

P1

ETHERNET ANALYZER

Prowla P1

NETWORK TESTING



The Ultimate Next Generation Network Test Solution

Consultronics Products Group

www.EXFO.com

Telecommunications Test and Measurement

EXFO

EXPERTISE REACHING OUT

The Ultimate Next Generation Network Test Solution

Until very recently, fiber based GigE communications has been reserved for costly services aimed at very large corporate enterprise networks. That is now changing as the telecom carriers rapidly evolve their networks towards true 21st century networks in an effort to remain competitive while rolling out market winning services to a far larger base of bandwidth hungry consumers.

Building efficient networks that streamline voice, data and video packets to and from all subscribers of the served area through next generation switches and routers requires careful planning and massive equipment upgrades. With this in mind Consultronics has developed a test tool that ensures that next generation networks offer the performance required by today's network managers.

The Prowla P1 is a powerful analyzer that has been purpose built with performance and efficiency in mind. Telecom service providers and other carriers will benefit from this award-winning package that combines exceptional test functionality with an attractive price.

An Exceptional Analyzer

The Prowla P1 packs all of the needed testing functionality into a small and field portable package. It features the possibility of two full rate optical GigE Ethernet test ports, two Fibre Channel test ports, or two electrical GigE test ports and two 100/10baseT test ports plus a 100/10baseT Ethernet control port and a USB control port.

Perfect for FTTx Deployments

The Prowla P1 can terminate Optical GigE circuits for first time commissioning. It can also be inserted in circuit with true optical rate pass through mode analysis.

Backhaul Network Testing

The Prowla P1 is an important part of supporting carrier facilities. Whether GigE links are in place to support the largest corporate enterprise customers, for the latest generation of DSLAMs or FTTx media servers, for Storage Area Networks (SAN), or simply to aggregate and carry voice and data traffic, the Prowla P1 is an important part of network build-outs. It offers a cost effective way to bring service providers excellent visibility of their networks through in-service monitoring.

The Prowla P1 offers a variety of control and operating features.

- simple front panel mounted LCD display and navigation keys
- using a Notebook or PDA equipped with a web browser
- connected by Ethernet or USB
- using web browser access from elsewhere in network via the test interfaces



The Prowla P1 Ethernet / IP Transmission Testing and Analysis for the 21st Century

The Prowla P1 can be accessed and controlled through the use of standard and commercially available wireless dongles. Either Bluetooth or 802.11b can be used. The Prowla P1 can therefore be controlled untethered using a nearby wireless PDA or notebook computer.

The sophisticated and complete auto-configuration philosophy of the Prowla P1 will allow the technician to initiate a test with a single button press. With its embedded, dynamic user documentation and help facilities even a new user can rapidly put the unit into use. The Prowla P1 will even inform the user as to what interface on the connection panel to use.

Introducing the PRC System

Consultronics PRC is a Prowla software support product that runs on a PC and is used for managing network connected Prowla units. The Product Resource Center that is provided with all Prowla units can be used to manage multiple units. It manages the units' software version and integral documentation upgrading, unit IP address assignment/management, etc. The preferred mode of operation utilizes the power of the Internet via PC control to ensure that the user has the most up to date information available for the connected units.

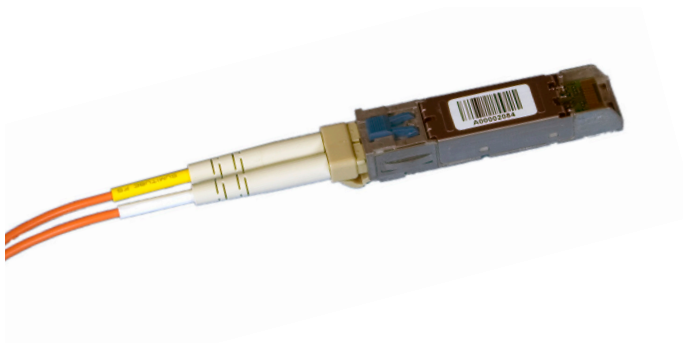
The Prowla P1 Package

Prowla P1 units are supplied with:

- An AC power adapter and power cord.
- Quick start guide
- USB cable
- Consultronics PRC software CD

Prowla P1 Accessories

- Softpack Carrying Case
- SFP modules (Interchangeable Optical Interfaces)
- RJ45 patch cables
- Optical patch cables
- Optical adapter cables
- Bluetooth adapters
- WiFi Adapters (802.11b wireless)
- USB Memory sticks
- USB cables
- Car charger



Prowla P1 - Tests and Functions

The Prowla P1 performs a number of standard tests for equipment and network measurement, assessment and performance monitoring. These tests and functions include:

- RFC2544 run as a complete automatic sequence or in part. The tests can be run with or without VLAN tagging and Prowla P1 allows user defined pass/fail criteria to be specified and tested against.
- Ping and Trace Route for connectivity testing.
- Packet Jitter
- Background load generation for simulation assessment.

A Monitor Mode for analyzing load traffic with test and control packet insertion and removal

Fibre Channel Testing

The Prowla P1 includes an integrated Fibre Channel interface allowing comprehensive testing of Fibre Channel. (For units configured with this option)

Introducing the PRC System

Dual Test Channels

Dual Ethernet channels for 10, 100 and Gigabit operation, with SFP and RJ45 interface connectors for each channel. The SFP sockets will take a variety of standard SFP/mini GBIC adapters. The **Prowla** automatically switches to the correct connection rate.

Browser Based User Interface

The built-in web server based user interface is accessible via the USB or Ethernet connection to a standard PC or PDA. Access the Prowla P1 browser over a LAN or WAN with the **Prowla P1** connected to a network via one of its' Ethernet ports or via WiFi (802.11x) or Bluetooth. The Prowla P1 uses simple HTML communications and does not depend on Java or Active X controls. Therefore, security policies and firewalls are not an encumbrance to deployment.



RFC 2544 Testing

Complete load and stress testing to RFC2544. Network monitoring, fault analysis and performance monitoring facilities with extensive reporting are also possible.

Automatic Software Upgrading

With **Prowla P1** connected to a PC, the Consultronics PRC software package provides automatic updates of the software and documentation files in the Prowla P1 to the latest revisions.

Embedded User Documentation

The user documentation is integral to the unit and is accessed via the same Browser Based user interface and updated automatically by the PRC package.

DHCP

Prowla P1 units support DHCP and will also allow static IP addresses to be defined.

Exporting of Results

Export results in MS Excel* friendly, .CSV format, at the touch of a button.

Quick Tests

User configurable 'quick-tests' allow the commonly used tests to be run at the touch of a button.

Through - Mode

User configurable 'quick-tests' allow the commonly used tests to be run at the touch of a button.

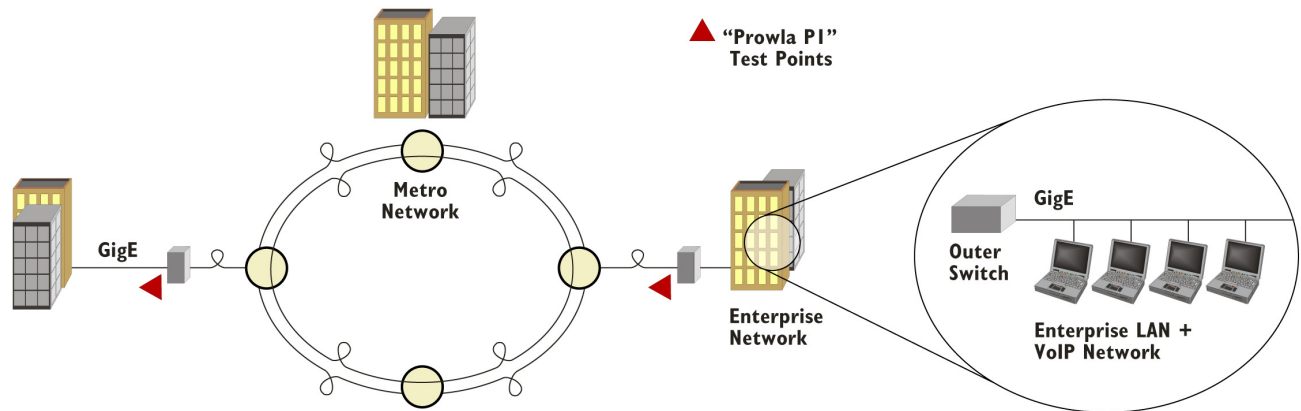
Customized Reports

Each carrier or possibly each user can customize reports with the service providers company Logo and other customer features added. This feature is password controlled.

**Excel is a Trademark of the Microsoft Corporation*



RFC2544 Benchmarking Tests



Enterprise Network Services are Easily Monitored using the Prowla P1

The RFC2544 definition describes six standard tests that are used to measure and report the performance characteristics of network equipment. The tests are: throughput, latency, frame loss rate, back-to-back frames, system recovery and reset.

Test 1 - Throughput

The purpose of this test is to determine the maximum frame rate without loss that a piece of equipment can manage. The test begins at maximum frame rate and the rate reduces until there is no loss. The test is repeated with different frame sizes. The results for this test are presented in graphical fashion and in tabular form.

Test 2 - Latency

This test is run to determine frame latency. Frames are transmitted at a predetermined rate for at least 1 minute then a tagged frame is inserted and its trip time monitored. The test is usually repeated 20 times and the average maximum and minimum times are recorded. The test is repeated with different frame sizes. As with the throughput test the results for this test will also be presented in graphical fashion and in tabular form.

Test 3 - Frame Loss Rate

The frame loss rate test runs continuous traffic, monitoring for lost frames. The test is repeated for different frame sizes. The results for this test are presented in graphical fashion and in tabular form.

Test 4 - Back to Back Frames

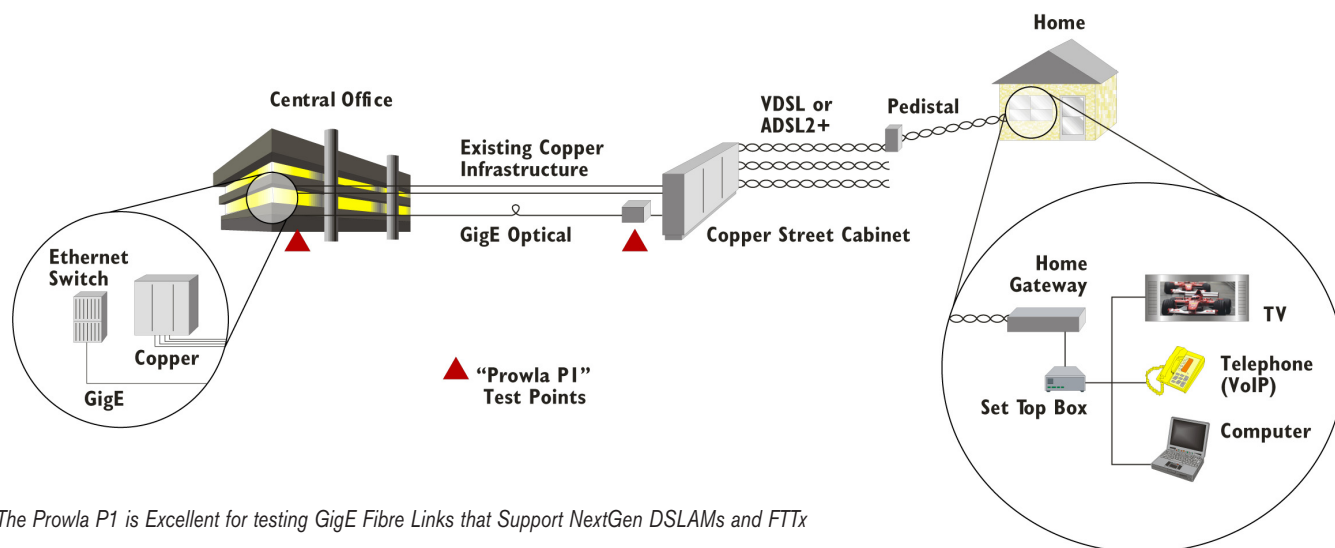
The test requires that continuous frames are sent with minimal inter-frame gaps at 100% frame rate and the losses are monitored, the test is repeated for different frame sizes. The results for this test will be presented in graphical fashion and in tabular form.

Test 5 - System Recovery

The System Recovery test is a determination of the time that a piece of equipment when overloaded with 110% frame rates takes to recover to a point where no frames are lost when the frame rate is suddenly dropped to 50%. The test is repeated for different frame sizes.

Test 6 - Reset

The Reset test measures the time that network element takes to start sending frames following a reset or a power interruption. Only one small frame size is used for conducting this test. Typically, the test is run for different types on reset condition.



The Prowla P1 is Excellent for testing GigE Fibre Links that Support NextGen DSLAMs and FTTx

Physical Features

LED's on the rear panel next to each connection interface show which port is to be used or is in use.

For remote and quick test users operating via a PDA or PC, the Prowla P1 model features an integrated 2 line by 20-character LCD display that is backlit and daylight viewable. A small group of buttons beside the display is used to navigate around the user-friendly menu system.

All Prowla P1 models are able to provide access to dual test interfaces, each with SFP or RJ45 connection arrangements on the rear panel. Both master and slave USB2 interfaces are provided for a Laptop connection and for connection to wireless communication and storage devices.

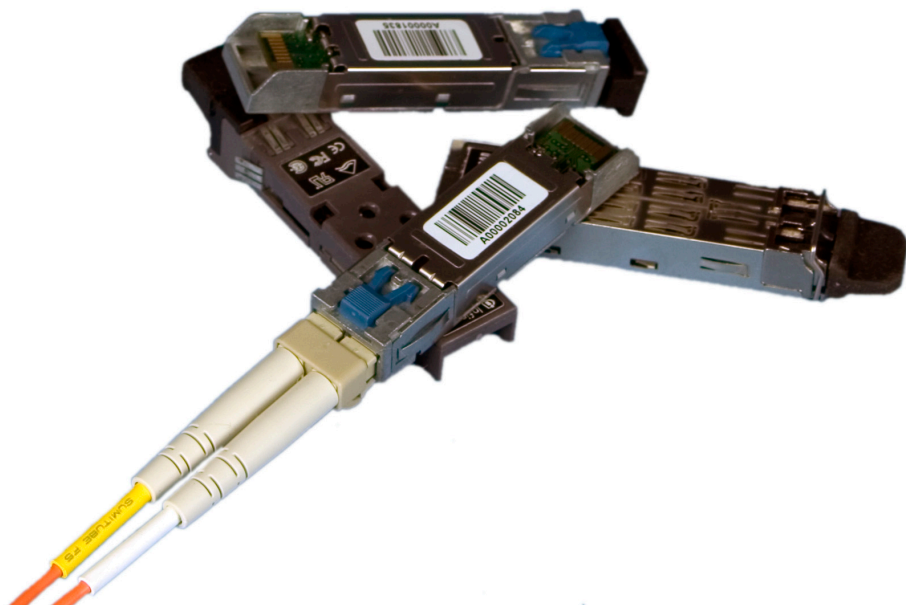
A key feature in the Prowla P1 range is the emphasis on simplicity. The Prowla auto-configures to the extent that it can. Sets of 'quick-tests' can be quickly configured with minimal user involvement. It is simply a matter of choosing the test and pressing Run.

The Prowla P1 is cased in steel with a shock absorbing rubber protection surround. For bench use, extendable front feet make the instrument sit at a comfortable to use angle. A 19" rack mounted version is also available.

The Prowla P1 runs from it's own internal rechargeable NiMH battery. It comes with mains power and car charging adapters. Intelligent battery management gives users remaining run time on battery information and provides carefully controlled charging to maintain good battery life and fast charging.



Prowla P1's can be temporarily or permanently scattered throughout the Network. Wireless PDA's enable operations people to instantly check network health.





Find out more about EXFO's extensive line of high-performance portable instruments by visiting our website at www.EXFO.com.

Rugged Handheld Solutions		Platform-Based Solutions		
OPTICAL	DSL/COPPER	OPTICAL FIBER	DWDM Test Systems	Transport/Datacom
<ul style="list-style-type: none"> • OLTs • Power meters • Light sources • Talk sets 	<ul style="list-style-type: none"> • ADSL/ADSL2+, SHDSL, VDSL test sets • VoIP and IPTV test sets • Ethernet test sets • POTS Test sets 	<ul style="list-style-type: none"> • OTDRs • OLTs • ORL meters • Variable Attenuators 	<ul style="list-style-type: none"> • OSAs • PMS analyzers • Chromatic dispersion analyser 	<ul style="list-style-type: none"> • SONET/DSn (DS0 to OC-192) testers • SDH/PDH (64 kb/s to STM-64c) testers • T1/T3 testers • E1 testers • 10/100 and Gigabit Ethernet testers • Fibre Channel testers • 10 Gigabit Ethernet testers

Corporate Headquarters > 400 Godin Avenue, Vanier (Quebec) G1M 2K2 CANADA | Tel.: 1 418 683-0211 | Fax: 1 418 683-2170 | info@EXFO.com

Toll-free: 1 800 663-3936 (USA and Canada) | www.EXFO.com

EXFO America	3701 Plano Parkway, Suite 160	Plano, TX 75075 USA	Tel.: 1 800 663-3936	Fax: 1 972 836-0164
EXFO Europe	Le Dynasteur, 10/12 rue Andras Beck	92366 Meudon la Forêt Cedex FRANCE	Tel.: +33.1.40.83.85.85	Fax: +33.1.40.83.04.42
EXFO Asia-Pacific	151 Chin Swee Road, #03-29 Manhattan House	SINGAPORE 169876	Tel.: +65 6333 8241	Fax: +65 6333 8242
EXFO China	No.88 Fuhua, First Road Central Tower, Room 801, Futian District	Shenzhen 518048, CHINA	Tel.: +86 (755) 8203 2300	Fax: +86 (755) 8203 2306
	Beijing New Century Hotel Office Tower No.6 Southern Capital Gym Road, Room 1754-1755	Beijing 100044, P.R. CHINA	Tel.: 86.10.6849.2738	Fax.: 86.10.6849.2662

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