

iBypass 100G

Single-bypass switch for 40G and 100G network links

Problem: Inline Tools are a Single Point of Failure in the Network

Today's organizations are facing a triad of network concerns: the increasing volume of multiprotocol traffic at higher data rates, mounting security threats, and a strict regulatory environment. Deploying inline tools to inspect and control network traffic can help block incoming threats, but inline tools also complicate network operations — the more tools you deploy, the more potential points of failure. And in the event an inline tool becomes unavailable, it can completely bring down the network link, significantly compromising network uptime and disrupting business continuity.

Solution: Increase Network Uptime with a High-Density Bypass Platform

Get fail-safe inline protection for all network monitoring tools with Keysight's iBypass 100G that supports both 40GB and 100GB links. You'll improve overall network reliability, increase application availability, and add the convenience and cost savings of remote monitoring and control — all important requirements for any enterprise deployment.



Highlights

- **Dual mode 40G/100G on network links** – supports both 40G and 100G fibers.
- **QSFP28 Tool Ports** – for maximum flexibility
- **High availability configurations possible** – through Active-Standby or Active-Active support across two modules.
- **Bi-directional Heartbeats**
- **Minimize traffic interruption** with Link Fault Detect (LFD)
- **Reduce setup times** with configurable Heartbeats in the Web UI
- **Increase reliability** by adding fail-safe inline protection to critical network links
- **Remote management** through SSH, Web Interface (HTTPS) and SNMP Browsers
- **Field upgradable software** and firmware
- **View size and time** of the peak traffic
- **View status** for power, link, activity, and activity status
- **Real time traffic graphs (20 min interval)**
- **Error Switching** – Bypass can switch if CRC errors detected in traffic flows.
- **Save on maintenance costs** with field replaceable power supplies

iBypass 100G Provides Built-in Tap and Bypass Functions and The Following Capabilities

- iBypass 100G supports both network links at 40G or 100G with the same hardware as the SR module. The network port speed is configured via the software
- **Smart management** – iBypass 100G is a fully managed device and allows the user to view and change settings through a CLI, user- friendly Web UI, and SNMP browsers.
- **Security** – CLI/SSH, HTTPS and SNMP V3 and V2/V1.
- **Customizable and pre-programmed heartbeats** – Each bypass switch enables users to create and customize heartbeats in the Web Interface.
- **Modular construction** – iBypass 100G consists of a Chassis and two bays. Each bay can be filled with a bypass module. Bypass modules protect a single security tool. Modules are available for either Single Mode (LR4) or Multi Mode (SR4) fiber and have QSFP28 receptacles.
- **Active-standby support** – iBypass 100G is configured with two bypass modules that can be configured to operate in Active-Standby or Active-Active modes. Failure of the Active tool causes the traffic to be switched to the secondary Standby tool or would result in continuing to send traffic to the other Active tool. This gives the ability to construct High Availability security architectures.

Automatic protection and recovery

The iBypass 100G switch continuously checks the responsiveness of the inline tool by sending it “heartbeat” packets, expecting to receive those packets back. If the iBypass 100G detects that the tool is not responding, it will bypass the inline tool, allowing network traffic to flow without interruption. Should that happen, the iBypass 100G will also issue an alert to indicate that the tool became unavailable, allowing network or security personnel to take appropriate actions.

The iBypass 100G will continue to send heartbeat packets to the inline tool even after the tool stops responding. As soon as the tool becomes operational again, the iBypass 100G will re-route traffic back through the tool to ensure that the tool is continuing to monitor and/or protect the network.

Smart management

The iBypass 100G is a fully managed device and allows the user to view and change settings through a Command Line Interface, a user- friendly Web UI, and SNMP browsers. Remote management security is provided through Role Based User Access, 1024-bit SSL encryption, HTTPS, SNMP, SSH, and an IP Access List to prevent unwanted access to management interfaces. In the event there are system, link, power, or threshold changes the iBypass 100G issues SNMP traps, that are directed to the desired management devices, set in any of the interfaces.

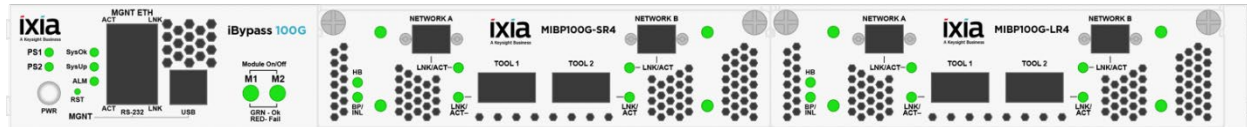
The screenshot displays the web interface of the iBypass 100G device. At the top, there is a navigation bar with the IXIA logo and the text 'A Keysight Business iBypass 100G'. To the right of the logo are several menu items: STATUS, STATISTICS, CONFIGURATION, SYSTEM, USER, SNMP, SAVE, and HELP. Below the navigation bar, the main content area is titled 'Module 1 Configuration'. Under this title, there is a sub-section 'Segment 1' with three tabs: 'Heartbeat Setting' (which is selected), 'Advanced Features', and 'RX/TX Error Processing'. The 'Heartbeat Setting' tab contains several configuration options: 'Heartbeat Active Mode' is checked; 'Heartbeat Interval' is set to 3 with a range of 3-10000 ms; 'Heartbeat Expire Timer' is set to 10 with a range of 10-50000 ms; 'Heartbeat Recover Timer' is set to 0 with a range of 0-50000 ms; 'Active OP Mode' is set to Bypass; 'Heartbeat Fail State' is set to Fail Open; 'Heartbeat TX Direction' is set to Both; and 'Heartbeat Packet' is shown as a hexadecimal string. Below these settings is an 'Upload Packet File' button.

The iBypass 100G comes with different LED indicators for power, link, bypass status, and activity status. The LCD provides peak and real time network utilization information for both of the network ports enhancing local, on-site, device monitoring options.

Flexible deployments

Having an iBypass 100G deployed in front of inline tools provides greater deployment flexibility for 40G or 100G network links.

When the inline tool needs to be taken out for maintenance the iBypass100G can be configured to bypass the inline tool and let network traffic flow uninterrupted. Once maintenance is complete, the iBypass100G can route traffic back through the upgraded tool.



Specifications

Specification	Description										
Operating	Operating: - Operating temperature: 0 °C to 40 °C (32 °F to 104°F) - Relative humidity: 0% min, 90% max, non-condensing										
Non-operating:	- Non-operating storage temperature: -20 °C to 65 °C (-4 °F to 149 °F) - Relative humidity: 0% min, 90% max, non-condensing										
Mechanical	Chassis dimensions: 1.732" high x 23.07" deep x 17.12" wide 44 mm high x 586 mm deep x 435 mm wide Weight: 22.1 lbs (10 kg) plus 2.64 lbs (1.2 kg) per module										
Connectors	Monitoring ports: 2 per module (1 tool segment) QSFP28 Network ports: 2 per module (1 network segment) – either SR4 MTP or LR4 LC – support for 40G or 100G										
Power supply	- AC power Input: 90-240 VAC - DC power Input: -48 V nominal (-75 to -36) V - Two redundant power supplies - Power dissipation: - Chassis only – 240 W - Chassis plus one module – 405 W - Chassis plus two modules – 552 W										
Certifications	- Safety: UL - Emissions and Immunity: FCC, EN, ICES-003 Class B - Environmental: RoHS										
Reliability	<table border="1"> <thead> <tr> <th>100G Bypass switch</th><th>MTBF (hrs)</th></tr> </thead> <tbody> <tr> <td>Chassis AC/DC</td><td>88157</td></tr> <tr> <td>40/100-SR4 module</td><td>1820807</td></tr> <tr> <td>100G-LR4 module</td><td>1868204</td></tr> <tr> <td>40G-LR4 module</td><td>1847620</td></tr> </tbody> </table>	100G Bypass switch	MTBF (hrs)	Chassis AC/DC	88157	40/100-SR4 module	1820807	100G-LR4 module	1868204	40G-LR4 module	1847620
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Management	- Web GUI – TLS1.2 only - CLI/SSH - SNMP – V1, V2 or V3 - AAA TACACS or RADIUS+ - NTP and time zone definition - Remote Syslog										

Ordering Information

Part number	Description
IBP100G-CH-AC-T	Keysight's iBypass 100G Switch 1U Chassis with AC Power (956-0198)
IBP100G-CH-DC-T	Keysight's iBypass 100G Switch 1U Chassis with 48V DC Power (956-0193)
MIBP-40100-SR4-T	Keysight's Intelligent QSFP28 (SR4) Module for iBypass 100G (992-1008)
MIBP100G-LR4-T	Keysight's Intelligent QSFP28 (LR4) Module for iBypass 100G (992-1013)
MIBP40G-LR4-T	Keysight's Intelligent QSFP+ (LR4) Module for iBypass 100G (992-1011)
LIC-MIBP-40	Node-locked perpetual license for one module 40G speed (993-9615)
LIC-MIBP-100	Node-locked perpetual license for one module 100G speed (993-9616)
LIC-MIBP-100-U	Node- locked perpetual license upgrade - from 40G to 100G (993-9617)
BD-IBP100G-SR-2-T	Keysight TAA compliant iBypass 100G bundle with 2 (SR4) modules activated for 40G or 100G support - AC power (991-0272)

Accessories

Part number	Description
IBP100G-FAN-ASSY	Keysight's Spare fan assembly for iBypass 100G (956-2002)
IBP100G-ACPS	Keysight's Spare AC power module for use with iBypass 100G (956-2000)
IBP100G-DCPS	Keysight's Spare DC power module for use with iBypass 100G (956-2001)

Compatible Transceivers

Part number	Description
QSFP-PLUS-SR4-XCVR-T	Keysight's QSFP+ 40GBASE-SR4 40GE, MMF 850 nm
QSFP-PLUS-LR4-XCVR-T	Keysight's QSFP+ 40GBASE-LR4 40GE, SMF 1310 nm
QSFP28-SR4-XCVR-T	Keysight's QSFP28 100GBASE-SR4 optical transceiver, MMF 850 nm
QSFP28-LR4-XCVR-T	Keysight's QSFP28 100GBASE-LR4 optical transceiver, SMF 1310 nm

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