



FBSWITCH1000

User Manual

(Version 2.0)

Beijing Fibrbridge Co., Ltd.

CONTENT

1. Introduction.....	3
2. Features.....	4
2.1. Hardware Function.....	4
2.2. Software Function.....	5
3. Interface Specification.....	6
3.1. Fiber Interface Specification.....	6
3.2. Ethernet Port.....	7
4. General.....	7
4.1. Device Size.....	7
4.2. Power.....	7
4.3. Environment.....	7
5. Appearance.....	8
5.1. F6-2114 (V1.2)	8
5.2. F6-2014, F6-2114 (V2.1)	8
5.3. F6-2005, F6-2105 (V2.1)	9
5.4. LEDs Function Description.....	10
5.5. DIP-Switch and Reset Button Function Description.....	11
6. Typical Applications.....	12
7. Management Port Configuration.....	12
7.1. RS-232 Management Port.....	12
7.2. Twist-pair Management Port.....	12

7.3. Default User and Password.....	13
7.4. Default IP Address.....	13
8. Installation.....	13
9. FAQ: Failures & Solutions.....	13
10. Order information.....	15
10.1. Model.....	15
10.2. Part Number (P/N).....	15

1. Introduction

Beijing FibrIDGE Co., Ltd. summarized the experience of selling the American broadband products since 1995 and synthesized the merits of different products of the world-famous manufacturers. The series of products select the higher quality device and develop meticulously for use. This series of products are orientated in the broadband access system for its high-quality, high-stability and low price. After being put up, the products can be used in the telecommunication IP MAN broadband optical network solution for its steady performance and powerful function. It interconnects a main board server, repeater, hub, switch, or PC and another PC simply. The device adopts the elaborately designed switch core, with high-speed non-blocking fabric and ultra-broad switch bandwidth, to make sure data transmission and reception has high stability. As an Ethernet access device, the device not only supports IEEE802.3 10Base-T Ethernet and IEEE802.3u 100Base-Tx fast Ethernet protocols, but also is compliant with IEEE 802.3x Flow Control, IEEE802.1Q VLAN TAG, IEEE802.1p Qos and IEEE802.1D Spanning Tree protocols. FBSWITCH1000 Series Network Switch provides four standard RJ45 jacks as 10/100Mbps Ethernet ports and one SC/FC/ST connector as fiber optic port, or five standard RJ45 jacks as 10/100Mbps Ethernet ports.

FBSWITCH1000 series have two types, managed and unmanaged. The managed type supports WEB management, SNMP software management and RS-232 console management. Customers conveniently view and configure all ports and management part via management software,

including the function of enable/disable a certain port, setting the port force mode, link speed, duplex mode and ports speed limitation, and resetting the management part, all 5 Ethernet ports or both. Some functions, such as VLAN, Port Mirroring and Broadcast Protection, are very convenient and useful for high-level application.

More information about SNMP management software, please read 'FBSWITCH1000 Series Fi-View-AL Software User Manual' for reference.

2. Features

2.1. Hardware Function

- Four Twist-pair ports and one Fiber Optic port (F6-2014/F6-2114 series), and five Twist-pair ports (F6-2005/F6-2105 series) available
- Support 10Base-T、100Base-TX、100Base-FX
- Fully compatible with IEEE802.3 Ethernet and IEEE802.3u fast Ethernet protocols
- Support IEEE802.3x flow control protocol
- Support IEEE802.1D Spanning Tree protocol
- Non-blocking switch core provides high speed forward performance
- High-speed MAC address lookup table inside, stored up to 1K MAC addresses
- Up to 1916 Bytes packet forwarded
- Up to 5km transmission distance on multi mode optical port and 120km transmission distance on single mode optical port
- Twist-pair ports support MDI/MDI-X auto-crossover

- Low power consumption, low heat generation and excellent compatibility
- Single-strand/dual-strand optical module selectable, FC/SC/ST optical port selectable

2.2. Software Function (Only Available for Managed Type)

- Support Console, WEB and SNMP management
- RS-232 DB9 female management port and 10/100Mbps RJ45 Ethernet management port available
- Show details of system information, including device name, location information, IP address, start-up time, software and hardware version
- View & configure the working status of each port, including link status, link speed, duplex mode, port shutdown status
- Set transmit and receive speed (bandwidth) limitation from 0Mbps to 100Mbps with step of 32Kbps
- Provide port-based VLAN and 802.1Q VLAN configuration, and port-based priority and 802.1p priority setting
- Port mirroring function available
- Summarize the data flow information and show the communication state of each port
- Support SNMP management. Set Trap Destination, Community Name, and authority
- A float window available for real-time alarm messages. And all alarm messages can pop up to get more attention
- Reset the management part, all 5 Ethernet ports, or both via management software
- Reset device to factory default, with network configuration

resetting or not selectable

- Show the detailed information of power supply, including AC/DC type, output power and running status
- Support firmware updating, with the update tool program and new version firmware file download from our website.
- Provide MIB file, make it easy to be integrated into the third-party SNMP management software
- Adopt the centralized management style and the tree-view catalogue, which can manage many sets of device at the same time in a single window.

3. Interface Specification

3.1. Fiber Interface Specification (Only Available for F6-2014/F6-2114)

- 1) Adopt standard 1*9 pin optical transceiver module;
- 2) Wavelength: 850nm or 1310nm in multi-mode, and 1310nm or 1550nm in single-mode;
- 3) Up to 120km transmission distance in single-mode;
- 4) SC/ST/FC optical connectors are selectable.

Optical Power Budget List:

Wavelength (nm)	Connector Type	Transmit Power (dBm)	Sensitivity (dBm)	Saturation (dBm)	Max Dist. (Km)	Loss (dBm /Km)
MM850	SC/ST	-14 ~ -18.5	-31 ~ -34	-14	2	3
MM1310	SC/ST	-14 ~ -18.5	-31 ~ -34	-14	5	2
SM1310	SC/ST/FC	-6 ~ -15	Better than -34	-3	40	0.4
SM1310	SC/ST/FC	3 ~ -3	Better than -36	-3	80	0.4
1550 DFB	SC/ST/FC	3 ~ -3	Better than -36	-3	120	0.25

3.2. Ethernet Port

- 1) Fully compatible with IEEE 802.3, IEEE802.3u and IEEE802.3x Standards
- 2) Link speed: 10/100Mbps auto-negotiation
- 3) Duplex mode: Half/full duplex auto-negotiation
- 4) Connectors: RJ45 Jack
- 5) Support automatic MDI/MDI-X crossover

4. General

4.1. Device Size

252mm (Width) × 135mm (Depth) × 36mm (Height)

4.2. Power

AC: 100 ~ 240VAC, 50/60Hz

DC: -48VDC

Power consumption: < 5W (with full load)

4.3. Environment

◇ Working environment:

Temperature: 5°C ~ 40°C;

Humidity: 30% ~ 90% (25°C);

Atmosphere pressure: 86 kPa ~ 106 kPa.

◇ Store and transportation environment:

Temperature: -20°C ~ 60°C;

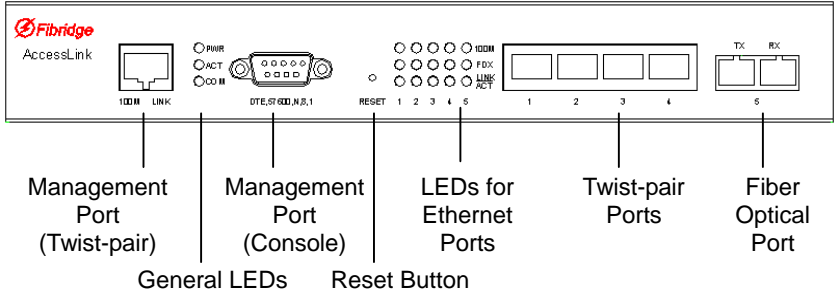
Humidity: 20% ~ 90% (25°C);

Atmosphere pressure: 86 kPa ~ 106 kPa.

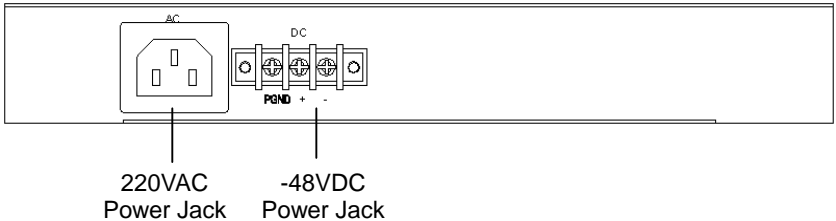
5. Appearance

5.1. F6-2114 (V1.2)

1) Front Panel

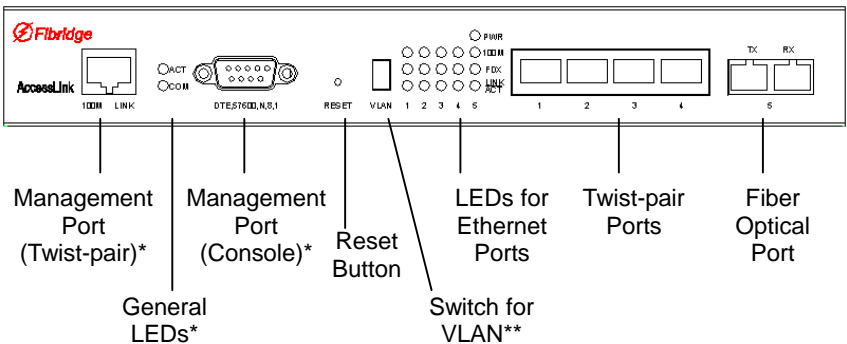


2) Rear Panel

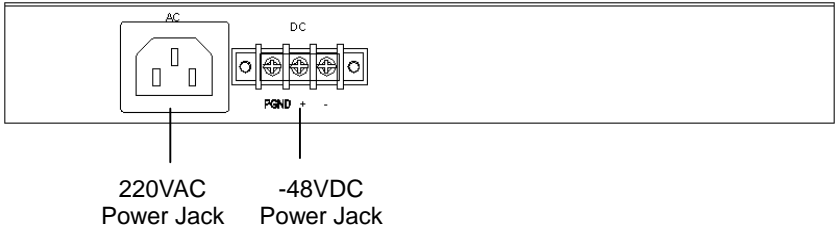


5.2. F6-2014, F6-2114 (V2.1)

1) Front Panel

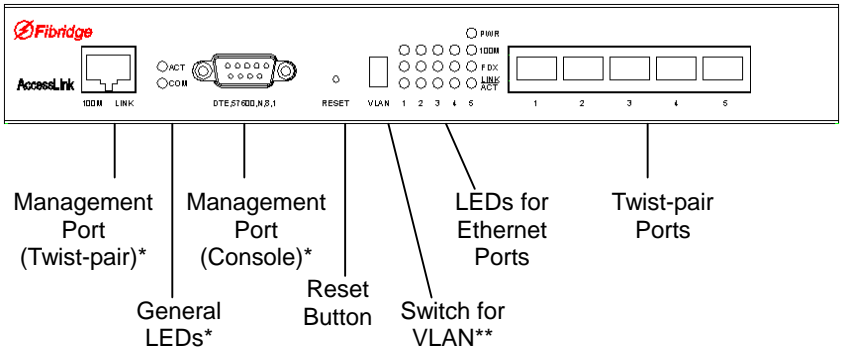


2) Rear Panel

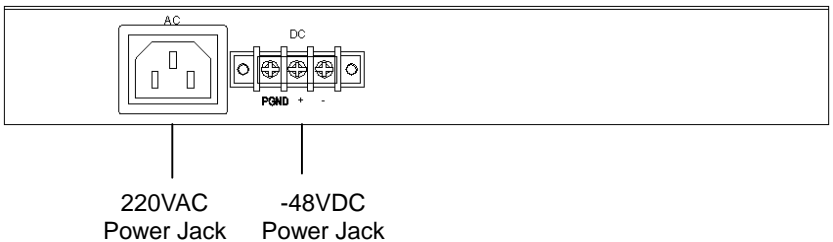


5.3. F6-2005, F6-2105 (V2.1)

1) Front Panel



2) Rear Panel



* Only available for MANAGED type

** Only available for UNMANAGED type

5.4. LEDs Function Description

Table 1 LEDs Function Description

LED	Color	Function Description	Status	State Description
PWR	Green	Power Status	ON	Power Supply Ok
			OFF	No Power Supply or Power Failure
ACT	Yellow	Device Running Status	Blink	Device is running
			ON/OFF	Software embedded in device is down
COM	Yellow	Console Management Port Data Transmitting	Blink	Console management port is transmitting data
			OFF	No data transmission on console management port
LINK	Yellow	Twist-pair management port Link/Act Status	ON	Port linked
			Blink	Port is transmitting or receiving data
			OFF	Port not linked
100M	Green	Twist-pair management port link speed	ON	100Mbps
			OFF	10Mbps
LINK/ACT	Yellow	Port Link/Act Status	ON	Port linked
			Blink	Port is transmitting or receiving data
			OFF	Port not linked
FDX	Green	Port Duplex Mode	ON	Full duplex
			OFF	Half duplex
100M	Green	Port Link Speed	ON	100Mbps
			OFF	10Mbps

5.5. DIP-Switch and Reset Button Function

Description

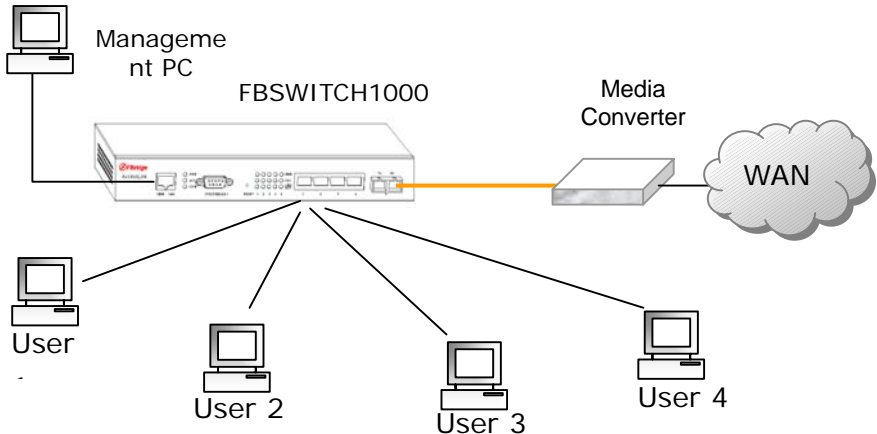
1) Reset Button

FBSWITCH1000 provides an embedded reset button in front panel, to prevent being triggered by mistake. Tipping the reset button with a pin softly, the device will be reset. During reset, LEDs of Ethernet ports will blink sequentially, which means the device is performing self-test.

2) DIP-Switch

The 2-bit DIP-switch resides in the front panel is used to enable/disable VLAN functionality, for the unmanaged type device. When 2-bit set to OFF, the simple port-based VLAN is disabled, and all of the five Ethernet ports are switched. While 2-bit set to ON, the simple port-based VLAN is enabled, and each of port 1, 2, 3 and 4 sets up a VLAN between itself and port 5, respectively, that means port 1, 2, 3 and 4 can send package to or receive package from port 5, but can not between any two of them. Notice: this DIP-Switch is only available for UNMANAGED type device.

6. Typical Applications



User1 to User4 can apply necessary bandwidth and connect to the WAN using FBSWITCH1000.

7. Management Port Configuration (Only Available for Managed Type)

7.1. RS-232 Management Port

Baud Rate: 9600 - 115200

Data Width: 8

Odd/Even Parity: None

Stop Bit: 1

Flow Control: None

Connector: DB9, Male

7.2. Twist-pair Management Port

Link Speed: 10/100Mbps auto-negotiation

Duplex Mode: Auto-negotiate on half/full duplex mode

Connector: RJ45

7.3. Default User and Password

Name: admin, puser, guest

Password: No Password

7.4. Default IP Address

The default IP address of the device: 192.168.0.216

8. Installation

1. Connect the fiber strand and twist-pair cable according to the practical application environment, then connect the device to power supply;
2. Switch on the power, the device will perform the self-test procedure. During the test, all LEDs will blink one by one;
3. After self-test, if the ports connect well, the PWR and LINK/ACT LED will light on. The 100M LED is on while link speed is 100Mbps on corresponding port, and the FDX LED is on while the port works in full duplex mode;
4. While transmitting or receiving data, LINK/ACT LED blinks.

9. FAQ: Failures & Solutions

1. Failure: Power LED is off.

Solution:

Check-up the device if the power cable is connected correctly.

2. Failure: LINK/ACT LED of twist-pair port is off after self-test with the port connected

Solution:

- (1) Check if the twist-pair cable is connected correctly.
- (2) Check if the link partner is running normally.

- (3) Check if the link partner port is working in the same mode as that of the current port

3. Failure: LINK/ACT LED of fiber optic port is off after self-test with the port connected

Solution:

- (1) Check if the fiber is connected correctly.
- (2) Failure connection of transmit or receive side may lead to the port link status led off. So, need to check if the TX or RX connection of the fiber port is normal.

4. Failure: Data transfer abnormally, including transferring failure, data loss

Solution:

- (1) Check if the transmit power of the fiber optic port is normal;
- (2) Be sure no single-mode fiber connected with multi-mode equipment;
- (3) Check if they are used in pairs when single-strand devices are used.

5. Failure: The device doesn't work after working well for a while. That is to say, the device doesn't transfer data, but if reset, it will work normally.

Solution:

It is usually caused by the Ethernet switch. In normal status, the switch will take CRC and package length check, and drop the bad package. However, some bad ones could not be inspected, and thus they could not be sent out or dropped, so these bad packages will be stored in the buffer one by one, until the buffer is filled up, which brings about the failure of the switch. Try to connect the device with PC directly to see if the failure is not existed.

10. Order information

10.1. Model

FBSWITCH1000 5-port Ethernet Switch / Bandwidth Access

10.2. Part Number (P/N)

- ✧ F6-2114-S3042CA Four twist-pair ports and one fiber optic port, Managed type, single-mode, 1310nm transmission wavelength, 40Km, double-strand SC fiber optic connector, 220VAC power supply
- ✧ F6-2014-S3082CA Four twist-pair ports and one fiber optic port, Unmanaged type, single-mode, 1310nm transmission wavelength, 80Km, double-strand SC fiber optic connector, 220VAC power supply
- ✧ F6-2114-S3042CD Four twist-pair ports and one fiber optic port, Managed type, single-mode, 1310nm transmission wavelength, 40Km, double-strand SC fiber optic connector, -48VDC power supply
- ✧ F6-2014-S3042FA Four twist-pair ports and one fiber optic port, Unmanaged type, single-mode, 1310nm transmission wavelength, 40Km, double-strand FC fiber optic connector, 220VAC power supply
- ✧ F6-2114-M31CA Four twist-pair ports and one fiber optic port, multi-mode, Managed type, multi-mode, 850nm transmission wavelength, double-strand SC fiber optic connector, 220VAC power supply
- ✧ F6-2114-M32CD Four twist-pair ports and one fiber optic port, multi-mode, Managed type, multi-mode, 1310nm transmission wavelength, double-strand SC fiber optic connector, -48VDC power supply
- ✧ F6-2114-W3042CA Four twist-pair ports and one fiber

- optic port, Managed type, single-mode, 1310nm transmission wavelength, 40Km, single-strand SC fiber optic connector, 220VAC power supply
- ✧ F6-2114-S3043CA Four twist-pair ports and one fiber optic port, Managed type, single-mode, 1550nm transmission wavelength, 40Km, single-strand SC fiber optic connector, 220VAC power supply
 - ✧ F6-2105A Five twist-pair ports, Managed type, 220VAC power supply
 - ✧ F6-2005D Five twist-pair ports, Unmanaged type, -48VDC power supply