About the EZ Switch 10/100

SMC-EZ108DT

The EZ Switch™ 10/100 (SMC-EZ108DT) is an 8-port Fast Ethernet switch. Its 8 10BASE-T/100BASE-TX ports deliver dedicated 10/100 Mbps links to each attached LAN segment—all with conventional cabling and adapters. Auto-Negotiation is used to select the optimal transmission speed and communication mode for each connection. With store-and-forward switching and flow control, maximum data integrity is always maintained, even under heavy loading. Easy installation and reliability make this plug-and-play switch an ideal choice for smooth Fast Ethernet integration.

Features and Benefits

- Auto-Negotiation of half or full-duplex on all ports
- ANSI/IEEE 802.3u compliance ensures compatibility with standards-based hubs, switches and cards from any vendor
- Store-and-forward switching ensures error-free transmission
- Half- and full-duplex flow control prevents packets from being dropped under heavy loading
- Plug and play
- Built-in wiring crossovers on all ports allow connections to servers and workstations to be made with straight-through cabling
- "At-a-glance" LEDs for port and system status monitoring
- Desktop and rack mountable

Front-Panel LEDs

The front panel of the switch provides a link status LED for each RJ-45 port. In addition, the front panel also contains status LEDs for "at-a-glance" system monitoring. The following table details the functions of the various indicators:

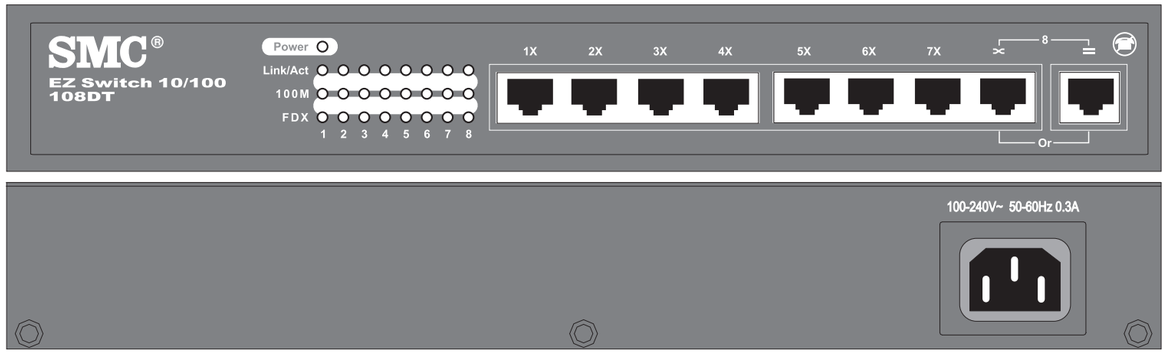
Port and Switch Status LEDs

LEDs	Condition	Status
Power	Green	Switch is receiving power.
Link/Act	Green	Indicates that the connection between port and attached device is valid.
	Flashing Green	Indicates that the switch is transmitting or receiving data.
100M	Green	Indicates that the port is operating at 100 Mbps.
FDX	Green	Indicates that the port is operating in full-duplex mode.
	Flashing Green	Indicates a collision occured on the port segment when operating in half-duplex mode.

Front-Panel Ports

The front-panel ports are dual-speed RJ-45 ports with built-in wiring crossovers. PCs can be connected to these ports with straight-through cable. Each port supports Auto-Negotiation, so the optimum communication mode (half or full duplex) and data rate (10 Mbps or 100 Mbps) are selected automatically.

Port 8 on the switch doubles as a crossover port and a straight-through daisy-chain port. The daisy-chain port makes it convenient to connect straight-through cable from the EZ Switch 10/100 to a crossover port on another device.



Rear Panel

The AC power receptacle is located on the rear panel of the switch.

Installing the Switch

The EZ Switch 10/100 can be placed on a desktop or shelf, or installed in a standard 19-inch equipment rack.

Equipment Checklist

After unpacking the EZ Switch 10/100, check the contents of the box to be sure you've received the following components:

- EZ Switch 10/100 SMC-EZ108DT
- Appropriate AC power cable
- Four adhesive foot pads
- SMC Warranty Registration Card
- This User Guide

Selecting a Site

Be sure to follow the site selection guidelines below when choosing a location:

- Select a suitable location for the switch:
  - It should be accessible for installing, cabling and maintaining the switch.
  - The temperature and humidity should be within the ranges listed in the specifications.
  - The status LEDs should be clearly visible.
  - There should be adequate space (approximately two inches) on all sides for proper air flow.
- Before rack mounting the switch, pay particular attention to the following factors:
  - *Temperature*: Since the temperature within a rack assembly may be higher than the ambient room temperature, check that the rack-environment temperature is within the specified operating temperature range.
  - *Mechanical Loading*: Do not place any equipment on top of a rack-mounted switch.
  - *Circuit Overloading*: Be sure that the supply circuit to the rack assembly is not overloaded.
  - *Grounding*: Rack-mounted equipment should be properly grounded. Particular attention should be given to supply connections other than direct connections to the mains.
- Make sure twisted-pair cable is always routed away from power lines, fluorescent lighting fixtures and other sources of electrical interference such as radios, transmitters, etc.
- Make sure that a properly grounded power outlet is within 8 feet (2.44 meters) of the switch and is powered from an independent circuit breaker. As with any equipment, using a filter or surge suppressor is recommended.

Instructions

1. **Positioning the Switch:** For desktop or shelf mounting, attach the four adhesive foot pads to the bottom of the switch. For rack-mounting, attach the mounting brackets to both sides of the switch with the screws provided, then install the switch in the rack.
2. **Applying Power:** Plug one end of the power cable into the power receptacle at the back of the switch, and the other end into an appropriate electrical outlet. Check the Power LED to be sure it is on.

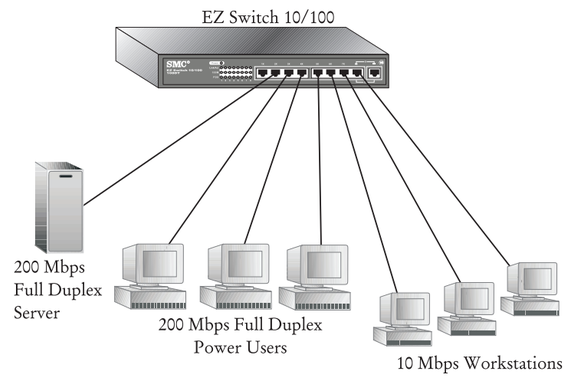
   Note: It is not necessary to power off the switch before connecting or disconnecting any UTP cables, as these actions *will not* disrupt the operation of other devices attached to the switch.
3. **Connecting PCs:** Connect each PC to an RJ-45 port on the switch with a straight-through twisted-pair cable segment, maximum length 100 meters (328 feet). The EZ Switch 10/100 will support up to 8 PCs. However, if using port 8 be sure to use the fixed crossover port marked "X" on the switch.

   Note: If an attached device does not support Auto-Negotiation, the data rate will be sensed automatically and the communication mode will default to half duplex.
4. **Cascading Switches and Other Network Devices:** If you need more ports, connect the daisy-chain port, marked "=" on port 8, to a crossover port on another device. Be sure to use straight-through twisted-pair cable, maximum length 100 meters (328 feet). Note that if you are using the daisy-chain port you cannot use the fixed crossover port, marked "X" on port 8.

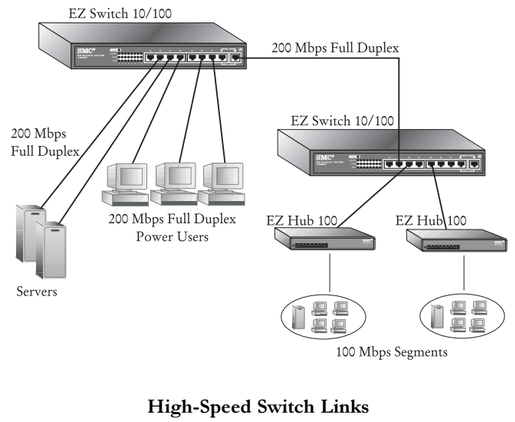
   Note: Alternatively, you can cascade from any crossover port on the switch to a daisy-chain port on another device. You may also connect to crossover ports at both ends if you use a crossover cable. See the "Cable Specifications" and "Connectivity Guidelines" sections of this guide for further information.

Sample Applications

Some typical applications for the EZ Switch 10/100 are illustrated below:



Standalone LAN



High-Speed Switch Links

Troubleshooting

1. Symptom

Power LED does not light after power on.

Probable Causes

Power outlet or power cord may be defective.

Possible Solutions

- Check for loose connections.
- Check the power outlet by using it for another device.
- Replace the power cord.

2. Symptom

Link LED does not light after connection is made.

Probable Causes

Switch port, network card or cable may be defective.

Possible Solutions

- Check that the switch and attached device are both powered on.
- Be sure the network cable is connected to both devices.
- Verify that Category 5 cable is used for 100 Mps connections and that the length of any cable does not exceed 100 meters (328 feet).
- Check the network card and cable connections for defects.
- Replace the defective card or cable if necessary.

SMC Networks

User Guide
SMC-EZ108DT

- Plug and play—no software, no switches, nothing to load
- Auto-Negotiation of speed and duplex mode
- Full-duplex support on all ports
- Half- and full-duplex flow control
- Desktop and rack mountable

8-Port Fast Ethernet Switch

EZ Switch 10/100

FOR TECHNICAL SUPPORT, CALL:

From U.S.A. and Canada (8:30 AM - 8:00 PM Pacific Time)
(800) SMC-4-YOU; (949) 707-2400; (949) 707-2460 (Fax)
From Europe (8:00 AM - 5:30 PM UK Greenwich Mean Time)
44 (0) 1189 748740; 44 (0) 1189 748741 (Fax)

INTERNET

E-mail addresses:
techsupport@smc.com
european.techsupport@smc-europe.com
Driver updates:
http://www.smc.com/support.html
World Wide Web:
http://www.smc.com/
FTP Site:
ftp.smc.com

FOR LITERATURE OR ADVERTISING RESPONSE, CALL:

U.S.A. and Canada:	(800) SMC-4-YOU;	Fax (949) 707-2460
Spain:	34-93-477-4920;	Fax 34-93-477-3774
UK:	44 (0) 1189 748700;	Fax 44 (0) 1189 748701
Southern Europe:	33 (1) 41.18.68.68;	Fax 33 (1) 41.18.68.69
Central/Eastern Europe:	49 (0) 89 92861-200;	Fax 49 (0) 89 92861-230
Nordic:	46 (8) 564 33145;	Fax 46 (8) 87 62 62
Middle East:	971-48818410;	Fax 971-48817993
South Africa:	27 (0) 11-3936491;	Fax 27 (0) 11-3936491
PRC:	86-10-6235-4958;	Fax 86-10-6235-4962
Taiwan:	886-2-2747-4780;	Fax 886-2-2747-9220
Asia Pacific:	(65) 238 6556;	Fax (65) 238 6466
Korea:	82-2-553-0860;	Fax 82-2-553-7202
Japan:	81-45-224-2332;	Fax 81-45-224-2331
Australia:	61-2-9416-0437;	Fax 61-2-9416-0474
India:	91-22-8204437;	Fax 91-22-8204443

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Irvine, CA 92618
Phone: (949) 707-2400

Publication Number: 150985-101 E082000-R03

Copyright

Trademarks

Limited Lifetime Warranty

Complete warranty information for all SMC products is available on SMC's web site at http://www.smc.com.

Compliances

FCC Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

EC Conformance Declaration - Class B

European contact: SMC Networks Europe
Edificio Conata II
Calle Fructuós Gelabert 6-8, 2º, 4ª
08970 - Sant Joan Despí
Barcelona, Spain

This information technology product complies with ISO/IEC Guide 22 and EN45014. It conforms to the following specifications:

EN55022(1988)/CISPR-22(1985) Class B
EN50082-1: IEC 1000-4-2, 3, 4

This information technology product complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC and carries the CE Mark accordingly.

Industry Canada - Class B

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus", ICES-003 of Industry Canada.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matérial brouilleur: "Appareils Numériques", NMB-003 édictée par l'Industrie.

VCCI Class B

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取り扱い説明書に従って正しい取り扱いをして下さい。

Australia AS/NZS 3548 (1995) - Class B

ACN 069 351 613

Australian Contact: SMC Australia
Suite 18, 12 Tryon Road,
Lindfield, NSW 2070
Phone: 61-2-9416-0437
Fax: 61-2-9416-0474

Safety Compliance

CSA/NRTL (C22.2.950, UL 1950)
EN60950, (IEC 950)

EZ Switch 10/100 Specifications

Model
SMC-EZ108DT

Ports
8 RJ-45 ports
Ports 1-7: Twisted-pair, fixed crossover
Port 8: Twisted-pair, choice between fixed crossover or straight-through (daisy-chain port)

Network Interface
RJ-45: 100 ohm, UTP cable
10BASE-T - EIA/TIA Categories 3, 4, or 5
100BASE-TX - EIA/TIA Category 5

LEDs
Power - one
Link/Act *(activity)* - one per port
100M *(100 Mbps)* - one per port
FDX *(full duplex)* - one per port

Switching Method
Store-and-forward

MAC Address Table
1K entries

Memory Buffer
1 Mbyte per unit

Filtering/Forwarding/Learning Rates
Full line rate

Size
9.88 x 4.65 x 1.46 in (25.1 x 11.8 x 3.7 cm)

Weight
1.76 lbs (0.8 kg)

Temperature
Operating: 32° to 122°F (0° to 50°C)
Storage: -25° to 158°F (-13° to 70°C)

Humidity, non-condensing
5% to 95%

Power Requirements
Universal AC input; 100 to 240 VAC, 50 to 60 Hz

Power Consumption
10 Watts maximum

Heat Dissipation
68 BTU/hr maximum

Maximum Current
0.2A @ 110 VAC
0.1A @ 240 VAC

Standards
ANSI/IEEE 802.3
ANSI/IEEE 802.3u
ANSI/IEEE 802.3x

EMC/Safety Compliances
CE Mark
Emissions
FCC Class B
VCCI Class B
EN55022 (CISPR 22) Class B
C-Tick - AS/NZS 3548 (1995) Class B
Immunity
IEC 1000-4-2/3/4
Safety
CSA/NRTL (C22.2.950, UL 1950)
TÜV/GS (EN60950)

Limited Warranty
Lifetime

Cable Specifications

Cable Type and Connector

10BASE-T Cable		
Type	**Length**	**Connector**
Category 3, 4, 5 UTP	100 m (328 ft)	RJ-45

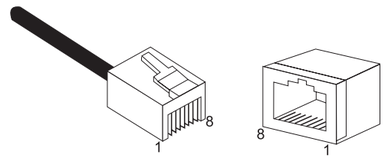
100BASE-TX Cable		
Type	**Length**	**Connector**
Category 5 UTP	100 m (328 ft)	RJ-45

RJ-45 Connector Pin Assignments

Caution: DO-NOT plug a phone jack connector into any RJ-45 port. Use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.

An Ethernet or Fast Ethernet twisted-pair link segment requires two pairs of wires. Each wire pair is identified by two different colors. For example, one wire might be green and the other, green with a white stripe.

Each wire pair must be attached to the RJ-45 connector in a specific orientation. Note how the pins are numbered in the illustration below. Be sure to hold the connectors in the same orientation when attaching the wires to the pins.



RJ-45 Pin Assignments Straight-Through Cable	
End 1	**End 2**
1 (Tx+)	1 (Tx+)
2 (Tx-)	2 (Tx-)
3 (Rx+)	3 (Rx+)
6 (Rx-)	6 (Rx-)

RJ-45 Pin Assignments Crossover Cable	
End 1	**End 2**
1 (Tx+)	3 (Rx+)
2 (Tx-)	6 (Rx-)
3 (Rx+)	1 (Tx+)
6 (Rx-)	2 (Tx-)

Note: The "+" and "-" signs are used to represent the polarity of the wires that make up each wire pair.

Connectivity Guidelines

Crossover/Straight-Through Wiring Requirements		
If the port on the EZ Switch 10/100 is...	**And the port on the other device is...**	**Then use...cable**
Crossover (x)	Crossover	Crossover
Crossover (x)	Straight-through	Straight-through
Straight-through (=)	Crossover	Straight-through
Straight-through (=)	Straight-through	Crossover

Maximum Fast Ethernet Network Diameter		
Repeater Type and Number	**Twisted Pair 100BASE-TX**	**Twisted Pair/Fiber 100BASE-TX and FX**
1 Class I	200 m (656 ft)	260.8 m (855.4 ft)
1 Class II	200 m (656 ft)	308.8 m (1012.6 ft)
2 Class II	205 m (672.4 ft)	216.2 m (709.1 ft)

Note: Network diameter is defined as the wire distance between two end stations in the same collision domain.