

## Model Name

STI-448XGGGM

ST: Saga Telecom

I: Industrial grade

4: 4 optical Uplink ports

4: 4 optical Downlink ports

8: 8 copper Downlink ports

XG: 10 Gigabit based for optical Uplink ports

G: Gigabit based for optical Downlink ports

G: Gigabit based for copper Downlink ports

M: Managed

It is advised to read specific product description for more information.



## Key Features

1. 8\*10/100/1000Base-T RJ45, 4\*100/1000Base-X SFP, 4\*1G/2.5G/10GBase-X SFP+ slots
2. Redundant power 12-58V input with polarity reverse/over-voltage/over-current protection
3. Support one digital output for relay alarm (terminal block Pin 5/6)
4. Layer 3 features: Supports static and dynamic routing, RIP, OSPF, BGP4, ECMP, VRRP
5. Layer 2 features: VLAN/VLAN Classification/QinQ/STP, RSTP, MSTP  
Port Mirroring/DHCP/Multicast/ACL/IGMP/QoS/LLDP/802.1X/Dying Gasp/SFP DDM  
IPv6 management/Web/SNMP/Telnet/TFTP/Web upgrading
6. Support G.8032 ERPS protocol, recovery time  $\leq 20$ ms
7. Support 6KV surge protection and ESD: Air-15kV, Contact-8kV Protection
8. IP40 fan-less and Din-rail hardware design
9. Operation temperature:  $-40^{\circ}\text{C} \sim +75^{\circ}\text{C}$

With above features, it is an ideal solution for IP Surveillance, wind, electricity, assembly automation, subway PIS, power SCADA, sewage treatment, metallurgy, intelligent transportation, rail transportation, military and other industries.

**Specification**

Product Name	16 port Hybrid Rate Layer 3 Managed Industrial Ethernet Switch
Port	8*10/100/1000Base-T RJ45 4*100/1000Base-X SFP(13-16 ports) 4*1G/2.5G/10GBase-X SFP+(9-12 ports) 1*RJ45 Console port(115200,8,N,1)
Alarm port	One digital output for relay alarm Alarm relay current carry ability: 1A@24VDC
Network Medium	10BASE-T: Cat 3, 4, 5 or above UTP(≤100 meter) 100BASE-TX: Cat 5 or above UTP (≤100 meter) 1000BASE-TX: Cat5 or above UTP (≤100 meter)
Network protocol	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Ethernet IEEE 802.3ab 1000Base-T Ethernet IEEE 802.3z 1000Base-X Ethernet IEEE802.3x Flow Control and Back Pressure IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1Q VLAN ITU-T G.8032 ERPS IEEE 802.1X Port Authentication Network Control IEEE 802.1ab LLDP IEEE 802.3ad LACP
Fiber Option	SFP Pluggable Module(LC) SM: 1310nm/1550nm, 20Km; 1490nm/1550nm, 40~100Km MM: 1310nm, 2Km; 850nm, 500-meter
Switching Capacity	104Gbps
Throughput	154.7Mpps
Packet Buffer	12M
MAC Address	16K
VLAN	4K
Jumbo Frame	10Kbytes
Transfer Mode	Store and forward, forwarding delay<5us
MDX/MIDX	Support
Watchdog	Support
MTBF	200,000 hours
Power Voltage	Input Voltage: DC 12-58V Redundant power input Removable 6 PIN Industrial Terminal Block, pin 5/6 for relay alarm output
Input current	1.6A Max
Total power consumption	Full loading ≤20W
Reverse polarity protection	Support
Over-voltage protection	Support
Over-current protection	Support

Industry Standard	EMI: FCC Part 15B Class A Surge protection of power: IEC 61000-4-5 6KV/4KV(8/20us) Surge protection of Ethernet ports: IEC 61000-4-5 6KV/2KV(10/700us) RS: IEC 61000-4-3 80 MHz-1 GHz: 10 V/m EFT: IEC 61000-4-4 power interface: 4K; Ethernet ports: 2K CS: IEC 61000-4-6 10V ESD: IEC 61000-4-2 Level 4(8K/15K) Shock: IEC 60068-2-27 Free fall: IEC 60068-2-32 Vibration: IEC 60068-2-6
Protection Level	IP40
Installation Method	Din Mounted
Security Certificate	CE/FCC/RoHS
Working Environment	Working Temperature: -40°C~75°C Storage Temperature: -40°C~85°C Relative Humidity: 5%~95%, non-condensing
LED Indicators	<b>PWR(Power indicator), Green Color</b> On: power status is normal Off: power off or power connection failure  <b>S(System indicator), Red Color</b> On: Normal operation Off: Connection failure Blinking: Device initialization  <b>Ethernet Port</b> 1. Green Indicator On: port link up Off: port link down Blinking: data is in normal transmission  2. Yellow Indicator On: port speed is 1000M Off: port speed is 10/100M  <b>Fiber port, Green Color</b> On: port link up Off: port link down Blinking: data is in normal transmission

**L3 Function**

ARP	ARP table aging
DHCP server	
IPv4/IPv6	Static routing
ECMP	Support ECMP (Equal-cost multi-path routing) Support the configuration of ECMP Max next-hop Support capacity balanced configuration
Route policy	IPv4 prefix-list
VRRP	Virtual Router Redundancy Protocol
<b>Routing Protocol Specification</b>	
RIP	RIPv1/v2
OSPFv2	OSPFv2
BGP4	BGP4 BGP Support Routing Recursive ECMP Support to view the number of neighbors and up/down state
IS-IS	IS-ISv4
Routing entry	13K

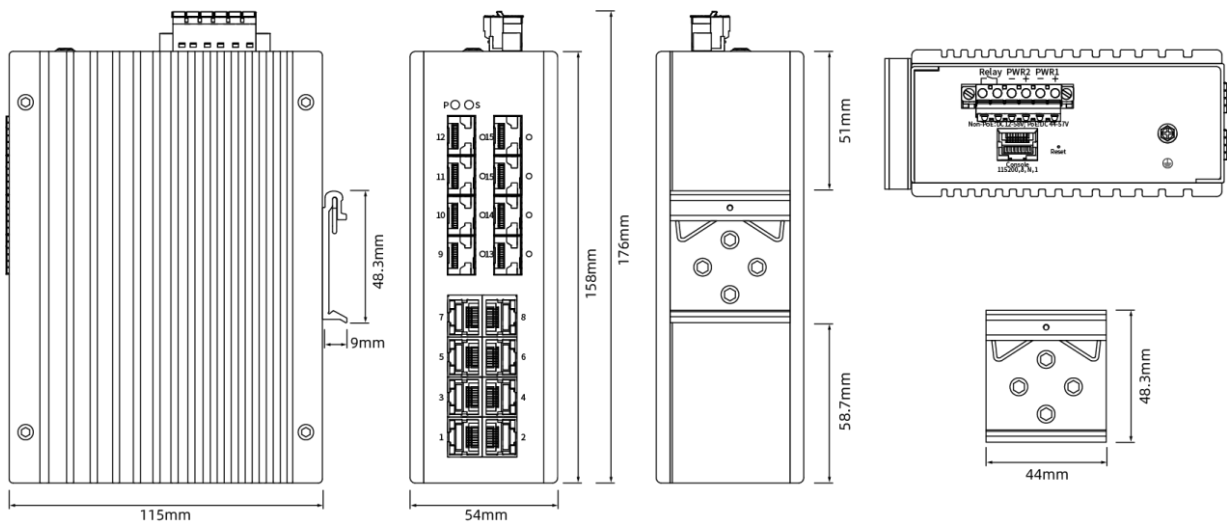
**L2 Function**

Port aggregation	Support GE port aggregation Support 2.5GE aggregation Support 10GE aggregation Support static aggregation Support LACP dynamic aggregation Up to 64 aggregation groups and up to 8 ports per group
Port features	Support IEEE802.3x flow control Support interface counters Support port isolation Port mirroring ( One-to-One, Many-to-One) Support loop detection(Port-based; VLAN-based) Support broadcast storm suppression(broadcast; unknown multicast; unknown unicast)
Mac-address table management	Support static Mac-address management Support dynamic Mac-address Management Support filtering Mac-address Support MAC limit based on port and VLAN Support MAC flapping based on port and VLAN
VLAN	Support access mode Support trunk mode Support hybrid mode
VLAN classification	Mac Based VLAN IP Based VLAN Protocol Based VLAN

GVRP	Normal mode Fixed mode Forbidden mode
QinQ	Port-based QinQ VLAN-based QinQ (VLAN-stacking; VLAN-mapping) Flow-based QinQ
LLDP	LLDP (Link Layer Discovery Protocol)
Ring network protocol	Support IEEE802.1D-STP Support IEEE802.1W-RSTP Support IEEE802.1S-MSTP Support G.8032 ERPS protocol, single ring, sub Ring and major ring Recovery time $\leq 20$ ms
<b>L2 Multicast</b>	
IGMP snooping	Support IGMP snooping
Group address	Support group address
<b>Security Function</b>	
ACL	IP Standard ACL MAC extend ACL IP extend ACL IPv6 ACL
QoS	Support QoS Class, remarking Support SP, WRR queue scheduling Ingress port-based rate-limit Egress port-based rate-limit Support policy-based QoS
802.1x	Port access control Mac-address access control RADIUS server
Port-security	Port-security
IP source guard	IP Port/MAC binding
ARP-check	Support ARP-check and ARP packet filtering for illegal users
Access control	Support Telnet/SSH/HTTP/HTTPS user access control
<b>Management&amp;Maintenance Function</b>	
User Management	Support password protection Support user authorization management
SNMP	Supporting SNMP V1/V2C/V3 version
Web Management	Web Management Support HTTP V1.1 Support HTTPS
CLI management	Console/Telnet command line management
RMON	Support RMON(Remote Monitoring) alarm
Firmware upgrade	Firmware upgrade
Fault Detection	Ping/Tracerout Dying gasp Support optical transceiver DDM function
Cable detection	Support copper port cable detection

NTP	Network Time Protocol
Syslog/Debug	Syslog/Debug Syslog send to two servers
Configuration import/export	Support FTP/TFTP remote import/export
Dual partition management	Support dual partition switching
<b>Application Protocol Function</b>	
DHCP Snooping	DHCP snooping trust port Support remote-id/circuit-id configuration DHCP option-82
DHCP client	Support DHCP client
Telnet server	Support telnet server
Telnet client	Support telnet client
SSH server	Support SSH server
TACACS	Support TACACS(the terminal access controller accesses the control system)
SFlow	Support network traffic analysis
TFTP	Support TFTP Client

**Mechanical Drawing**



## Packing list

- 1pc switch
- 1pc user manual
- 1pc console cable

Shipping box information(**Below information is approximately accurate**)

Product size: 158\*115\*54mm

Inner box size: 230\*180\*70mm

Product weight: 1.2Kg

Packing weight: 1.4Kg

Master box size: 440\*375\*250mm

Packing quantity: 12Pcs

Packing weight: 18Kg

## Product Picture



## FAQ

### ● Leadtime

1. Production time is usually 5~7 working days for standard(non-customized) models (no more than 50pcs).
2. Shipping time is usually 4~7 days by air
3. In total, it takes 10~15 days for a client to receive the order.

### ● Shipment

1. We will send the goods by air(DHL, UPS or FEDEX) or by sea(for bulk order)
2. It is fine to ship purchased items via customer's shipping account or forwarder.

### ● MOQ

1. 1 Pc/Pair(It is NOT free, Saga Telecom do NOT do FREE SAMPLES)
2. It is fine to have sample testing before bulk order, but 1 Pc/Pair is ONLY about sample testing.
3. When testing proves fine, MOQ is 20pcs(discussion is required if it is about smaller quantity).

### ● Warranty

1. 1 year for commercial models(STC series) and 3 years for industrial models(STI series)
2. Please kindly refer to the "Warranty Policy" for more information.
3. Technical assistance is always available

### ● Payment

1. T/T transfer and PayPal, FULL AMOUNT BEFORE SHIPMENT.
2. It is fine to pay 50% first and another 50% before shipment for bulk order.
3. It is fine to be paid via customer's forwarder(this is usually about RMB payment).

### ● Transaction cost

1. It is standard charge 25usd for EACH T/T transfer whatever the invoice value is.
2. It is 5usd for every 100usd to PayPal a/c, this ratio is standard charge by PayPal

### ● RMA

1. Please contact us ASAP once there is any problem(package or usage)with the supplied products.
2. For every 100pcs, there will be 2 extra free units(2% RMA) against immediate warranty coverage.
3. This rule stands for all Saga Telecom models and even there is not an after-sales issue.

(1) If it is about missing/faulty parts in the packing box.

Please simply use the extra units for the replacement and let us know this problem(we will improve).

(2) If it is about usage problem.

Saga Telecom will provide technical support and send new units when necessary.

### ● OEM

1. Supported, but discussion is required if it is about complex requirements.
2. Below are usual OEM services available.
  - (1) Show client's logo/model on the device/label/management interface...
  - (2) Use client's packing box
  - (3) Design client's product PVC sticker
  - (4) Customize some parts of a model like rear panel/power input terminal block...

Please know that there might be extra cost for OEM services.



## After-sales support

Warranty comes in effect from the date of delivery.

If something is wrong with the package or usage, please let us know asap.

### Case 1, package problem

Any faulty/missing parts in the packing box, Saga telecom will help do the replacement or refund.

### Case 2, usage problem

The standard and most effective procedures(get a feedback form from us) are as below

1, describe what happened, examples as below

- When this problem occurred
- What you did to adjust it like restart the device or change new accessories
- How you use this device like outdoor use for connecting some IP cameras

With this information, Saga telecom could quickly know what is going on and do trouble-shooting

2, provide as many actual photos/video as possible

Wrong connection or improper use may occur.

In this case, photos and videos are helpful and efficient.

3, prepare necessary and relevant accessories such as SFP module/network cable/patch-cord...

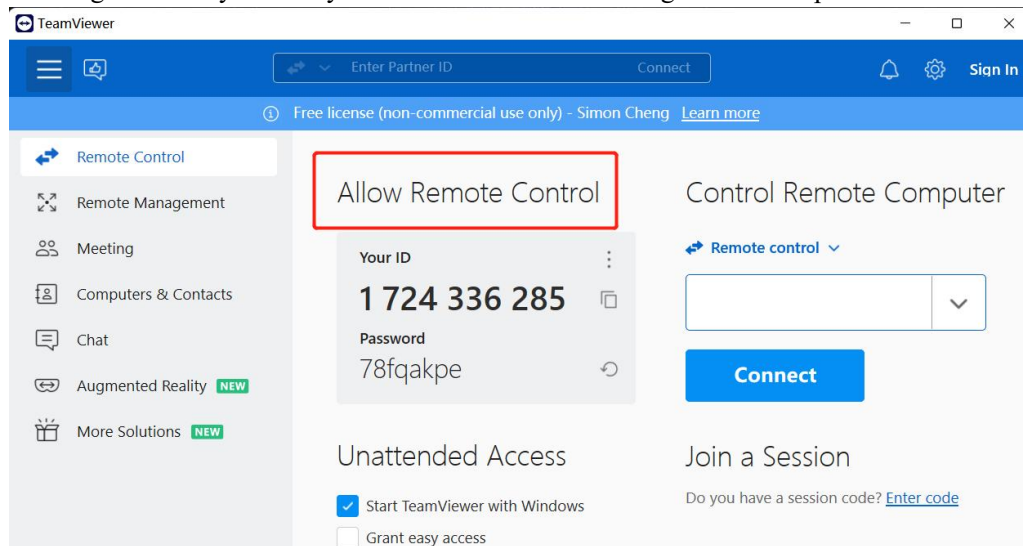
An example is, in a linear network connection, if one SFP module fails, the whole system might have a transmission problem.

The solution would be as simple as replacing a new workable SFP module.

With in-hand accessories, sometimes it is easy to fix the problem.

4, get ready for online meeting

Saga telecom might remotely control your PC to do trouble-shooting with the help of Teamviewer.



For more information, please talk with us or visit [www.sagatelecom.com.cn](http://www.sagatelecom.com.cn)