

# STG-1G STG-10G

## Stateful Traffic Generator®

1GbE, 4 or 8-Ports, Up to 8GbE of Aggregate Traffic,  
10 GbE, 2 or 4-Ports,  
Up to 40 GbE of Aggregate Traffic



### FEATURES / BENEFITS

- ✓ IP Stateful Traffic Generation with real time Network Impairment Measurements & Reports
- ✓ Emulation of Network Traffic to test device capabilities or Quality of Service(QoS)
- ✓ Network Monitoring, analysis and performance evaluation
- ✓ Interface - 2-Ports 10GbE Interfaces with 4-Ports per chassis possible or up to 8-Ports 10/100/1000 Interfaces(Copper or Fiber)
- ✓ Embedded System with no software to load and an Easy to use 10/100/1000 Ethernet GUI Interface
- ✓ Real Time Traffic Graphs, Network Statistics, Delay, Jitter, BitRate, Packet Loss and BERT Function
- ✓ Multiple Senders and Receivers allowed with Log Options
- ✓ Protocols: IPv4, IPv6, ICMP, TCP, UDP, SCTP, DCCP and Pcap Player
- ✓ Distributions: Uniform, Constant, Exponential, Pareto, Cauchy, Normal, Poisson, Gamma, Weibull
- ✓ Handy PCAP player allowing trace statistics with logging information inserted into the packet payload
- ✓ Optional: Integrated Packet Crafter/ Packet Viewer
- ✓ Optional: Capture to Pcap file feature via TShark
- ✓ 2U Front Load Rack Mount Enclosure, 90-240VAC

### DESCRIPTION

The Stateful Traffic Generator® STG-10G produces multiple line rates of 10/100/1000 and 10GbE IP network traffic. The product was designed to generate and monitor IP traffic from clients to servers to stress test routers, servers and firewalls capable of producing extreme network loads. Additionally, STG-10G can generate and receive traffic to itself to perform network testing at various levels. The product is fast and simple to configure with an intuitive GUI interface.

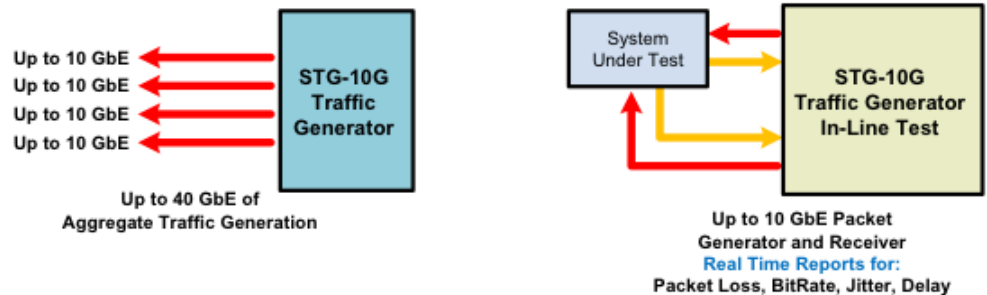
At the heart of the STG-10G is a powerful software design optimized for IP Stateless or Stateful Traffic Generation running on Linux. The software is integrated with an INTEL® XEON Multicore Processor and the INTEL® Data Plane Development kit openly known as DPDK for fast packet processing. The DPDK kit allows Line Rate performance even for tiny 64byte packets.

The STG-10G performance can equal FPGA high priced systems for less than half the cost.

The STG-10G Stateful Traffic Generator® is able to generate multiple unidirectional flows many senders toward many receivers.

#### STG-1G & STG-10 APPLICATION BLOCK DIAGRAMS:

1G to 10GbE IP Traffic Generator & IP Packet Checker



#### Customizable flow level properties:

- duration
- start delay
- total number of packets
- total number of KBytes

#### Supported Layer 3 features:

- protocols: IPv4, IPv6

#### Customizable header fields:

- source and destination IP addresses
- source interface binding (for multi-homed devices)
- initial TTL value
- DS byte
- NAT traversal: FTP-like passive mode

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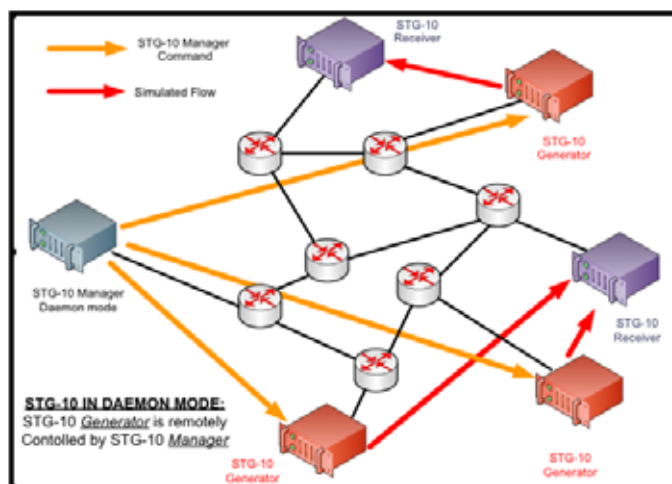
For More Information see our website [www.ecdata.com](http://www.ecdata.com) • [sales@ecdata.com](mailto:sales@ecdata.com)

### Supported Layer 4 features:

- protocols: TCP, UDP, ICMP, DCCP, SCTP
- customizable header fields:
- source and destination port numbers

### Supported Layer 7 features:

- Predefined stochastic PS (Packet Size) and IDT (Inter Departure Time) profiles:
- Telnet, DNS, Quake3, CounterStrike (active and inactive), VoIP (G.711, G.729, G.723)
- Payloads content: random or read from file
- Stochastic processes supported for both PS and
- for transport level (specified for each flow stream id for SCTP of each sender/receiver) it is possible to specify source and destination ports, transport protocol (UDP, TCP, SCTP and DCCP), Nangle algorithm for TCP, congestion control for DCCP and ICMP message.



### Inter Department Times:

- Supported distributions: Uniform, Constant, Exponential, Pareto, Cauchy, Normal, Poisson, Gamma, Weibull
- Explicit random seed selection for replicating the same stochastic process
- Loading of PS and IDT series from file

### Cross-layer features:

- Real traffic from PCAP traces (only for TCP and UDP):
- Payload content, PS and IDT profiles according to the provided PCAP trace
- Replication of bidirectional flows
- Generation speed scaling
- Cyclic repetition of flow content

### Packet-level QoS metrics:

- Bitrate
- Packet rate
- One way delay (requires clocks synchronization)
- Round Trip Time
- Packet loss
- Dropped Packets
- Bit Error Rate Test(BERT)

STG-10G generates IPv4 and IPv6 traffic specifying the traffic destination, the network interface (for Unix-like machine) and parameter of header IP like TTL and TOS. The duration of a test can be temporal or limited by the amount of the generated traffic (number of packets or amount of KiloByte).

It can generate traffic at different levels for each of which is possible to set configurable parameters:

- for host level (specified for each sender/receiver) it is possible to set log type and location, logging information inserted into the packet payload (none, minimum, extended), interface/address on which to send/receive signaling packets;
- for network level (specified for each individual flow of each sender/receiver) it is possible to set interface/address on which to send/receive probing packets, time to live, differentiated services byte (type of service);
- for flow level (specified for each flow of each sender/receiver) it is possible to set duration, time to wait before start, number of packets/bytes to generate, type of application to emulate (DNS, Telnet, VoIP with different codecs, Couter Strike and Quake3), random distribution for the size of the packet (constant, uniform, exponential, Pareto, Cauchy, normal, Poisson, gamma, weibull) and for the inter packet time (constant, uniform, exponential, Pareto, Cauchy, normal, Poisson, gamma, weibull, on/off), Pcap file to generate, seed of the random number generator, direction of the traffic (one way, round trip), inter packet time recovery mechanism (to sustain the required rate in presence of frequent context switches or other disturbing factors);
- for transport level (specified for each flow stream id for SCTP of each sender/receiver) it is possible to specify source and destination ports, transport protocol (UDP, TCP, SCTP and DCCP), Nangle algorithm for TCP, congestion control for DCCP and ICMP message.

# SPECIFICATIONS

## Application

Designed to generate and monitor IP traffic from clients to servers to stress test routers, servers and firewalls capable of producing extreme network loads. Can also generate and receive traffic to itself to perform network testing at various levels.

## Data Interface

Up to Four 10GbE Copper or Fiber  
Up to Eight 10/100/1000 Copper or Fiber

## Configuration Ports

10/100/1000 Ethernet Port, Supervisor Port and Management Port

## Data Rates

Up to 10GbE

## Supported Layer-3 Features

protocols: IPv4, IPv6

## Supported Protocols

IPv4, IPv6, ICMP, TCP, UDP, SCTP, DCCP and Pcap Files for Play Back with Statistics

## Application Layer Protocols

DNS, Telnet, VoIP (G.711.1, G.711.2, G.723.1, G.729.2, G.729.3) CSa, CSi and Quake3

## Supported Distributions

Distributions: Uniform, Constant, Exponential, Pareto, Cauchy, Normal, Poisson, Gamma, Weibull

## Packet level QoS metrics

Bitrate, Packet rate, One way delay, Round Trip Time, Packet loss, Dropped Packets

## Permission Keys

Sold individually Per Unit and for Upgrades)

## Surge Protection

Main power supply

## Power Source

AC Mains: 100-240VAC @ 10%, 50/60Hz, 0.16/0.08A, Auto Range

## Environmental

Operating Temperature....32° to 104° F (0° to 40° C)  
Relative Humidity.....5 to 85% Non-Condensing  
Altitude.....0 to 10,000 feet

## Dimensions

Height ..... 3.5 inches (49 mm)  
Width ..... 17.20 inches (437 mm)  
Length ..... 14.50 inches (369 mm)

## Weight

28 Pounds (12.7kg)

## Warranty

Three Years, Return To Factory

## Regulatory Approvals

UL, CSA, CE, CCC, FCC and RoHS

## Web Browser Compatibility

Explorer, FireFox, Opera, Google Chrome, Safari

## ORDERING INFORMATION

PT # 214000

Model: STG-1G\_4, Stateful Traffic Generator 4-Core

PT# 215000

Model: STG-1G\_8, Stateful Traffic Generator 8-Core

PT# 226000

Model: 4-PORT 1G COPPER

PT# 226001

Model: 2-PORT 1G FIBER

PT# 226002

Model: 2-PORT 10G COPPER

PT# 226003

Model: 2-PORT 10G FIBER

INCLUDED WITH EACH UNIT:

- 1) Operations Manual
- 2) U.S.A. Grounded Power Cord, Part # 713015
- 3) Rackmount Kit Ears
- 5) Two Ethernet Cables
- 6) One Ethernet Cross Over Cable

### Optional Power Cords

- A) United Kingdom, Part # 713016
- B) Continental Europe, Part # 713017
- C) Other: Specify Country on Purchase Order

## Other East Coast Datacom Products

EDS-1G, Ethernet Delay Simulator  
RDS-PLUS, Serial Data / Telco Delay Simulator

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