The Torrent 5100 GTS Product Suite

PC-Based Mobile Station (optional)

MTS-5100s

GGSNs

NTS-5100s

OA&M Network to MTS / NTS

Gn Network

Gi Network

CS-5100

UI-5100

HTTP/FTP/SMTP/POP3/ DNS/WAP Server(s)
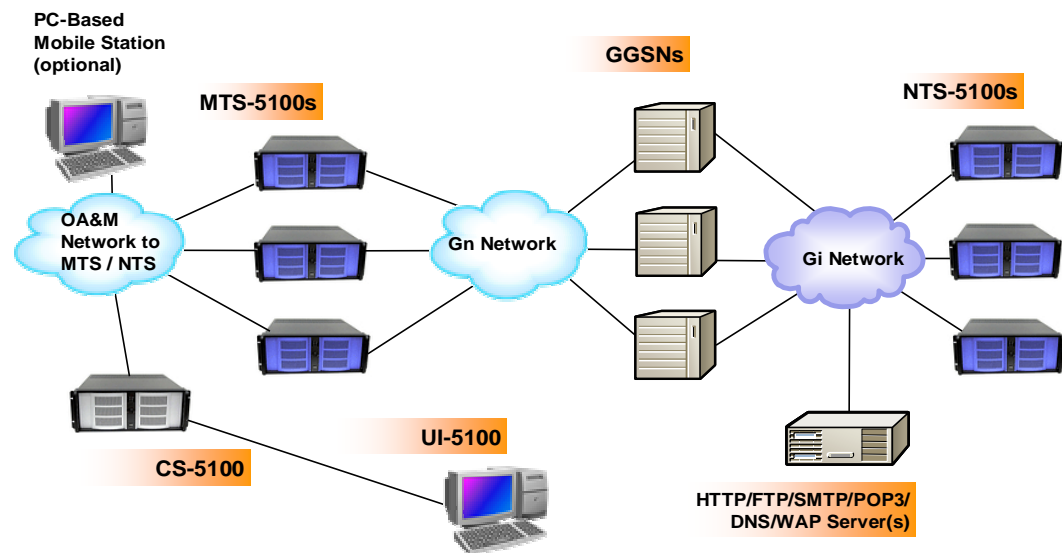
A Unified Third Generation System

The Torrent 5100 GTS (GGSN Test System) consists of a set of nodes that work together to produce the most complete GGSN testing system available.

MTS-5100 – Our Mobile Traffic Simulator is the workhorse of the Torrent 5100 GTS. Able to simulate up to one million subscribers in a single node, the MTS-5100 precisely follows the 3GPP specs to reproduce mobile behavior in a wide variety of protocols. Then it goes a level deeper to emulate Blackberry Always-on behavior. In addition, the MTS-5100 can handle many parallel activities in a single mobile.

NTS-5100 – The MTS-5100 can send to real application servers or to our Network Traffic Simulator. The NTS-5100's built-in servers offer a lab-friendly way to send and receive application traffic.

CS-5100 / UI-5100 – Highly flexible mobile configurations...easy yet powerful scripting capabilities...the ability to use default tests or customize per department or per user...detailed hierarchical statistics and event traces down to the per-context level. These control center features make it easy to drive the Torrent 5100 GTS and debug your GGSN.

Other Configurations

PC-based Mobile Station – The MTS-5100 allows a PC-based mobile station to run applications through the GGSN-under-test. The MTS-5100 acts as a relay for uplink and downlink traffic, even while traffic tests are running. Great for:

- Quickly verifying basic system sanity
- Reproducing user action in field issues
- Examining system performance from a user perspective, such as QoS of streaming multimedia while other traffic is running.

GS-5100 – Do you have a special testing need for a GGSN Simulator? The GS-5100 handles Gn and Gi traffic, passing data to fill the GGSN role where required.

How Torrent 5100 GTS Benefits You

- Eliminates need for in-house tools development and maintenance
- Improves your product's quality and robustness
- Reduces field outages
- Unique capabilities allow difficult problems to be reproduced and fixed.
- Reduces development and testing cost through more efficient and effective testing.

The Third Generation Difference

The Torrent 5100 GTS is an original – the first-ever Third Generation wireless data test system. But what does that mean, and what difference can it make in your lab, your team and your product?

First generation test systems were essentially simple packet blasters. As the industry matured, second generation systems became available which featured stateful transactional mobile traffic. In 2005, Mobile Metrics introduced Torrent 5100 GTS as the first in the new Third Generation class of products, setting a new standard for precise mobile simulation, programmable flexibility, torrential power and sensible, easy-to-use control.
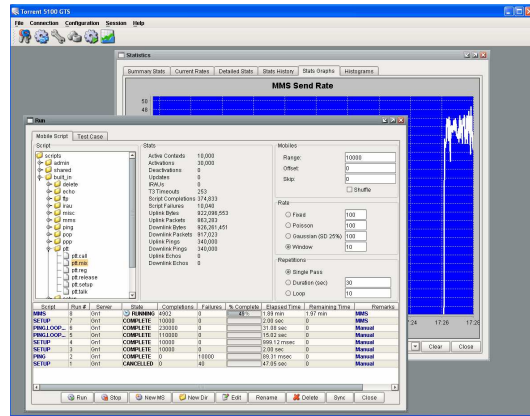
The following figure outlines some of the key differences between the three generations of systems:

	1st Generation	2nd Generation	3rd Generation
Programmability	None	None	Per mobile scripting
Testing Automation	Minimal	Minimal	Automated, hierarchical test cases
Parallelism	Nearly absent	Minimal	Parallelism from the ground up, including per-mobile parallelism.
Mobile Behavior	Simulated signaling and bearer byte streams	Mobiles behave per specification	Mobiles behave like actual mobile brands
Statistics	Limited	Moderate	Extensive, hierarchical, and per-mobile
Software Updates	Manual	Manual	Automatic (HTTP based)

MOBILE
M E T R I C S
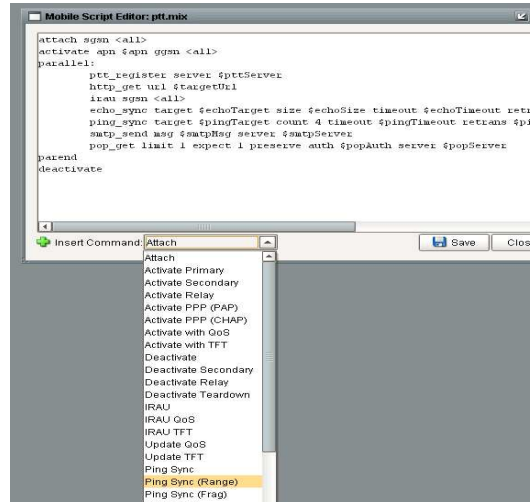
Fulfilling User Desires

All in One Place

Listening to customers is our strength. Our users have told us what they want in a user interface, and we've put it into the Torrent 5100 GTS.

The UI-5100 driving experience is superb. Get immediate feedback because the key information about a run is all in one place – results, stats, histories, and more.
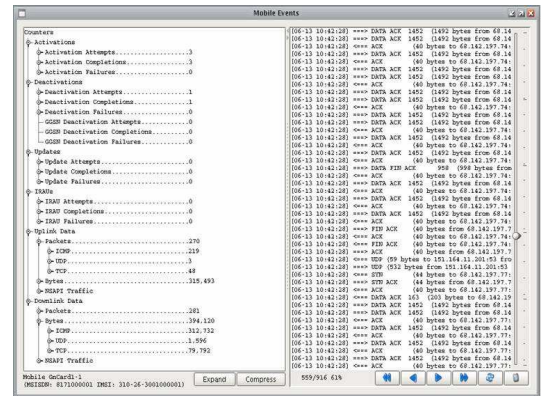
Intuitive Scripting

Use our challenging test suites, or create your own. Our users tell us that it's easy to set up test scripts for the Torrent 5100 GTS.
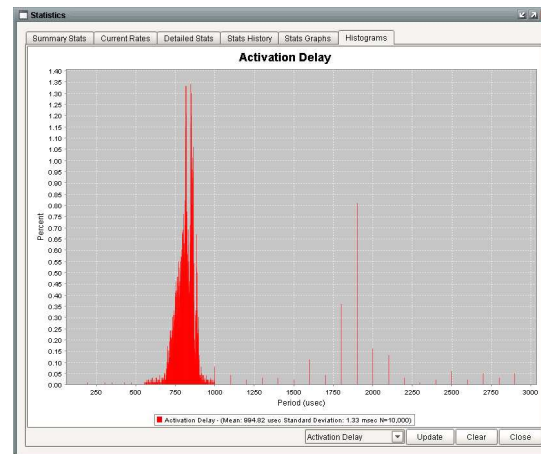

Drill Down to the Problem

You ran a test, but what happened? Where did your GGSN or network go wrong? The Torrent 5100 GTS gives you tremendous insight through extensive statistics and traces, down to the per-context level.

Full, Cleanly-Presented Information

The Torrent 5100 GTS captures more than 450 Gn and Gi statistics, including packet loss and latency, organized hierarchically to see the big picture or the fine details. You can look at statistics in user windows or export them to Excel[R].

Our high-resolution histograms allow you to easily interpret system performance. In the example below, the average activation delay is 400 usec with a low standard deviation.

Features and Specifications

Supported Protocols

IP
- Includes fragmentation / reassembly.

TCP
- Full TCP stack built into each mobile.

HTTP
- 1.0 and 1.1
- GET, POST
- Configurable headers
- Configurable POST bodies

UDP
- Best effort and reliable echoes
- Downlink response size control.
- Size ramps

FTP
- Passive FTP get support

WAP
- 1.2 and 2.0
- GET
- 1.2 Segmentation / Reassembly

MMS
- Send, Receive and Notify

SMTP
- Send

POP3
- Get with mail management support

PTT
- General support for Push-to-Talk over Cellular (PoC)

SIP
- Registration, Call establishment, Call teardown

RTCP
- Floor control management for PTT

RTP
- Bidirectional speech for PTT

ICMP
- Best effort and reliable ping
- Ping size ramping

DNS
- Allows mobiles to resolve IP addresses over GTP before fetching URLs, etc.

PPP
- All mobiles support the PPP PDU type in addition to IP.

Dynamic Routing Protocols (Gn/Gi)
- OSPF, RIP

Virus Injection

The Torrent 5100 GTS offers the capability to inject viruses into messages from simulated mobiles. Typically, either hex data representing a virus, or a file simulating virus infection, can be inserted into a message.

Types of uplink messages supporting virus injection:
- HTTP Post
- SMTP
- MMS (picture)
- RTP (audio)

Blackberry Simulation

Besides supporting general 3GPP mobile specifications, the MTS-5100 also accurately reproduces Blackberry Always-On behavior. This unique behavior of Blackberries causes GGSNs a lot of hassle in the real world environment. You can prepare your GGSN with Torrent.

Built-in "Challenge" Test Suites

Our Challenge test suites come standard with the Torrent 5100 GTS. Numerous rigorous tests are based on actual call models and our own assessment of how best to test a GGSN.

Basic
Signaling, Mobility, Data
Application / Protocol Verification
HTTP, MMS, WAP, SMTP, POP3, FTP, PTT, DNS
Parallelism
Increasing complexity of single-mobile events
General Traffic
Increasing complexity of multiple-mobile events
Rate-Based Traffic
Tune activation, mobility and application event rates
Bandwidth Limits
Bearer plane stress
Parallel Traffic
Classes of mobiles running different parallel profiles to create real-world modeling
Soak Tests
Long-duration runs
Subscriber Capacity
Exercise system limits on subscribers / sessions

System Parameters

Subscriber sessions: Up to 1,000,000+ per node
Number of supported subscriber sessions is a priced, configurable system option.
Signaling: 40,000 activations / second
Bearer: 550 Mbps / second (single node)
Linear scalability with multiple MTS-5100's
Packet Size: 64 KB with built-in IP fragmentation
SGSNs: 1,500

General Features

- IP and PPP PDU types
- Primary and secondary contexts
- Transparent linear scalability
- Multiple user support
- Multiple GGSN support
- Multiple APN support
- Shuffled / random mobile traffic
- Easy installation and configuration
- Automatic software updates

Ordering Information

Product Identification

Torrent 5100 GTS (GGSN Test System)

MTS-5100	Mobile Traffic Simulator
NTS-5100	Network Traffic Simulator
CS-5100	Control Server
UI-5100	User Interface
GS-5100	GGSN Simulator

Also ask about our:

Torrent 6100 STS (SGSN Test System)
Torrent 7100 WTS (WiMAX Test System)
Encore 1250 PRS (Packet Replay System)

Release Sequence

V1.2 (maintenance release) – March 2006
V2.0 (enhancement release) – August 2006
V3.0 (enhancement release) – March 2007

Free Trial

To learn more about the Torrent 5100 GTS or to setup a free evaluation trial, just contact our sales department at extension 1 and we'll be happy to assist you.

About Mobile Metrics

Mobile Metrics is a specialized company that focuses exclusively on wireless data test systems, with a specific focus on realistic traffic generation.

At Mobile Metrics, our mission is to help make you successful by providing the most advanced and innovative test systems possible. Beyond our focus on technology is our focus on you, your needs and your goals. From the first consultation to the latest phone call for help, you'll see how a specialized partner can make a difference in your wireless data testing.

Our company grew out of decades of experience in wireless data equipment design and testing. We understand your challenges, since we've been in your shoes. Let our passion for wireless data excellence help take your product and your team to a new level of performance.

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