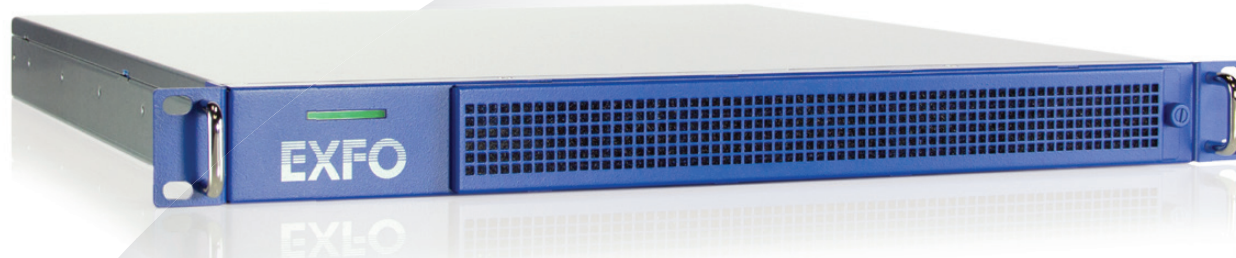


BV-1100 Verifier

MULTILAYER ASSURANCE PROBE



Multilayer service assurance probe with layer 2-7 monitoring and troubleshooting capabilities

SPEC SHEET

KEY FEATURES

Real-time performance measurement of Ethernet and IP services

End-to-end service testing

Network-to-application layer testing

True multiplay capability to simultaneously assure data, voice, video and mobile services

Extensive QoE monitoring

Operational simplicity for lights-out management

IPv4 and IPv6 support

BENEFITS

Continuously monitor performance to identify service degradation before it impacts subscribers

Effective monitoring of transport as well as of end-user QoE

Simultaneous testing over wireline and wireless networks

Optimize QoS and QoE while reducing churn and OPEX

CRITICAL COMPONENT OF END-TO-END SERVICE TESTING

The BV-1100 Verifier is a critical component of the EXFO Worx end-to-end service testing approach. It delivers the essential end-user QoE monitoring as well as the visibility and detail network administrators need to easily troubleshoot performance problems and identify their root causes.

The BV-1100 enables simultaneous end-user-to-end-user as well as end-user-to-core testing for effective SLA verification and QoE monitoring. By deploying the BV-1100 Verifier at key locations in the network (i.e., metro aggregation), network administrators can effectively segment and obtain the visibility they need of the enterprise, access, core and backhaul networks.

Tests can be performed to any other EXFO Verifier or on third-party equipment (e.g., aggregation or core routers) using industry standards, such as 802.1ag, Y.1731 or TWAMP for transport monitoring. With this vendor-agnostic approach, the BV-1100 works seamlessly in heterogeneous network environments. It also leverages operators' existing equipment to reduce CAPEX and maximize operational efficiency.

Positioned at the very edge of the network, the BV-1100 monitors quality of not only transport, but also applications and infrastructure services, such as HTTP, FTP, DNS, DHCP and e-mail. This provides carriers with the tools and data they need to quickly resolve problems and reduce mean-time-to-repair, thus ensuring customer satisfaction and reducing customer churn.

ADVANCED BUSINESS SERVICES

The BV-1100 Verifier offers an extensive range of capabilities designed to monitor business services—whether for point-to-point services, managed triple-play services or direct Internet access. Regardless of the type or class of service, the BV-1100 can precisely measure all relevant KPIs to ensure SLA compliance. It also measures the critical metrics that determine the quality of a subscriber's experience with respect to numerous applications and infrastructure services.

As a multipurpose device, the BV-1100 allows service providers to perform direct end-to-end monitoring of SLAs and services as well as serve as a reflector and responder for centrally initiated monitoring and troubleshooting tests. This capability can provide full segmentation of the circuit path for quick troubleshooting as well as network performance tracking.

BEST-OF-BREED SERVICE MONITORING FOR MOBILE OPERATORS

The BV-1100 Verifier is the ultimate tool for wireless operators to monitor QoS and QoE. It supports the monitoring of critical backhaul transport KPIs from the mobile switching center using a variety of industry-standard protocols, such as Y.1731, 802.1ag and TWAMP. It is also able to initiate monitoring tests at all layers (2 to 7), which allows operators to effectively monitor the quality of voice, video, data and infrastructure services that they offer to subscribers.

The multilayer BV-1100 enables operators to simultaneously monitor backhaul performance and core servers accessibility and response time to easily correlate QoE impacting events. This unique capability enables operators to do more with a single probe.

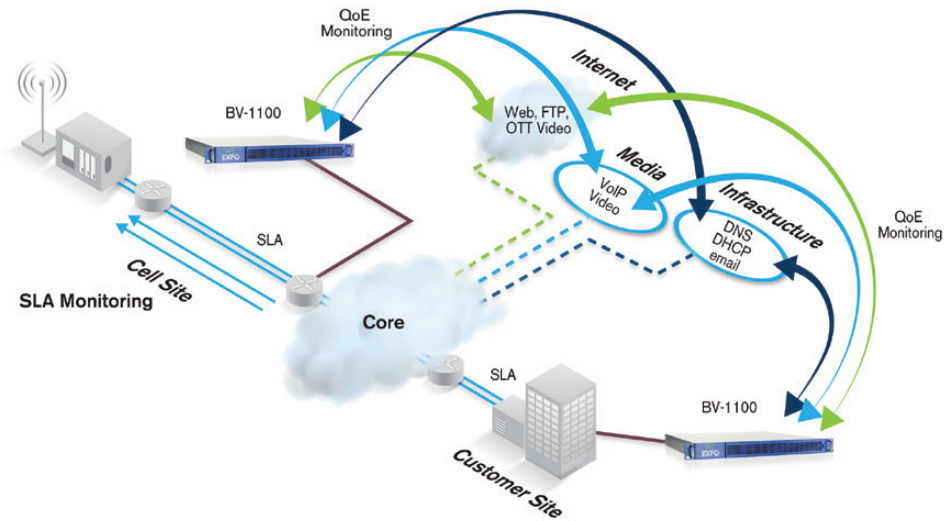


Figure 1. QoE and SLA Monitoring for Business and Mobile Services

OPERATIONAL SIMPLICITY

The BV-1100 Verifier combines the ease of complete lights-out operation with the reliability and management features required in carrier environments. To install, simply connect the Ethernet cables and the power source—the verifier does the rest. At power-up, the BV-1100 Verifier performs system integrity checks, automatically discovers its EXFO Worx server and then downloads all system configurations, test modules and test schedules using a secure, encrypted connection with the server.

All EXFO Verifiers, including the BV-1100, are centrally managed and provisioned using EXFO Worx, and all communications between the verifier and EXFO Worx are encrypted and secure. Since the BV-1100 Verifier is designed to be deployed in remote locations, traffic management between the verifier and EXFO Worx can be handled in-band on the same interface as the test traffic. Alternatively, the second test interface can be dedicated to management, if test and management traffic separation is desired.

KEY DATA COLLECTED AND CORRELATED

Transport SLA verification
Application layer QoE (web, voice, video)
Infrastructure monitoring (DNS, DHCP, e-mail)
Mobile user QoE monitoring and benchmarking

TRANSPORT-TO-APPLICATION LAYER PERFORMANCE MANAGEMENT

The BV-1100 Verifier supports a comprehensive suite of more than 70 active tests. These tests support a wide range of network transport protocols and IP services, including Carrier Ethernet, IP, VoIP, video, VPN, wireless and web-based applications, as well as a number of infrastructure performance tests. The BV-1100 calculates a deep set of performance statistics by measuring the transport quality and performance of transport- and application-specific protocols. These proactive tests accurately simulate network and user-level activity. Furthermore, the BV-1100 Verifier has the unique capability of performing layer-4-to-7 performance monitoring tests on up to two 3G or 4G wireless interfaces simultaneously to enable carriers to monitor true end-user quality of experience on their networks, as well as on those of their competitors.

CARRIER-CLASS DESIGN FOR IN-NETWORK DEPLOYMENT

The BV-1100 Verifier is carrier-class equipment; it is a NEBS platform which offers features such as AC and redundant DC power options. In addition to industry-leading performance, the BV-1100 offers an extremely accurate timing feature to support the sub-millisecond precision required for today's performance-sensitive services. All time measurements take advantage of the BV-1100's patented hardware packet timestamp engine, eliminating the variations caused by user or kernel-level software-based timing schemes.

SIMPLE, INTUITIVE REPORTING

The BV-1100 supports a wide array of monitoring and troubleshooting tests that provide operators with valuable network status data. EXFO Worx provides a number of customizable reports and dashboards that turn this data into accessible and actionable information. These web-based reporting tools make it easy for operators to quickly and intuitively understand the test results and therefore, eliminate the need for expensive training. Moreover, since the reports are all web-based, they can be easily presented to subscribers as proof that SLAs are being met.

SPECIFICATIONS

INDICATORS AND INTERFACES

Two test ports:

- › 1G fiber SFP
- › 10/100/1000 Mbit/s copper SFPS
- › Auto-sensing, auto-negotiating
- › Hardware packet timestamp engine
- › Link and activity LEDs

Two management ports:

- › 10/100/1000 Mbit/s fixed RJ-45 copper
- › Auto-sensing, auto-negotiating
- › Link and activity LEDs

1PPS external clock input

Console port (EIA-232)

AC or dual feed DC power

System status LED (green/amber)

POWER

AC power	100-240 VAC 240W at 2A (120VAC)
DC power	-48 V dual feed 240W at 5A (-48VDC)

ENVIRONMENTAL

Temperature	operating	-5 °C to 55 °C (23 °F to 131 °F)
	storage	-40 °C to 70 °C (-40 °F to 158 °F)
Relative humidity		90 % non-condensing
Operating altitude		4000 m (13 000 ft)

SUPPORTED MONITORING TESTS

Carrier Ethernet	802.1ag, Y.1731
IP transport	TCP, TWAMP, UDP
VoIP	H.323, MGCP, NCS, RTP, SCCP, SIP
Video	H.323, RTP, RTSP
VPN	Full-mesh availability/performance
Network infrastructure	DHCP, DNS, SNMP
Applications	HTTP, e-mail, FTP, NTP, SFTP, TFTP
QoS and VLAN support	
One-way performance, path analysis	
And more (non-exhaustive list)	

PHYSICAL

Dimensions (H x W x D)	43 mm x 425 mm x 485 mm (1 ¾ in x 17 in x 19 in)
Weight	8.43 kg (18.56 lb)
19-inch rackmount (front or slide rail mounted)	

REGULATORY

EMC standards	IEC/EN-61326-1; FCC CFR Title 47, Part 15, Subpart B; ICES-003
Safety	IEC/EN CSA/UL 61010-1 Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use—Part 1: General Requirement
Certification marks	CE; cCSAus; NEBS

SYSTEMS AND SERVICE ASSURANCE

EXFO's Systems and Service Assurance Division offers converged solutions that allow the world's largest service providers and enterprises to deliver reliable and high-quality experiences in voice, video, data and mobile services. The division brings a proven heritage of IP expertise unique to the service assurance marketplace, and collaborates closely with its customers and partners to assure the delivery of any IP-based service, over any network, to any endpoint.

EXFO's seamlessly integrated hardware and software products proactively monitor Ethernet, IP services and applications. Network operators use these products to guarantee the successful launch and ongoing, profitable operation of their various IP services.

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EXFO serves over 2000 customers in more than 100 countries. To find your local office contact details, please go to www.EXFO.com/contact.

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