The Stateful Traffic Generator® model STG-10G is based on the well known traffic generation engine D-ITG™. The STG-10G is composed of a Graphical User Interface (GUI) that wraps the D-ITG™ engine, INTEL® DPDK Fast Packet Technology and other test tools.

Using D-ITG™, the STG-10G is capable of producing IPv4 and IPv6 traffic by accurately replicating the workload of current Internet or typical user applications. The platform supports 8-Ports 10/100/1000 and 4-Ports of 10GbE traffic generation managed via the easy to use GUI. This allows users to perform load tests on hardware prior to deployment and to simulate wired or wireless network traffic behavior.

The D-ITG™ generation engine provides many interesting and unique features. Thanks to it the STG-10G is also a network measurement tool able to measure the most common performance metrics such as throughput, delay, jitter and packet loss at the packet level. The STG-10G can generate traffic following stochastic models for packet size (PS) and inter departure time (IDT) that mimic application-level protocol behavior. By specifying the distributions of IDT and PS random variables, it is possible to choose different renewal processes for packet generation: by using characterization and modeling results from literature, STG-10G is able to replicate statistical properties of traffic of different well-known applications such as Telnet, VoIP - G.711, G.723, G.729, Voice Activity Detection, Compressed RTP - DNS, network games.

At the transport layer, the STG-10G currently supports UDP, TCP, ICMP, DCCP, SCTP and soon to be released support for IGMP. Additionally an FTP-like passive mode is also supported to conduct experiments in the presence of NATs, and it is possible to set the TOS (DS) and TTL IP header fields.

The STG-10G Stateful Traffic Generator® is able to generate multiple unidirectional flows, many senders toward many receivers. The STG-10G supports two modes of packet transmission. One being the Standard Mode for realistic traffic simulation allowing adjustable data rates. The Turbo Mode allows line rate transmission utilizing INTEL® DPDK drivers with Pcap files containing any type of traffic.

**FEATURES / BENEFITS**

- IP Stateful Traffic Generation with real time Network Measurements & Reports
- D-ITG™ Traffic Engine operates in Standard and Turbo using INTEL® DPDK Fast Packet Technology
- Emulation of Network Traffic to test device capabilities or Quality of Service (QoS)
- Network Monitoring, analysis and performance evaluation
- Interface - 4-Ports 10GbE and up to 8-Ports 10/100/1000GbE 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 and Packet Loss
- Multiple Senders and Receivers allowed
- Protocols: UDP, TCP, ICMP, DCCP, SCTP (IGMP coming soon) and Pcap Player
- Distributions: Uniform, Constant, Exponential, Pareto, Cauchy, Normal, Poisson, Gamma, Weibull
- Optional: Integrated Packet Crafter/ Packet Viewer
- 2U Front Load Rack Mount Enclosure, 90-240VAC
**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 4-Ports 10GbE Copper or Fiber
- Up to 8-Ports 1GbE Copper or Fiber
- 10/100/1000 Copper: GUI Management

**Configuration Ports**
- 10/100/1000 Ethernet Port, Supervisor Port and Management Port

**Data Rates**
Up to 10GbE per port, 4-Ports 10GbE capable

**Supported Layer-3 Features**
- IPv4, IPv6

**Supported Protocols**
- UDP, TCP, ICMP, DCCP, SCTP 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**
- TX/RX Packets, Delay, BitRate, Packet Loss

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

**Environmental**
- Operating Temperature........32º to 104º F (0º to 40º 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**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>214000</td>
<td>STG-10G_4</td>
<td>STG-10, Stateful Traffic Generator, 4-Core</td>
</tr>
<tr>
<td>215000</td>
<td>STG-10G_6</td>
<td>STG-10, Stateful Traffic Generator, 6-Core</td>
</tr>
<tr>
<td>226000</td>
<td>4-Port 1G Copper Interface</td>
<td></td>
</tr>
<tr>
<td>226001</td>
<td>2-Port 1G Fiber Interface</td>
<td></td>
</tr>
<tr>
<td>214002</td>
<td>2-Port 10G Copper Interface</td>
<td></td>
</tr>
<tr>
<td>214003</td>
<td>2-Port 10G Fiber(SFP Included) Interface</td>
<td></td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>713016</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>713017</td>
<td>Continental Europe</td>
</tr>
</tbody>
</table>

C) Other: Specify Country on Purchase Order

**Other East Coast Datacom Products**
- EDS-1G, Ethernet Delay Simulator
- RDS-PLUS, Serial Data / Telco Delay Simulator
OVERVIEW: STG-10G GUI BASIC SCREEN BY SCREEN OVERVIEW

End Points Screen

Experiments Management
Flow Management

Experiment Results

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>UDP</td>
<td>256256</td>
<td>9.090 0.176 0.294</td>
<td>0.000 0.255 0.260</td>
<td>597.123 617.362</td>
<td>18.429 14.109</td>
</tr>
<tr>
<td>TCP</td>
<td>142799</td>
<td>0.327 0.512 1.814</td>
<td>0.449 0.555 1.973</td>
<td>149.807 153.457</td>
<td>0.000 0.000 3.000</td>
</tr>
<tr>
<td>ICMP</td>
<td>4920</td>
<td>0.000 0.291 0.210</td>
<td>0.000 0.069 0.060</td>
<td>1.945 2.013</td>
<td>0.000 0.000 3.000</td>
</tr>
<tr>
<td>Aggregate</td>
<td>408383</td>
<td>6.691 6.871 1.814</td>
<td>0.561 0.810 1.763</td>
<td>741.846 772.056</td>
<td>0.000 1.588 14.006</td>
</tr>
</tbody>
</table>

Aggregate timeseries

- Delay
- Jitter
- Bitrate
- Packet-loss