



IBSGP-T

Gigabit Copper Intelligent Bypass Switch

Product Description

Silicom Intelligent Bypass switch (IBS) is an active external Bypass switch that protects network integrity from network failures and network maintenance. The Silicom intelligent Bypass switch (IBS) generates the heartbeat and controls the mode of operation.



The Silicom Intelligent Bypass switch (IBS) supports four modes of operations: Inline, Bypass, Tap and Disconnect. In Inline mode, the IBS diverts inline network traffic to attached in-line network system. In Bypass mode, the IBS does not divert the traffic to the attached in-line network system and diverts it to other network link. In Tap mode, incoming traffic in port NET0 is copied port MON0 and incoming traffic in port NET1 is copied to port MON1. In Disconnect mode the IBS disables the links on the network ports (NET0, NET1). The IBS simulates switch / router cable disconnection.

The IBS generates the heartbeat packets and transmits the heartbeat packet to the in-line Monitor / Network appliance port, the Monitor Network appliance receives the heartbeat packets and transmits it to its other port (bridges the heartbeat packet). The IBS detects back the heartbeat packet and maintains the Inline mode.

The IBS sets to Bypass, Tap or Disconnect when it does not receive back the heartbeat packet from the Network / Monitor appliance. When the Network / Monitor appliance recovers, it transmits back the heartbeat packet and the Intelligent switch sets to Inline. The IBS bypasses its Ethernet Monitor ports on event of power failure, Link failure, in-line software application system hang or user request.

The IBS includes Double Bypass Safe architecture. The Silicom Double Bypass safe architecture is based on two Bypass routing circuitry: An Active Bypass circuitry and Passive Bypass circuitry. If the internal active bypass routing circuitry fails, the passive Bypass routing circuitry is activated.

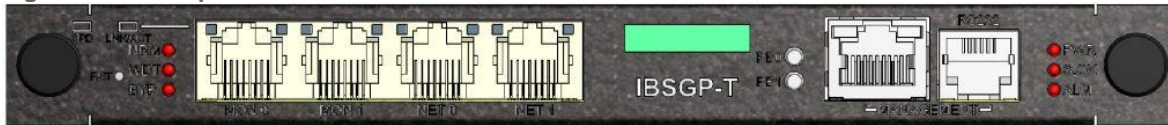
The IBS can be configured using:

- Simple CLI configuration management via a serial communication console port, Ethernet port using Telnet or SSH.
- Web interface management interface
- SNMP

The IBS includes two RJ45 ports for network ports, two RJ45 ports for the attached in-line network system, serial port (RJ-11) and Ethernet port (RJ-45). The IBS supports Gigabit Copper (1000BASE-T) network standard.

The IBS1U is a 1U host system supports up to four intelligent bypass switches (IBS). The Bypass Switch Host can support up to four intelligent Bypass Switch modules. The Bypass switch host includes two redundant 1 – 220 V AC power supply or two redundant -48 DC power supply.

Figure: 1 – Front panel view of IBS



Key Features

- Self-generating heartbeat pulses – No driver or management port is required to generate pulses
- Sets to Bypass/Disconnect when it detects in-line system failure
- Sets to Bypass/Disconnect when it detects in-line system link failure
- Sets to Bypass/Disconnect when it detects in-line software application system hang
- Sets to Bypass on Power failure
- Sets to Normal when it detects in-line system recovery
- Double Safe Bypass architecture with two routing circuitries
- Two Onboard Watch Dog Timer (WDT) Controller
- Software programmable time out interval
- Software Programmable WDT Enable / Disable
- Independent Bypass / Normal / Tap /Disconnect operation in every module
- Supports up to four modules in a chassis
- Supports TAP mode of operation
- Simple CLI configuration management via serial port
- Telnet management interface via network management port
- SSH management interface via network management port
- Supports SNMP version 1, 2c, 3 (SHA, AES)
- Supports remote log
- Supports TACACS+
- Supports NTP
- Supports time zone
- Supports multi configuration backup
- Two redundant power supplies
- Optional -48V DC power supplies

Technical Specifications

Bypass Specifications	
WDT Interval (Software Programmable):	<p>Routing Transmit heart beat packet every 3mS – 10Sec. Default 5mS Verification packets received every 10mS – 50Sec. Default 20mSec</p> <p>Double Bypass Transmit heart beat packet every 300mS – 60Sec. Default 7Sec Verification packets received every 1S – 253Sec. Default 20Sec</p>
Production Default Configuration	
Mode at Power up:	Bypass/Disconnect
Heartbeat:	Activated
Bypass Switch is ready and in-line device responds to heartbeat:	Change to Normal
In-line device responds to heartbeat:	Normal
In-line device does not respond heartbeat:	Bypass
Mode at Power Off:	Bypass/Disconnect
Heartbeat Packet:	Internetwork Packet Exchange
IBS1U: Bypass Switch 1U Host System Technical Specifications	
Dockings:	Front holders
Voltage Input:	AC: 90-240 VAC Auto-Select -48 (-75 – -36) VDC
Size:	444mm x 339.3mm x 44 mm (17.48" x 13.358" x 1.732") Wide x Depth X Height
Operating Humidity:	0%–90%, non-condensing
Operating Temperature:	0°C – 40°C (32°F – 122°F)

Storage Temperature:	-20°C–65°C (-4°F–149°F)
IBS1U: Bypass Switch 1U Host System LEDs / Connector Specifications	
LEDs:	(2) Power LED – Green, Power is on, LED per power supply
Copper Gigabit Ethernet Technical Specifications – (1000BASE-T):	
IEEE Standard / Network topology:	IEEE802.3ab/1000BASE-T IEEE802.3u/100BASE-T IEEE802.3/10BASE-T
Data Transfer Rate:	1000Mbit/s 100Mbit/s 10Mbit/S
Voltage:	12V +/-5%
Size:	173.3mm x 164.9mm x 20 mm (6.822" x 6.73" x 0.787") Wide x Depth X Height
Operating Humidity:	0%–90%, non-condensing
Operating Temperature:	0°C – 40°C (32°F – 122°F)
Storage Temperature:	-20°C–65°C (-4°F–149°F)
LEDs	
LEDs:	Network / Monitor ports: Link LED – (Green) On Link partner is detected. Activity LED – (Yellow) Blinks on activity. Power – Green power is on Normal – Green, Switch in Normal mode. SysOK – Yellow when Sys is OK, WDT – Blink Yellow when WDT is activated Light Yellow WDT time out Off: WDT is disabled Bypass – Red when bypass, off on Normal Alarm – Red on system alarm
Connectors:	Network + Monitor: 1 Connector with 4 Port RJ45 Management: RJ-11 serial port RJ-45 Ethernet

Functional Description

Figure: 3 – Normal Mode Functional Block Diagram

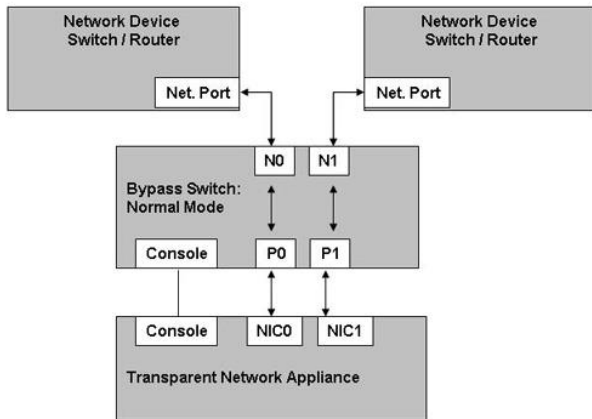


Figure: 4 – Bypass Mode Functional Block Diagram

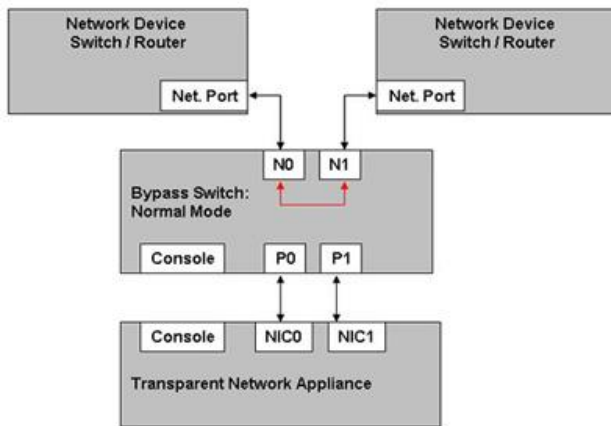


Figure : 5- Tap Mode Functional Block Diagram

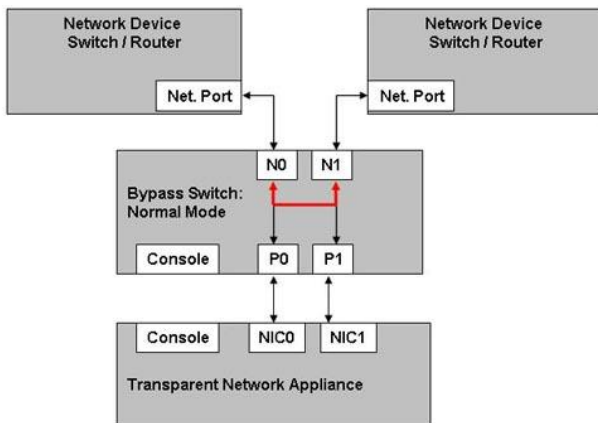
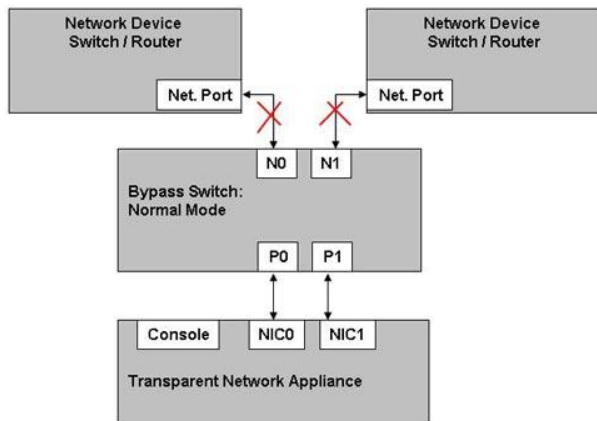


Figure : 6- Linkdrop Mode Functional Block Diagrama



Order Information

IBS	System Format	Media	Media Type	Power Cord
IBS: Intelligent Bypass Switch	1U: 1U	G: 1Gbit/s	T: Copper	-US -EU

P/N	Description	Notes
IBSGP-T	Gigabit Copper Intelligent Bypass Switch	Copper 10/100/1000
IBS1UP-EU	Intelligent Bypass Switch 1U host system	1U host system,(90-240 VAC Auto-Select), EU cable
IBSG1UP-1T-EU	1U w/ Gigabit Copper Intelligent Bypass Switch	1U with one Copper module , EU cable
IBSSGP-T-EU	Standalone Gigabit Copper Intelligent Bypass Switch	Standalone, Copper module, EU cable

Note: Model P/N

-US: Includes 110v power cable

-EU: Includes 220v power cable

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