

Product Specifications

16-Port 10/100BASE-TX Fast Ethernet Switch

FNSW-1601

Version 9.0

This document contains confidential proprietary information and is property of PLANET. The contents of this document should not be disclosed to unauthorized persons without the written consent of PLANET.

Change History:

Revision	Date	Author	Change List
Version 9.0	2019/5/7	Marc Liao	Hardware change - Dimension changed - LED Definition & location /RJ45 port location change - Add DIP switch for standard/flow control off/ VLAN /Extend mode selection
Version 8.0	2014/2/20	Marc Liao	Hardware chipset changed
Version 7.0	2011/8/22	Marc Liao	Hardware chipset changed
Version 6.0	2009/10/19	Norman Tsai	Hardware changed
Version 5.0	2007/1/8	Berton Yeh	Hardware changed
Version 4.0	2004/02/27	Marc Liao	Hardware changed
Version 3.0	2003/02/27	Marc Liao	Initial release
Version 2.0	2002/05/16	Marc Liao	Initial release
			-

Author:	Marc Liao	Editor:	Marc Liao
Reviewed By:		Approved By:	Kent Kang

1. PRODUCT DESCRIPTION



Power-saving, High-performance Ethernet Networking

PLANET **Green Networking Switch- FNSW-1601** is an ideal solution in line with the energy-saving trend worldwide. The FNSW-1601 is a 16-port 10/100BASE-TX Fast Ethernet Switch upgraded from earlier version and brings both benefits of energy saving and high performance.

Brand-New Hardware DIP Switch for Functional Operation Modes Selection

The new hardware version of the FNSW-1601 offers "**Standard**", "**Flow Control Off**", "**VLAN**" and "**Extend**" modes.

DIP Switch Mode	Function
Standard (default)	This mode makes the Fast Ethernet Switch operate as a general switch and all ports operate at 10/100Mbps auto-negotiation.
Flow Control Off	This mode disables the Fast Ethernet Switch flow control function.
VLAN	This mode makes the FNSW-1601 operate as a VLAN isolation switch and 1. Port 1 to port 14 will isolate respectively. 2. Port 1 to port 14 can only communicate with port 15 and port 16 (uplink port).
Extend	This mode makes the FNSW-1601 operate as a distance extension switch and port 1 to port 8 can only transmit distance of 200m at speed of 10Mbps.

The FNSW-1601 operates as a normal Fast Ethernet Switch in the "**Standard**" operation mode. The "**VLAN**" operation mode features port-based VLAN function that can help to prevent the connected clients' multicast or broadcast storm from influencing each other.

In the "**Extend**" operation mode, the FNSW-1601 operates on a per-port basis at 10Mbps duplex operation but can transmit data over a distance of up to 200 meters overcoming the 100m limit on Ethernet UTP cable. With this brand-new feature, the FNSW-1601 provides an additional solution for distance extension, thus saving the cost of Ethernet cable installation. Its VLAN isolation function isolates each port so as to prevent broadcast storm and defend DHCP spoofing in the "Extend" operation mode.

Energy Saving

The FNSW-1601 incorporates advanced Green Networking technology:

- **Intelligent scales power based on cable length**

The **intelligent scales power** is an intelligent algorithm that actively determines the appropriate power level based on cable length. The FNSW-1601 would automatically detect the Ethernet cable length and adjust power usage accordingly. The connected device can substantially reduce overall power consumption, which makes a significant contribution to energy saving. The FNSW-1601 uses new engine that provides power savings of up to 22% but maintains high performance efficiently.

High Performance

The high performance throughput (filtering / forwarding rate: 14,880 packets per second at 10Mbps, 148,800pps and 100Mbps) helps the FNSW-1601 boost bandwidth, eliminates unnecessary traffic, and relieves congestion on your critical server path. The FNSW-1601 is the ideal choice to alleviate bottlenecks in client / server and peer-to-peer environments in a cost-effective way.

Plug and Play

The FNSW-1601 provides users with high-speed network connections. With its auto-negotiation capability, all the RJ45/STP ports of the FNSW-1601 can be configured to speeds of 10/20Mbps or 100/200Mbps automatically. What's more, the MDI/MDIX auto-detection is for easy, plug and play connection, regardless of the cabling type, straight-through or crossover.

2. PRODUCT FEATURES

► **Physical Port**

- 16 10/100BASE-TX Fast Ethernet ports
- Supports auto MDI/MDI-X function

► **Layer 2 Features**

- Complies with IEEE 802.3, 10BASE-T, IEEE 802.3u 100BASE-TX Ethernet standards
- Features Store-and-Forward mode with wire-speed filtering and forwarding rates
- Integrated address look-up engine, supporting 8K absolute MAC addresses
- Power saving ability for Green networking
- IEEE 802.1Q VLAN packet transparency support
- IEEE 802.3x flow control for full-duplex operation and back pressure for half-duplex operation
- Hardware-based 10/100BASE-TX, half/full duplex, flow control and auto-negotiation
- Automatic address learning and address aging
- Supports CSMA/CD protocol

► **Hardware Features**

- 100~240V AC, 0.2A, 50~60Hz universal power input
- DIP switch for standard/flow control off/VLAN/Extend mode selection
- FCC, CE class A compliant

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

Switch ASIC: Realtek RTL8316E x1

LED Board Controller: Realtek RTL8231 x1

3.2 FUNCTION SPECIFICATIONS

Product	FNSW-1601
Hardware Specifications	
Hardware Version	V9
10/100BASE-TX MDI/MDIX Ports	16
Throughput (packet per second)	2.38Mpps
Switch Fabric	3.2Gbps
Power Consumption/Dissipation	2.5watt/8.5BTU
Power Requirements	100~240V AC, 0.2A, 50-60Hz
Switch Processing Scheme	Store-and-Forward
Address Table	8K entries
Maximum Packet Size	1522bytes
Flow Control	Back pressure for half duplex IEEE 802.3x pause frame for full duplex
DIP Switch	Operation mode selection <ul style="list-style-type: none"> ■ Standard ■ Flow control off ■ VLAN ■ Extend <p>Note: Change the DIP switch setting and the Fast Ethernet switch will reset automatically to take effect.</p>
Standards Conformance	
Standards Compliance	IEEE 802.3 (Ethernet) IEEE 802.3u (Fast Ethernet) IEEE 802.3x (Full-Duplex Flow Control) IEEE 802.3az Energy Efficient Ethernet (EEE)

3.3 PHYSICAL SPECIFICATIONS:

Dimensions:

440 x 140 x 44mm (W x D x H), 1U height

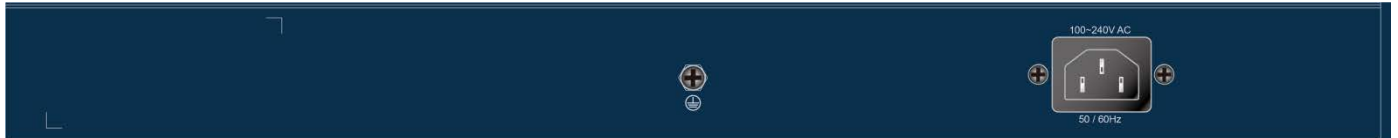
Weight:

1.3kg

■ Front Panel:



■ Rear Panel:



Note: Change the DIP switch setting and the Fast Ethernet switch will reset automatically to take effect.

■ LED Definition

System

LED	Color	Function
PWR	Green	Lights to indicate that the Switch has power.

Per 10/100BASE-TX Port

LED	Color	Function
10/100 LNK/ACT	Green	Lights to indicate the link through that port is established successfully at 10/100Mbps. Blinks to indicate that the Switch is actively sending or receiving data over that port.

3.4 ENVIRONMENTAL SPECIFICATIONS

Operating:

Temperature: 0°C ~ 50 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

Storage:

Temperature: -10°C ~ 70 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

3.5 ELECTRICAL SPECIFICATION

Input Voltage:	100~240V AC, 50/60Hz, 0.2A (max.)	
Power Consumption (System on):	110V: 0.7 watts	2.3BTU
	220V: 1 watts	3.4BTU
Power Consumption (Ethernet Full Load Operation):	110V: 2.2 watts	7.5BTU
	220V: 2.5 watts	8.5BTU

3.6 REGULATORY COMPLIANCE

FCC Part 15 Class A, CE

3.7 RELIABILITY

MTBF > 50,000 hrs @ 25 degrees C

3.8 BASIC PACKAGING

- FNSW-1601 x 1
- User's Manual x 1
- Power Cord x 1
- Two Rack-Mounting Brackets with Attachment Screws x 8

3.9 PACKING INFORMATION

Box Dimensions (W x D x H):	486 x 224 x 77 mm
Weight:	2.02kg
Carton Dimensions (W x D x H):	500 x 405 x 240 mm
Carton Weight:	11.2kg
Quantity:	5pcs in one carton