Industrial 2-channel

Optical Fiber Bypass Switch

IFB-244 Series

User's Manual

Table of Contents

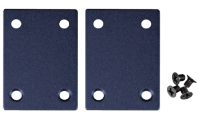
1. Package Contents

Thank you for purchasing PLANET Industrial 2-channel Optical Fiber Bypass Switch, IFB-244 Series. In the following section, the term **"Optical Bypass Switch"** means the IFB-244 Series.

The descriptions of these models are as follows:

Models	Optic Connectors	Optic Mode	Optic Wavelength
IFB-244-SLC	4 x Duplex LC	Single Mode	1310nm & 1550nm
IFB-244-SSC	4 x Duplex SC		
IFB-244-MLC	4 x Duplex LC	Multimode	850nm & 1300nm
IFB-244-MSC	4 x Duplex SC		

Open the box of the Optical Bypass Switch and carefully unpack it. The box should contain the following items:

Optical Bypass Switch x 1	User's Manual x 1
	
DIN-rail Kit	**Wall-mount Kit**
	

If any of these are missing or damaged, please contact your dealer immediately; if possible, retain the carton including the original packing material, and use them again to repack the product in case there is a need to return it to us for repair.

2. Product Features

Physical Port

- 2-channel duplex or 4-channel simplex fiber connection with optical bypass function
- Supports 100Gbps/40Gbps/10Gbps/1Gbps and 100Mbps fiber connections
- Available in Single mode or Multimode
- Available in LC/SC connectors

Optical Bypass

- Bypass switch time <8ms
- Low return loss
- Throughput not affected and no extra delay
- Increased reliability on critical network links

Industrial Case and Installation

- IP30-rated metal housing
- 9V~48V DC or 24V AC redundant power inputs with reverse polarity protection
- Low power consumption
- Connective removable terminal block
- Supports 6000 VDC Ethernet ESD protection
- -40 to 75 degrees C operating temperature
- DIN-rail and wall-mount designs
- Free fall, shock-proof and vibration-proof for industries

3. Product Specifications

Model	IFB-244-SLC	IFB-244-SSC	IFB-244-MLC	IFB-244-MSC
Hardware Specifications				
Optic Interfaces	4 x Duplex LC	4 x Duplex SC	4 x Duplex LC	4 x Duplex SC
Optic Mode	Single Mode		Multimode	
Optic Wavelength	1310nm & 1550nm		850nm & 1300nm	
Operating Wavelength	1260~1620nm		850nm±40 / 1300nm±40	
Bypass Return Loss	>50dB		>35dB	
Bypass Insertion Loss	Typical: 1.0dB Max: 1.5dB			
Bypass Switching Time	<8ms			
Speed	100Gbps/40Gbps/10Gbps/1Gbps/100Mbps			
ESD Protection	Air: 8kV, Contact: 6kV			
Enclosure	IP30 metal case			
Installation	DIN-rail kit and wall-mount kit			
Connector	Removable 6-pin terminal block for power input Pin 1/2 for Power 1, Pin 5/6 for Power 2 Pin 3/4 for fault alarm,			
Alarm	One relay output for power failure. Alarm relay current carry ability:1A@24V DC			
LED Indicator	Power 1 (Green), Power 2 (Green), Fault (Red) Normal operation (Green)			
Dimensions (W x D x H)	32 x 87 x 135 mm	50 x 87 x 135 mm	32 x 87 x 135 mm	50 x 87 x 135 mm
Weight	405g			

Power Requirements	Dual 9-48V DC with polarity reverse protection function 24V AC	
Power Consumption	0.54 watts/1.84BTU	
Cabling	9/125μm	50/125μm
Standards Conformance		
Regulatory Compliance	FCC Part 15 Class A CE	
Stability Testing	IEC60068-2-32 (free fall) IEC60068-2-27(shock) IEC60068-2-6 (vibration)	
Environment		
Operating Temperature	-40~75 degrees C	
Storage Temperature	-40~85 degrees C	
Humidity	5~95% (non-condensing)	

4 Hardware Introduction

4.1 Three-View Diagram

The three-view diagram of the **Optical Bypass Switch** consists of optical fiber connector and one **removable 6-pin terminal block**. The LED indicators are also located on the front panel.

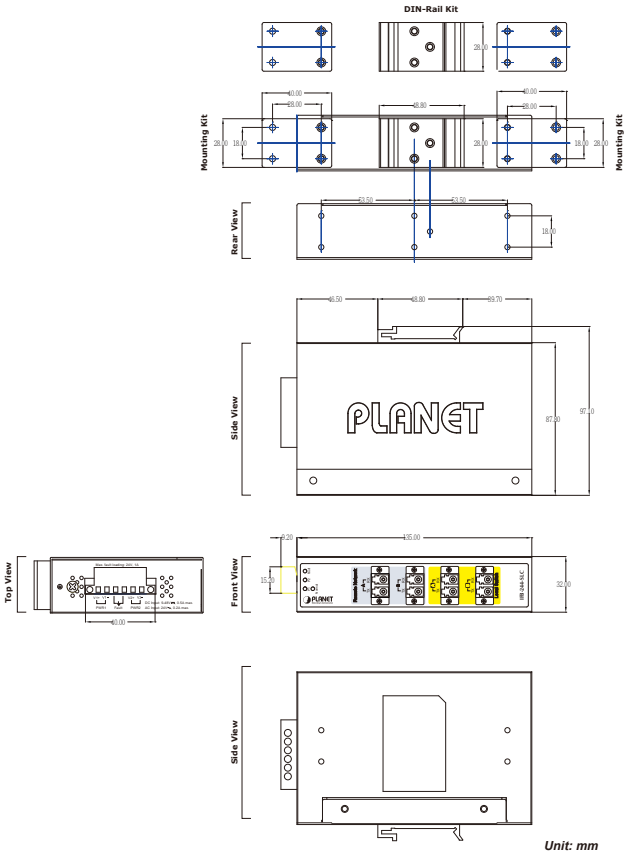


Figure 4-1: IFB-244-SLC and IFB-244-MLC Three-View Diagram

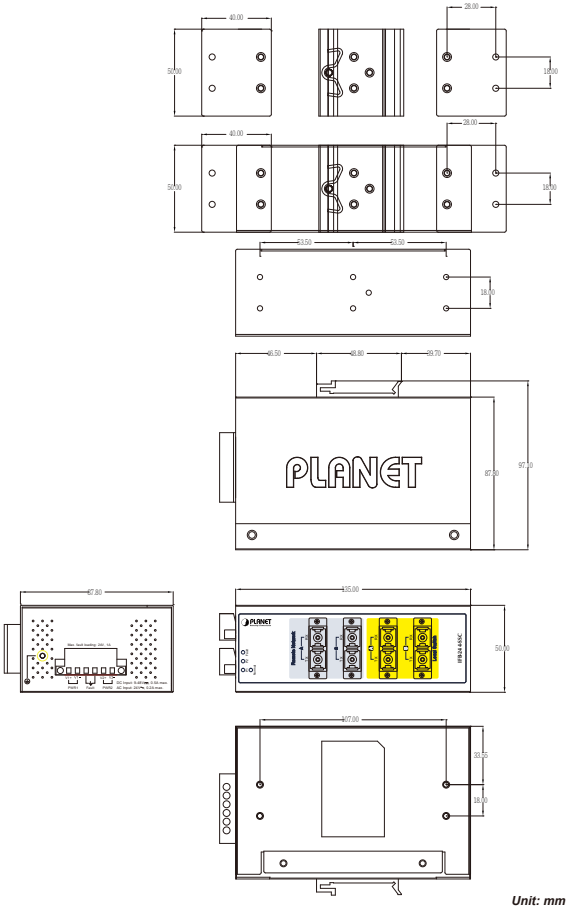


Figure 4-2: IFB-244-SSC and IFB-244-MSC Three-View Diagram

■ Front View

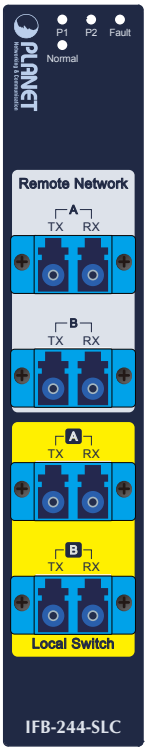


Figure 4-3: IFB-244-SLC and IFB-244-MLC Front View

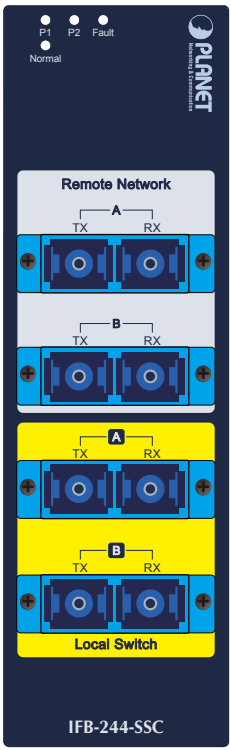


Figure 4-4: IFB-244-SSC and IFB-244-MSC Front View

4.2 LED Definition

■ **System**

LED	Color	Function	
P1	Green	Lit:	Power 1 is active.
		Off:	Power 1 is inactive.
P2	Green	Lit:	Power 2 is active.
		Off:	Power 2 is inactive.
FAULT	Red	Lit:	Hardware indicates either Power 1 or Power 2 has no power.
		Off:	No failure.

■ **STATE**

LED	Color	Function	
Normal	Green	Lights:	To indicate the Bypass Switch is operating in Normal mode with power input.
		Off:	To indicate the Bypass Switch is operating in Bypass mode with power failure.

4.3 Wiring the Power Inputs

The upper panel of the Optical Bypass Switch indicates an inlet power socket and consists of one terminal block connector within 6 contacts. Please follow the steps below to insert the power wire.

1. Insert positive/negative DC power wires into **Contacts 1 and 2** for **Power 1**, or **Contacts 5 and 6** for **Power 2.** Figure 4-5 and 4-6 show PWR1 and PWR2 of the Optical Bypass Switch.

■ **IFB-244-SLC/IFB-244-MLC:** 9~48V DC or 24V AC

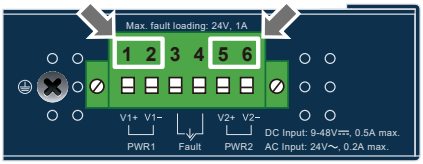


Figure 4-5: IFB-244-SLC/IFB-244-MLC upper panel

■ **IFB-244-SSC/IFB-244-MSC:** 9~48V DC or 24V AC

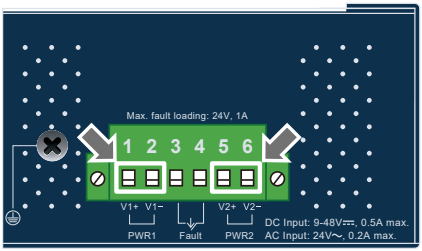
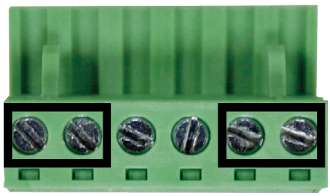


Figure 4-6: IFB-244-SSC/IFB-244-MSC upper panel

2. Tighten the wire-clamp screws for preventing the wires from loosening.



1 2 3 4 5 6
V1+ V1- V2+ V2-
Power 1 Fault Power 2

Figure 4-7: PWR1 & PWR2 pins of terminal block.

Note

The wire gauge for the terminal block should be in the range from 12 to 24 AWG.

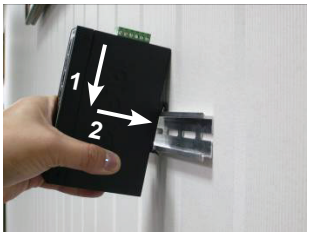
When performing any of the procedures like inserting the wires or tightening the wire-clamp screws, make sure the power is OFF to prevent from getting an electric shock.

5. Hardware Installation

This section describes the functionalities of the Optical Bypass Switch's components and guides you to installing it on the DIN rail and wall. Please read this chapter completely before continuing.

Note	This following pictures guide you to how to install the device, and the device is not IFB-244 Series.

5.1 DIN-rail Mounting Installation



5.2 Wall-mount Plate Mounting

5.3 Side Wall-mount Plate Mounting

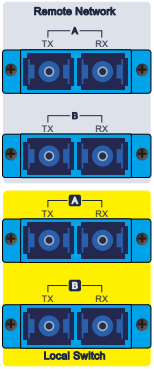
5.4 Grounding the Device

Uses MUST complete grounding wired with the device; otherwise, a sudden lightning could cause fatal damage to the device. EMD (Lightning) DAMAGE IS NOT CONVERED UNDER WARRANTY.

6. Optical Fiber and Power Connections

6.1 Optical Fiber Connection

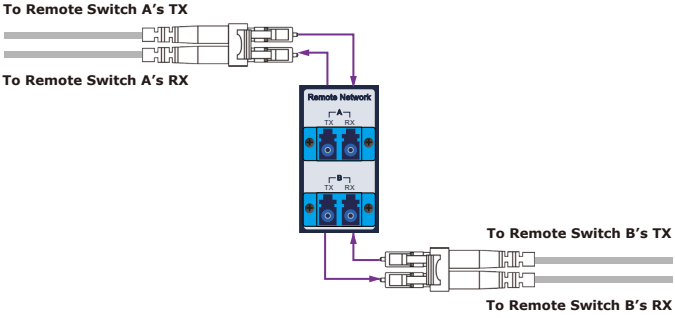
The IFB-244 series is equipped with a total of 4 duplex fiber connectors and they are separated into two groups – **Remote Network** channels and **Local Switch** channels.



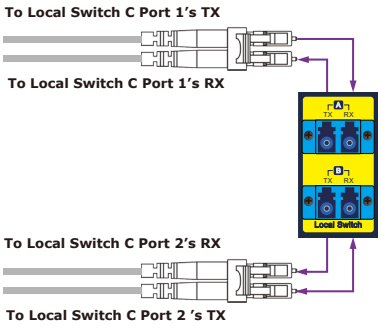
- **Remote Network** group has 2 fiber channels that are used to connect to the other **two remote fiber Ethernet switches**.

- **Local Switch** group has 2 fiber channels that are used to connect to **the local fiber Ethernet switch**.

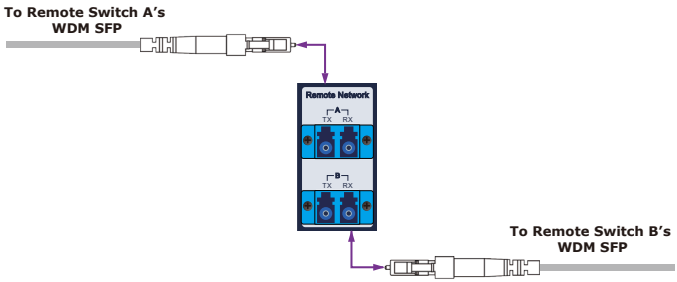
- Connecting to the Remote Network with Duplex Fiber cables



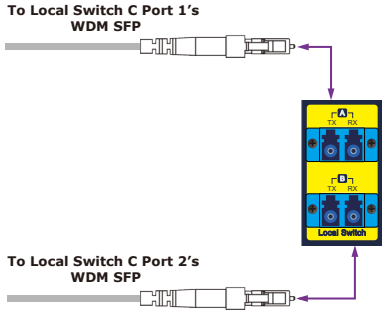
■ Connecting to the Local Switch



■ Connecting to the Remote Network with Simplex Fiber Cables (WDM/ Bi-di)



■ Connecting to the Local Switch



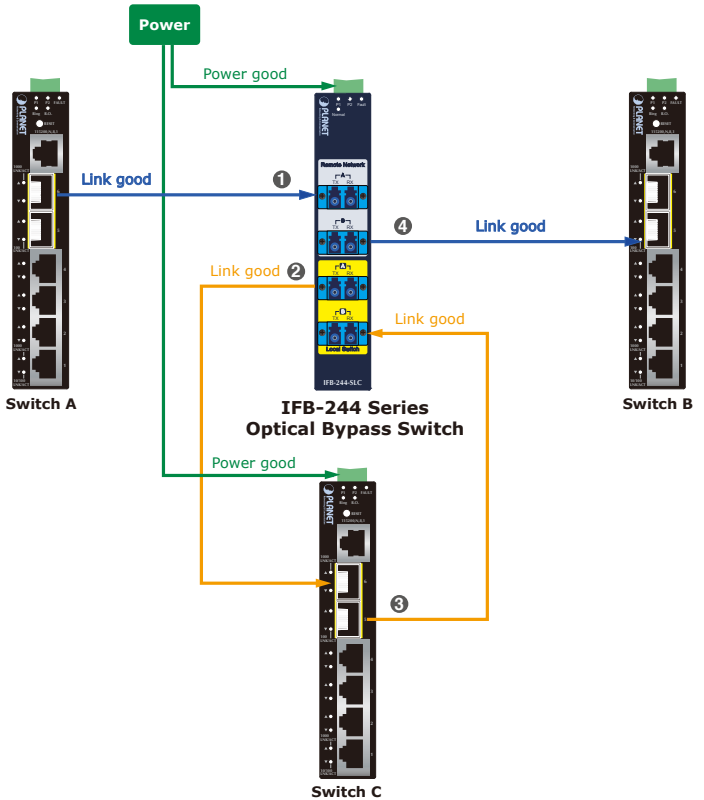
6.2 Power Connection

The IFB-244 Series is expected to be powered from the **same power source** as the **Local Switch** to ensure power system failure makes the IFB-244 Series change to Bypass mode. Make the IFB-244 Series share the same power source as the Local Switch.

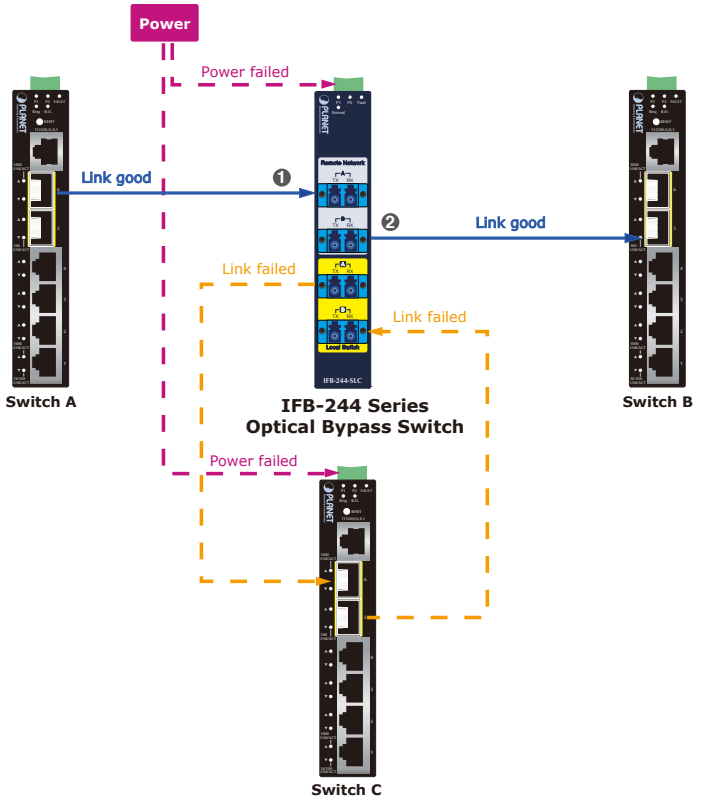
6.3 Recovering Communication from Power Failure

Operation Mode	Power Source	State LED	Optical Traffic Route
Normal Mode	Power on	Normal LED lit on	IFB-244 forwards packets between two remote network switches and the local switch.
Bypass Mode	Power off	Normal LED lit off	IFB 244 directly forwards packets between two remote networks switches and bypass the local switch.

■ Normal Mode


Power
Power good
Link good
1
Link good
4
Link good
Link good
2
Link good
Switch A
IFB-244 Series
Optical Bypass Switch
Switch B
Power good
3
Switch C

■ Bypass Mode


Power
Power failed
Link good
1
2
Link good
Link failed
Link failed
Power failed
Switch A
IFB-244 Series
Optical Bypass Switch
Switch B
Switch C

Customer Support

Thank you for purchasing PLANET products. You can browse our online FAQ resource on PLANET web site first to check if it could solve your issue. If you need more support information, please contact PLANET switch support team.

PLANET online FAQs:
http://www.planet.com.tw/en/support/faq.php

Switch support team mail address:
support @planet.com.tw

EC Declaration of Conformity

For the following equipment:

*Type of Product : Industrial 2-channel Optical Fiber Bypass Switch

*Model Number : IFB-244-SLC, IFB-244-MLC, IFB-244-SSC, IFB-244-MSC
* Produced by:
Manufacturer's Name : **Planet Technology Corp.**
Manufacturer's Address : 10F., No.96, Minquan Rd., Xindian Dist.,
New Taipei City 231, Taiwan R.O.C.

is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility Directive on (2014/30/EU).

For the evaluation regarding the EMC, the following standards were applied:

EN 55032	(2015 + AC:2016)
EN 55024	(2010 + A1: 2015)
EN 55035	(2017)

Responsible for marking this declaration if the:

☒ **Manufacturer** ☐ **Authorized representative established within the EU**

Authorized representative established within the EU (if applicable):

Company Name: **Planet Technology Corp.**

Company Address: **10F., No.96, Minquan Rd., Xindian Dist., New Taipei City 231, Taiwan R.O.C.**

Person responsible for making this declaration

Name, Surname **Kent Kang**

Position / Title : **Director**

Taiwan	**Jan. 14, 2019**	Kent Kang
Place	*Date*	*Legal Signature*

PLANET TECHNOLOGY CORPORATION

e-mail: sales@planet.com.tw http://www.planet.com.tw
10F., No.96, Minquan Rd., Xindian Dist., New Taipei City, Taiwan, R.O.C. Tel:886-2-2219-9518 Fax:886-2-2219-9528