UOTEK®

# UT-63424G series 10 Gigabit Layer 3 Managed Ethernet Switches

1. Overview

The UT-63424G series is a high-performance, cost-effective network-managed industrial Ethernet layer 3 switch. This series includes two product models, which can provide 16 Gigabit SFP network interfaces (or 16 Gigabit Ethernet ports), 4 10 Gigabit SFP+ interfaces, and 8 Gigabit optical-electrical composite interfaces. This not only increases bandwidth and improves network data communication, but also is very suitable for large-scale industrial network applications.

This series of products supports a variety of layer 2 software features (port mirroring, VLAN, port aggregation, IGMP snooping, QoS, STP/RSTP/MSTP, etc.) and basic IPv4/IPv6 layer 3 routing protocols (static routing/RIP/OSPF/VRRP), providing users with a complete solution and better building large-scale LANs for industrial applications such as factory automation, intelligent transportation, video surveillance, etc.
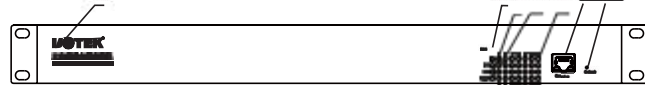
2.Panel description

UT-63424G-16GT8GB-4XGP-BNA Rear Panel:
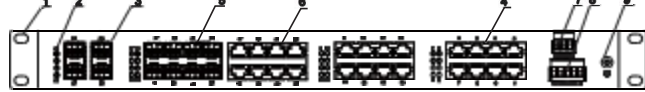

UT-63424G-16GP8GB-4XGP-BNA Rear Panel:

Front Panel:

1. Rack mount ears
2. 10 Gigabit SFP+ interface indicator light
3.10 Gigabit SFP+ interface (10 Gigabit/1 Gigabit adaptive)
4. 1 Gigabit Ethernet interface
5. 1 Gigabit SFP interface (combo port)
6. 1 Gigabit Ethernet interface (combo port)
7. Relay alarm output terminal
8. Power input terminal

9. Grounding screw
10.Power indicator light (P1/P2)
11. Relay alarm indicator light
12. Network interface indicator light
13. Console port
14. Restore factory settings
15. Company logo
16.System running indicator light

Dimensions (Unit:mm)

—1—
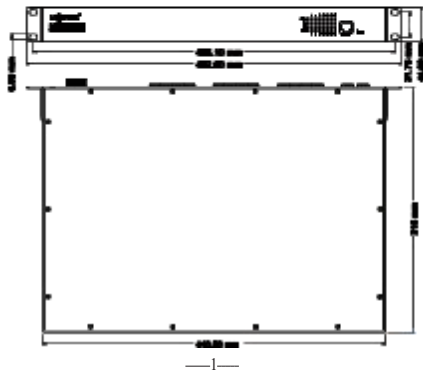
3. Main Features

1.Supports 16 Gigabit SFP network interfaces (or 16 Gigabit Ethernet ports) + 4 10Gbps SFP+ interfaces + 8 Gigabit optical-electric multiplexing Combo ports
2. 10Gbps SFP+ interfaces support 10G/1G auto-adaptation
3. Supports IGMP Snooping/MLD Snooping for filtering multicast packets
4. Supports IEEE 802.1Q VLAN for easy network planning
5. Supports QoS with 8 queue mappings for increased network stability
6. Supports STP/RSTP and MSTP for network redundancy
7. Supports SNMPv1/v2v3 for secure network management
8. Supports link aggregation (static aggregation/LACP) to optimize network bandwidth
9. Supports Access Control Lists (ACL) for enhanced flexibility and network management security
10. Supports port mirroring function for online debugging
11.Supports port rate limiting, broadcast storm suppression, multicast storm suppression, and unknown unicast storm suppression to ensure network stability
12. Supports Layer 3 switching functions (static routing/RIP/OSPF/VRRP)
13. Supports power and port abnormal status relay output alarm functions
14. Supports wide temperature range (-40℃~75℃) for operation

4. Hardware Specifications

4.1 Protocol Standards

Standards: IEEE802.3, IEEE802.3u, IEEE802.3x, IEEE802.3z, IEEE802.3ab, IEEE802.1Q, IEEE802.1p, IEEE802.1D, IEEE802.1w, IEEE802.1s, IEEE802.3ad, IEEE802.1x, IEEE802.3ae
Protocols: ARP, ICMP, TCP, HTTP/HTTPS, Telnet, STP/RSTP/MSTP, LLDP, IGMP, SNMPv1/v2c/v3, DHCP Server, NTP, SSH, IPV6, LACP, VLAN, ERPS, QINQ
Layer 3 Switching Technology: Static Routing, RIP V1/V2, OSPF, VRRP Support Router Redundancy
Flow Control: IEEE802.3x Flow Control, Backpressure Flow Control

4.2 Interfaces

Fiber Interface: 100/1000Base-X, SFP (interface), 1G/10Gbps SFP+ (10 Gigabit SFP+ interface)
RJ45 Interface: 10/100/1000Base-T port, MDI/MDI-X adaptive
Console Port: Serial Port Debugging (RJ45 Interface)
Alarm Port: 3-PIN Wiring Terminal, Relay Alarm Information Output

4.3 Transmission Distance

Category 5 Twisted Pair Cable: 100m
Fiber Module:
Single-mode: 1310nm 20/40/60Km, 1550nm 80/100/120Km
Multimode: 1310nm 2Km

4.4 Switching Performance

100Mbps Forwarding Rate: 148810pps
1000Mbps Forwarding Rate: 1488095pps
10Gbps Forwarding Rate: 14881000pps
Transmission Mode: Store and Forward
MAC Address Space: 16K
Buffer Space: 12Mb
Backplane Bandwidth: 208G
Maximum Frame Length: 9216B
Host Unicast Routing Table: 1024 (IPv4), 512 (IPv6)
Network Segment Unicast Routing Table: 512 (IPv4/IPv6)

4.5 Power Requirements

Input Voltage: 110/220VAC (88264VAC)/50-60Hz or 110/220VDC (88264VDC)
This device uses single power input and can choose dual power redundant input.

4.6 Power Consumption

UT-63424G-16GP8GB-4XGP-BNA:
Idle Power: 14.5W
Full Load Power: 39W (Combo port as Fiber port)
UT-63424G-16GT8GB-4XGP-BNA:
Idle Power: 10.3W
Full Load Power: 24W (Combo port as Fiber port)

—2—

4.7 Mechanical Characteristics

Enclosure: IP40 protection installation
Weight: 3.5kg
Mounting method: rack-mount installation

4.8 Mechanical Dimensions

Dimensions (W H D): 440mm 44mm 315mm

4.9 Operating Environment

Operating temperature: -40 C ~75 C
Storage temperature: -40 C 85 C
Humidity: 095% (non-condensing)

4.10 Industry Standards

EMI:
FCC Part 15, CISPR (EN55022) class A
EMS:
IEC(EN)61000-4-2(ESD)
IEC(EN)61000-4-3(RS)
IEC(EN)61000-4-4(EFT)
IEC(EN)61000-4-5(Surge)
IEC(EN)61000-4-6(CS)
IEC(EN)61000-4-8
IEC 60068-2-27(Shock)
IEC 60068-2-32(Freefall)

Interface Definition

5.1 10/100/1000Base-T Ethernet Interface
This series of switches provide 10/100/1000Base-T ports that support cable MDI/MDI-X auto recognition. In use, the switch can be connected to other Ethernet terminal devices via network cables (straight or cross) through the switch port. Please refer to the pin arrangement order of the shielded twisted pair port using Category 5e according to the following figure.
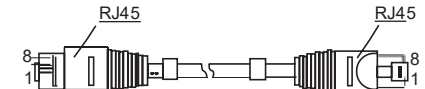

Ethernet cable

The RJ45 port supports automatic MDI/MDI-X operation and can be connected to a PC or server using a straight-through cable, or to other switches or hubs. In a straight-through (MDI) cable, pins 1, 2, 3, 4, 5, 6, 7, and 8 are connected in corresponding order. For MDI X ports on switches or hubs, a crossover cable is used: 1→3, 2→6, 3→1, 6→2, 4→7, 5→8, 7→4, 8→5. The pin definitions for 10/100Base-T (X) are shown in the following table:

Pin No.	MDI Signal	MDI-X Signal
1	TX+	RX+
2	TX-	RX-
3	RX+	TX+
6	RX-	TX-
4、5、7、8	-	-

1000Base-T pin map:

| Pin No.	MDI Signal	MDI-X Signal
1	BI_DA+/TX+	BI_DB+/RX+
2	BI_DA-/TX-	BI_DB- RX-
3	BI_DB+/RX+	BI_DA+/TX+
4	BI_DC+/-	BI_DD+/-
5	BI_DC-/-	BI_DD-/-
6	BI_DB-/RX-	BI_DA-/TX-
7	BI_DD+/-	BI_DC+/-
8	BI_DD-/-	BI_DC-/-

— 3 —
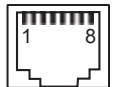
Note: "TX±" stands for transmit data ±, "RX±" stands for receive data ±, and "-" means unused.

5.2 1000Base-X Fiber Optic Port
This series of switches provides 1000Base-X fiber optic ports. When using an electrical port, the switch can be connected to other Ethernet terminal equipment via fiber optic jumper cables.

5.2.1 Classification of Fiber Optic Jumper Cables
According to the transmission mode of light in fiber optic cables, they can be classified into multimode fiber optic cables and single-mode fiber optic cables. The center glass core of a multimode fiber optic cable is relatively thick (50 or 62.5μm) and can transmit various modes of light. However, the intermodal dispersion is relatively large, which limits the frequency of transmission of digital signals. Therefore, the distance of transmission for multimode fiber optic cables is relatively short (usually only a few kilometers). The center glass core of a single-mode fiber optic cable is very thin (the core diameter is generally 9 or 10μm) and can only transmit one mode of light. Therefore, the intermodal dispersion is very small, which is suitable for long-distance communication. In general, cables with orange jackets are multimode, while those with yellow jackets are single-mode.

5.2.2 Use of Equipment with Fiber Optic Jumper Cables
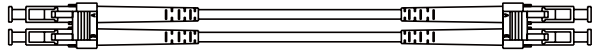
LC interface to LC interface fiber optic patch cord

Note: Please do not bend the fiber optic patch cord during use.

6. LED Indicator

Indicator	Status	Description
P1~P2	Green on	Power supply is normal
	Green off	Power failure or no power
Network interface	Green on	link connection is normal
	Green flash	Link communication is normal
	Green off	Link not connected or connection failure

(1~28)	Red on	With alarm signal output
ALM	Red off	No alarm signal output
RUN	Green on/off	Equipment abnormality
	Green flash	The device is running normally

Installation Guide

7.1 Installation Precautions
To avoid equipment damage and personal injury due to improper use, please follow the following precautions:
◎ To avoid damage caused by the device falling, please place the device in a stable environment.
◎ When supplying power to the device, pay attention to first confirm the voltage range and polarity of the power supply to avoid damaging the equipment due to incorrect operation.
◎ To reduce the risk of electric shock, ensure that the equipment is well grounded in the working environment.
◎ Never disassemble the device casing at will.
◎ When placing the switch, avoid dusty and electromagnetically strong areas.

7.2 Rack Installation
To install the product on a 1U rack, follow these steps:
Step 1: Check the grounding and stability of the 1U rack. Use screws to fix the mounting ears on both sides of the switch panel.
Step 2: Place the switch on a tray in the cabinet, move the switch to the appropriate position according to the actual situation, and ensure that the switch is in the appropriate position with the 1U rack.
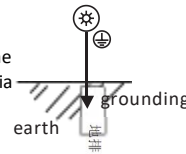Step 3: Use screws to fix the mounting ears on the fixed guide rails at both ends of the 1U rack, ensuring that the mounting ears of the tray in each slot of the cabinet and the switch are securely fixed on the 1U rack.
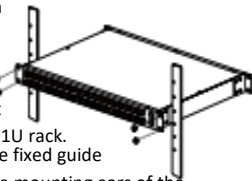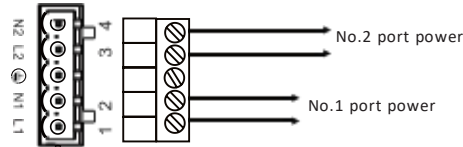
7.3 Grounding
Fix the grounding wire to the grounding screw on the switch, and ensure that the grounding system is reliably connected.

grounding

earth

7.4 Power input
Insert the power cord into the designated position of the 5-core terminal block.

No.2 port power

No.1 port power

7.5 Relay Alarm
The relay alarm terminal has 3 wire connection terminals and provides fault alarm output. NC-COM is normally closed. When the equipment fails, NC-COM will show "short circuit"; in normal state, NC-COM shows "open circuit". NO-COM is normally open. When the equipment fails, NO-COM will show "open circuit"; in normal state, NO-COM shows "short circuit".

NO COM NC

Optical port A   RX   TX   Optical port B
                        TX   RX
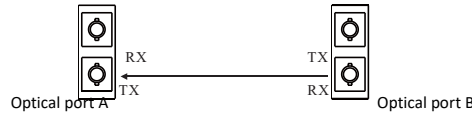
Note: Connect two optical ports A and B with a fiber jumper, connect the TX of optical port A to the RX of optical port B, connect the RX of optical port A to the TX of optical port B, and ensure that the fiber jumper is correct use.

8. Management system login
This series of products provides a serial port-based management system program debugging port. The interface adopts RJ45 interface and is located on the front panel. It can be connected to a PC through the attached cable to update and configure the device program.

DB9 Female   RJ45 crystal
                    1   8

9. Accessories

Name	QTY(UNIT)
Switch	1PCS
Manual	1PCS
Disc	1PCS
Power cable	1PCS(single power) / 2PCS(dual power)
Console line	1PCS
Warranty card	1PCS
Certification	1PCS

10. Accessories

Model	Interface description			
	1000 Base-X	10/100/1000 Base-T	combo	10GBaseX (SFP+)
UT-63424G-16GP8GB-4XGP-BNA	16 port	-	8 port	4 port
UT-63424G-16GT8GB-4XGP-BNA	-	16 port	8 port	4 port

1.The optical interface type for the above products is set to default as SFP slot.
2.The letter "A" in the product model suffix "BNA" indicates a single power supply input of 110/220VAC/DC (88264VAC/DC); while the letter "D" in the suffix "BND" indicates dual power supply input of 110/220V (88264VAC/DC).
3.The above is a partial list of product options. If you cannot find a satisfactory product model during the selection process or have other questions, you can consult our marketing department for more information.