Gigabit Ethernet |
| Management | 2 x 1 Gigabit Ethernet or<br>2 x 10 Gigabit Ethernet<br>(with 1:1 high availability) |
| Console | Serial, RJ45 Connector |
| **Availability** | |
| Bypass Hardware | Up to 4 independent, passive bypass units, supporting either 8 fiber-optic ports (4 links) or 16 fiber-optic ports (8 links) or 24 fiber-optic ports (12 links) per unit |
| High Availability | 1+1 system-level redundancy<br>N+1 redundancy of Core Controller blades |
| Management | Active-Standby HA on management ports |
| System | Redundancy for PEMs and fans |
| **Dimensions** | |
| Chassis Size | Standard 14U by 19" rack mount, height 619.5mm (24.3"), width 444mm (17.48"), depth 433.04mm (17.04"), with PEMs |
| Chassis Weight | Up to 87.6kg (193lb) |
| AC Power Supply Size | External 1U by 19" rack mount, 445 x 43.6 x 401mm, 13.4kg (29.5lb) |
| Multi-Port Bypass Unit (8 ports) | External 1U 19" rack mount, LxWxH 439.5x130x43.6mm, 2.4kg (5.3lb) |
| HD-16 Multi-Port Bypass Unit | External 1U 19" rack mount LxWxH 439.5x145x43.6mm, 3kg (6.6lb) |
| HD-24 Multi-Port Bypass Unit | External 1U 19” rack mount LxWxH 439.5x145x43.6mm, 3kg (6.6lb) |
| **Power** | |
| Input DC | -48V DC (-40V to -60V DC),<br>2 x 190A Max |
| Number of DC PEMs | 2 |
| DC PEM Redundancy | 1+1 |
| Input AC | 200 – 240VAC, 50/60Hz,<br>4 x 12A/240V Max, 4 x 15A/100V Max |
| AC Rated Output Power per PSU | 180 < Vin ≤ 265Vac, 4 x 2496W<br>170 ≤ Vin ≤ 180Vac, 4 x 2400W<br>100 ≤ Vin ≤ 132Vac, 4 x 1500W<br>85Vac ≤ Vin < 100Vac W Linear de-rating 1.3% per V |
| Number of AC PS Modules per PSU | 4 |
| AC Redundancy | N+1 or N+N |
| Heat Dissipation | 25,950 BTU/hour (in full configuration) |

| | Allot SG-Tera |
|---|---|
| **Environment** | |
| Operating Temperature | 5 to 40°C (41 to 104°F) |
| Operating Temperature, short term | -5 to 55°C (23 to 131°F) |
| Storage Temperature | -40 to 70°C (-40 to 158°F) |
| Storage Relative Humidity | 95%, non-condensing at tempera-tures of 23 to 40°C (73 to 104°F) |
| Operating Humidity, nominal | 5 to 85% RH |
| Operating Humidity, short term | 5 to 90% RH |
| Operating Altitude | -60 to 1800m (-197 to 5906 ft) at 40°C Max<br>1801 to 4000m (5909 to 13123 ft) at 30°C |
| **Standards** | |
| NEBS | Designed to meet NEBS Level 3<br>Telecordia GR-1089-CORE, GR-63-CORE |
| CE Conformity | 2004/108/EC Electromagnetic Compatibility Directive<br>2006/95/EC Low Voltage Equipment directive<br>2011/65/EU RoHS Restriction of the use of certain hazardous substances<br>2002/96/EC WEEE Union’s Wasted Electrical and Electronics Equipment Directive |
| Safety | EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011<br>EN 60825-1:2007<br>EN 60825-2:2004 + A1:2007 + A2:2010<br>UL 60950-1:2007 R14.10<br>CAN/CSA-C22.2 No. 60950-07 + A1:2011 +A2:2014<br>UL94 |
| EMC | EN 55022:2010/AC:2011<br>EN 55024:2010<br>ETSI EN 300 386 V1.6.1:2012-04 for use in telecommunication canters<br>EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6<br>FCC CFR 47 Part 15B Class A<br>Industry Canada ICES-003 Issue 5; C108.8-M1983<br>Australia ACMA, AS/NZS CISPR 22:2009 + A1:2010<br>VCCI Class A Technical Requirements, V-3/2013.04 |
| RoHS | EN 50581:2012 |
| Quality System and Environment | Certified to standards ISO 9001, ISO/IEC 90003, ISO 14001, SI ISO 27001 |

# Specifications



## Allot Service Gateway Tera Blades

### Switch & Flow Balancer Blades

| | | Switch & Flow Balancer SFB-400 Blade | Switch & Flow Balancer SFB-420 Blade |
|---|---|---|---|
| **Capacity** | Switching Capacity | 720 Gbps | 720 Gbps |
| | Flow Balancing Capacity | 160 Gbps | 540 Gbps |
| **Interface Types** | Console | Serial, RJ45 Connector | Serial, RJ45 Connector |
| **Availability** | Hot Swap | Supported | Supported |
| | Redundancy | 1+1 | 1+1 |
| **Dimensions and Power** | Size | Standard 1-slot ATCA blade | Standard 1-slot ATCA blade |
| | Weight | 3.44kg (7.7lb) | 5kg (11lb) |
| | Power Dissipation (Max) | 230W | 250W |
| **Standards** | AdvancedTCA® | PICMG 3.0 R3.0 | PICMG 3.0 R3.0 |

### Core Controller Blade

| | | Core Controller CC-400 Blade |
|---|---|---|
| **Capacity** | Throughput | 50 Gbps |
| | Number of Connections/Flows | 15,000,000/ 30,000,000 |
| | Pipes / Virtual Channels | 400,000 / 2,000,000 |
| | Number of Subscribers / PDP Contexts | 1,500,000 |
| **Interface Types** | Console | Serial, RJ45 Connector |
| **Availability** | Hot Swap | Supported |
| | Redundancy | N+1 |
| **Dimensions and Power** | Size | Standard 1-slot ATCA blade |
| | Weight | 3.44kg (7.7lb) |
| | Power Dissipation (Max) | 210W |
| **Standards** | AdvancedTCA® | PICMG 3.0 R3.0 |

### Rear I/O Blades

| | Rear Input/Output RIO-8C Blade | Rear Input/Output RIO-24C Blade | Rear Input/Output RIO-102CF Blade |
|---|---|---|---|
| **Interface Types** | | | |
| Ethernet Interfaces (Max per blade) | 8 x 10GBASE-SR/LR/ER/ZR or 8 x 1000BASE-T/SX/LX/ZX and 12 x 10GBASE-SR/LR | 24 x 10GBASE-SR/LR | 2 x 100GBASE-SR4/LR4 4 x 10GBASE-SR/LR |
| Management | 2 x 10GBASE-SR/LR or 2 x 1000BASE-T/SX/LX | 2 x 10GBASE-SR/LR or 2 x 1000BASE-T/SX/LX | 2 x 10GBASE-SR/LR or 2 x 1000BASE-T/SX/LX |
| **Availability** | | | |
| Hot Swap | Supported | Supported | Supported |
| **Dimensions and Power** | | | |
| Size | ATCA RTM blade | ATCA RTM blade | ATCA RTM blade |
| Weight | 1.1kg (3.3lb) | 1.42kg (3.1lb) | 1.3kg (2.9lb) |
| Power Dissipation (Max) | 30W | 40W | 44W |
| **Standards** | | | |
| AdvancedTCA® | PICMG 3.0 R3.0 | PICMG 3.0 R3.0 | PICMG 3.0 R3.0 |
| **Supported SFB Blades** | | | |
| Compatible with | SFB-400 | SFB-420 | SFB-420 |

### About Allot Communications

Allot Communications Ltd. (NASDAQ, TASE: ALLT) empowers service providers to monetize and optimize their networks, enterprises to enhance productivity and consumers to enjoy an always-on digital lifestyle. Allot's advanced DPI-based broadband solutions identify and leverage network intelligence to analyze, protect, improve and monetize mobile, fixed and cloud service delivery and user experience. Allot's unique blend of innovative technology, proven know-how and collaborative approach to industry standards and partnerships enables network operators worldwide to elevate their role in the digital lifestyle ecosystem and to open the door to a wealth of new business opportunities.

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