



IP Traffic - Test & Measure

**IP Traffic generator and measurement tool for IP networks:
Wired, Wireless, PLC, mobile or cellular IP networks.**

Certification of wired and wireless IP networks

Telcos Enterprise users
Evaluation labs ISPs R & D
Network equipment manufacturers

IPv4

IPv6 (June 2005)

Download trial version at
www.omnicor.com/netest.htm

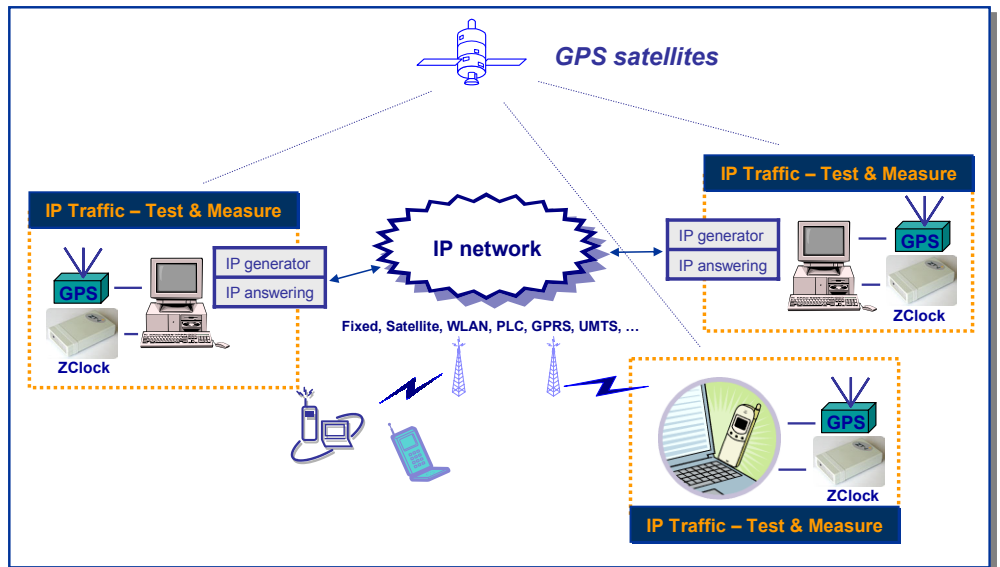
**Windows 98,
2000 & XP**



Desktop & Laptop

'IP Traffic - Test & Measure' is a software testing tool that can run on any Windows PC (98, 2000 or XP). It can generate, receive, capture and replay IP traffic, and measure end-to-end performance and Quality Of Service over any IP network.

'IP Traffic - Test & Measure' can be used with two optional products in order to have a precise time reference and to realize measures with a high accuracy: a GPS kit provides an absolute time reference and the ZClock box delivers a high precision clock. This allows time stamping of IP packets sent or received, and measurement of QoS parameters over the IP network used.



'IP Traffic - Test & Measure' offers the following main modules:

- 'IP Generator' with multiple modes to generate traffic and real time statistics. A replay traffic mode is particularly useful to generate real traffic (web session, FTP, videoconferencing, ...) captured in real time with the 'Traffic Sniffer' module.
- 'IP Answering' module with real time statistics.
- 'Traffic Sniffer' to capture IP traffic in real time. Captured traffic can then be replayed by the 'IP Generator' module.
- 'Traffic Observer' for the on-line or off-line analysis of many QoS parameters (send and receive): Throughputs, Inter Packet Delay, Packet Erasure Rate (PER), Packet Transit Delay, ... A graphical analyser with many features provides a view of IP traffic on each IP connection, and the user can configure parameters and statistics to export in a file for use with an external tool (Excel for example).
- Two operating modes: Normal or Remote (for remote control of a PC with 'IP Traffic - Test & Measure' used as server).

Omnivor

1170 Foster City Blvd.
Suite 312
Foster City, CA 94404
U.S.A.

Phone: +1(650) 572 0122
Fax: +1(650) 572 0533
info@omnicor.com
<http://www.omnicor.com>

'IP Traffic - Test & Measure' key features

IP Traffic Generator (TCP, UDP & ICMP) – up to 16 simultaneous connections

Three operating modes: 'Unitary', 'Automatic' or 'Replay Traffic'

- ▶ Unitary testing mode (with independent parameters for each connection) - the following parameters can be defined: destination parameters (IP address, port number and protocol: TCP, UDP or ICMP), internal or external data source generator (user file with a loop counter or user DLL), the RTT (Round Trip Time) option, the ToS (Type of Service) byte and the option to save data received on the connection. The internal data generator offers different parameters: data to send (mathematical law, packet generator or file to send), the packet size, the inter packet delay, the average throughput if needed, and the option to save data sent on the connection.
- ▶ Automatic testing mode - the user chooses the numbers of connections to activate. Starting time, data volume to send and packet size on the enabled connections can be configured.
- ▶ Replay traffic mode - to replay traffic previously captured by the 'Traffic Sniffer' module on multiple IP connections.
- ▶ Traffic statistics for each connection: Sent and Received Throughputs, Sent and Received Packet Throughputs, Sent and Received data volumes, Sent and Received Packets, Data Volume to send, Remaining volume, Sequence Numbering Errors and RTT.

IP Answering (TCP & UDP) – up to 16 simultaneous connections

- ▶ Select and define for each connection the following parameters: a specific IP address or any, the port number and protocol (TCP or UDP). For each connection, five operating modes are available: 'Echoer', 'Echoer in a file', 'Absorber', 'Absorber in a file' and 'Absorber + Generator'.
- ▶ Traffic statistics for each connection: Sent and Received Throughputs, Sent and Received Packet Throughputs, Sent and Received data volumes, Sent and Received Packets, Data Volume to send, Remaining volume, Sequence Numbering Errors and Data not echoed.

Traffic Sniffer

- ▶ Define IP filters to capture traffic at the driver level (under the TCP/IP stack). Captured traffic is time stamped in real time and saved in a file.
- ▶ An analysis tool operates on a captured traffic file to generate data traffic files used by the 'IP Generator' module.

Traffic Observer: a powerful tool for on-line and off-line graphical analysis

The screenshot shows the 'IP Traffic - Test & Measure' software interface, specifically the 'Traffic Observer' tab. The main window has a menu bar (File, Edit, Configuration, Tools, File Downloading, Automation Tool, Help, Operating mode) and a tabbed interface with 'Traffic Observer' selected. The main display area is titled 'Graphic Display (based on IP Traffic Driver Statistics)' and features a graph with 'Kb/s' on the y-axis (0 to 100) and 'Transmit (Tx)' on the x-axis. A text box in the center of the graph contains the following text:

- ▶ Two operating modes to display statistics: on-line (real time) and off-line (analysis of traffic files captured by the 'Traffic Sniffer').
- ▶ On-line statistics: IP throughput snapshot + IP throughput average + UDP / TCP throughput + inter packet delay.
- ▶ Off-line statistics : on-line statistics + Packet Erasure Rate (PER) + Packet Transit Delay.
- ▶ Display statistics for each connection (send and receive) of the 'IP Generator' or the 'IP Answering' module.
- ▶ Graphical analyser with many functions (statistical laws, user defined trigger, ...) to analyse the following parameters over the IP network used: IP throughput, inter packet delay, PER quality and packet transit delay. This analyser allows graphical correlation of several parameters and is very useful for precise analysis of characteristics and problems on the IP network used.
- ▶ With the off-line mode, you can replay traffic files by using a 'video recorder' mode (play, pause, stop) with index management.
- ▶ Export statistics in a file for the 'IP Generator', 'IP Answering' and 'Traffic Observer' modules with parameters and conditions defined by the user.

On the right side of the main display, there are several control panels:

- Statistic law to display:** Average (selected), Standard Deviation, Confidence Distance.
- Other parameters:** + IP Throughput, + Inter Packet Delay, + PER Quality, + Packet Transit Delay.
- Triggers:** Triggers Parameters, Start Triggers, Stop Triggers.
- Scales:** Time Scale, Tx Amplitude Scale Factor, Rx Amplitude Scale Factor.
- IP Generator / IP Answering:** Radio buttons for 'IP Generator' (selected) and 'IP Answering'.
- Statistics Display:** Radio buttons for 'Values' (selected) and 'Graphics'.
- Graphics:** 'All connections' dropdown, radio buttons for 'IP Throughput', 'Inter Packet Delay', 'Packet Transit Delay', 'PER Quality', and 'Packet Statistics'.
- Buttons:** 'Reset Statistics' and 'Help'.

At the bottom of the main display, there are two rows of 'High mark' and 'Low mark' indicators, both showing '0'. Below these are 'Remote Traffic Files' (Download...), 'Off-Line Traffic Analysis' (Yes/No radio buttons, Process Files..., Play >, Play >>, Pause, Stop), 'Index (On-Line or Off-Line)' (Next >, Add, 00/00, Remove, Remove all), and 'Export Statistics' (Parameters, Start, Stop).

The bottom section of the interface includes:

- GPS ZClock Activity:** 18 %.
- IP Generator Activity (based on application data):** Active connections: 0, Throughput: 0.00 b/s.
- IP Answering Activity (based on application data):** Active connections: 0, Throughput: 0.00 b/s.
- Sniffer Activity:** File size, Time before disk limit.
- Remote Control of an IP Traffic - Test & Measure system:** Remote file context, Remote IP address or Host Name, Port: 2600, Remote Operation: Run all processes, Stop.
- Local Operation:** Start All Local Processes, Stop All Local Processes.

'IP Traffic - Test & Measure' and the Traffic Observer tab