

## iTS12GP

Intelligent 12 Port Managed PoE Gigabit Card Type Ethernet Switch  
NEMA TS 2 and IEEE 802.3az Energy-Efficient Ethernet compliant



### Product Overview

The iTS12GP is a managed card type 12 port PoE Gigabit Ethernet switch with 8 x 10/100/1000 Base-T(X) PoE (Power over Ethernet) ports and 4 x 100/1000Base-X SFP ports.

The iTS12GP provides redundancy support through functions such as MSTP (RSTP/STP compatible) assuring protection of all mission critical network applications. The switch supports 8 ports PoE fully compliant with IEEE802.3at standard, providing up to 30 Watts per port, PoE on/off scheduled configuration & PoE alive check and auto reboot functions. The iTS12GP can be managed via the Web UI, iManage Software Suite, Telnet /SSH, and CLI.

IEEE 802.3az Energy-Efficient Ethernet allows decrease of power consumption by 50% or more.

The switch is made of IP-40 galvanized steel and has a wide operating temperature range from -40°C to +85°C, which is suitable for the harshest of environments without the use of fans.

# Features and Benefits

Table 1. Features

FEATURE	
SUPPORTS	<ul style="list-style-type: none"> <li>• MSTP and RSTP/STP compatible</li> <li>• LLDP (Link Layer Discovery Protocol) and Modbus TCP</li> <li>• 802.1Q VLAN Network Management</li> <li>• HTTPS and SSH</li> <li>• SMTP client</li> <li>• IPv6</li> <li>• NTPv4 - Network Time Protocol Version 4*</li> <li>• TLS Version 1.2</li> <li>• MRP - Media Redundancy Protocol</li> </ul>
SUPPORTS IEEE 802.3AZ ENERGY-EFFICIENT ETHERNET TECHNOLOGY	
IGMP V2 / V3 (IGMP SNOOPING)	
SNMP V1 / V2C / V3	
ACL, RADIUS, AND TACACS+	
9.6K BYTES JUMBO FRAME	
MULTIPLE ALARM NOTIFICATION METHODS	
CONFIGURABLE BY WEB BROWSER, TELNET, CONSOLE(CLI), IMANAGE SOFTWARE RUNNING ON WINDOWS 2010 NT / 2000 / XP / 2003 / VISTA/7	

\* The NTPv4 version will be delivered to the customer by request.

\*\* MRP implementation is based on IEC 62439 Ed. 1.0

## PRODUCT SPECIFICATIONS

Table 2. Technical Specification

DESCRIPTION	SPECIFICATION
10/100/1000BASE-T(X) RJ45 POE PORTS RJ45 AUTO MDI/MDIX	8
100/1000BASE-X SFP	4
RS-232 SERIAL CONSOLE PORT	RS-232 in RJ45 connector with console cable: 115200 bps, 8, N, 1
WARNING / MONITORING SYSTEM	3 alarm warning methods for system events supported: <ul style="list-style-type: none"> <li>• SYSLOG with server / client structure; recording and viewing events in theSystem Event Log</li> <li>• SMTP</li> <li>• Email</li> </ul> Event selection per port
TECHNOLOGY	
MAC TABLE	8K
PRIORITY QUEUES	8
PROCESSING	Store-and-Forward
BUFFER SIZE	4Mbit
SWITCH PROPERTIES	Switching latency: 7 $\mu$ s Switching bandwidth: 24 Gbps Max. Number of Available VLANs: 4095 VLAN ID Range: VID 1 to 4094 IGMP multicast groups: 256 per each VLAN Port rate limiting: User Defined
JUMBO FRAME	9.6K

# Features and Benefits

## TECHNOLOGY

### SECURITY FEATURES

- STP/RSTP/MSTP
- Device Binding and Remote Control Security
- Access Control List (ACL) for every port
- Authentication, Authorization and Accounting (AAA)
- RADIUS Authentication management
- Port based network access control (NAS) 802.1x
- QoS for achieving efficient bandwidth utilization
- Private VLAN with Port Isolation Configuration
- VLAN (802.1 Q) for segregation and securing network traffic
- SNMPv3 authentication and privacy encryption
- HTTPS / SSH v2 enhanced network security
- Web and CLI authentication and authorization

### SOFTWARE FEATURES

- Web or CLI based Management (Console or Telnet / SSH v2)
- Redundancy— STP/RSTP/MSTP and Fast Recovery
- DHCP Server / Relay
- VLAN (802.1Q) for segregating and securing network traffic
- Supports SNMPv1/v2/v3
- Traffic Prioritization—Storm Control and Quality of Service (QoS) including DSCP-Based QoS Ingress Port Classification
- Multicast traffic—IGMP Snooping (IGMP v1/v2 / v3) and unregistered IPMCv4 Flooding
- Warnings (Syslog, SMTP, and email)
- Monitoring and Diagnostics—MAC Table and Port Statistics (ports monitoring including for SFP ports, system information, issuing PING packets for troubleshooting IP connectivity issues)
- SNTP for synchronizing of clocks over network

### NETWORK REDUNDANCY

- RSTP (IEEE 802.1 D/w)
- MSTP (RSTP/ STP compatible)
- Fast Recovery and Dual Port Recovery

## POWER REQUIREMENTS

### POWER INPUT

12-48 VDC (Opr)

### POWER TERMINAL

PCB Golden Finger

### POWER CONSUMPTION

< 40 W

### OVERLOAD PROTECTION

10 A

### REVERSE CONNECTION PROTECTION

Supported

### REDUNDANCY PROTECTION

Not supported

## PHYSICAL CHARACTERISTICS

### ENCLOSURE

IP-40 Galvanized Steel

### DIMENSIONS (W X D X H)

56.6 (W) x 114.5 (H) x 205.3 (D) mm

### WEIGHT (G)

~790 g

# Features and Benefits

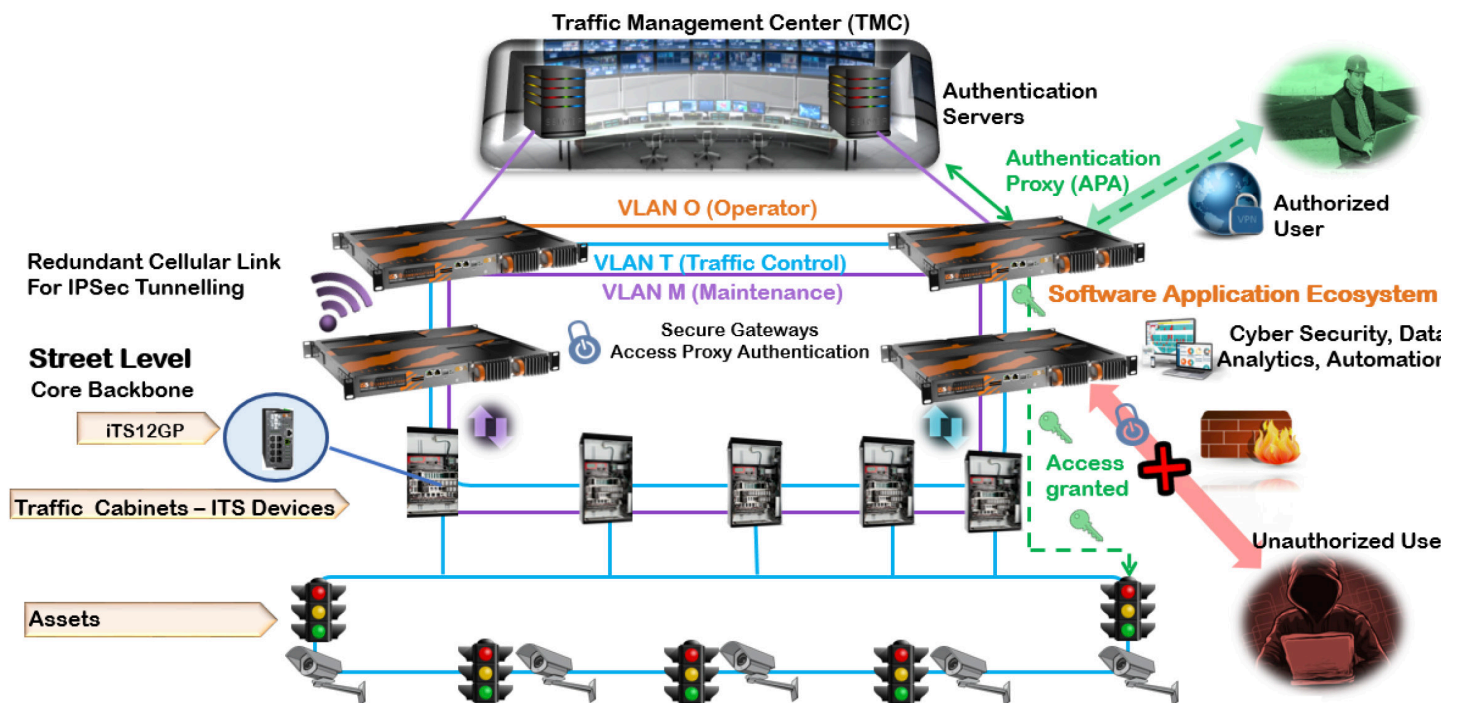
Table 3. Compliance Specification

TYPE	STANDARDS
ELECTROMAGNETIC EMISSIONS	CISPR 22, EN 55011, FCC Part 15B Class A; EN 55022, EN 55024(CE EMC), FCC, EN 61000-6-2, EN 61000-6-4, IEC61000-3-2, IEC 61000-3-3
ELECTROMAGNETIC IMMUNITY	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
SAFETY STANDARDS	EN60950-1
OPERATING ENVIRONMENT	-40°C to +85°C (-40° to 185°F) (no fans) EN 60068-2-21
STORAGE ENVIRONMENT	-40°C to +85oC (-40° to 185°F) EN 60068-2-14
OPERATING HUMIDITY	5% to 95% Non-condensing EN 60068-2-30
SHOCK	IEC60068-2-27
FREE FALL	IEC60068-2-32
VIBRATION	IEC60068-2-6
WARRANTY	5 years, (extendable option with additional terms)

Table 4. Standards and Management

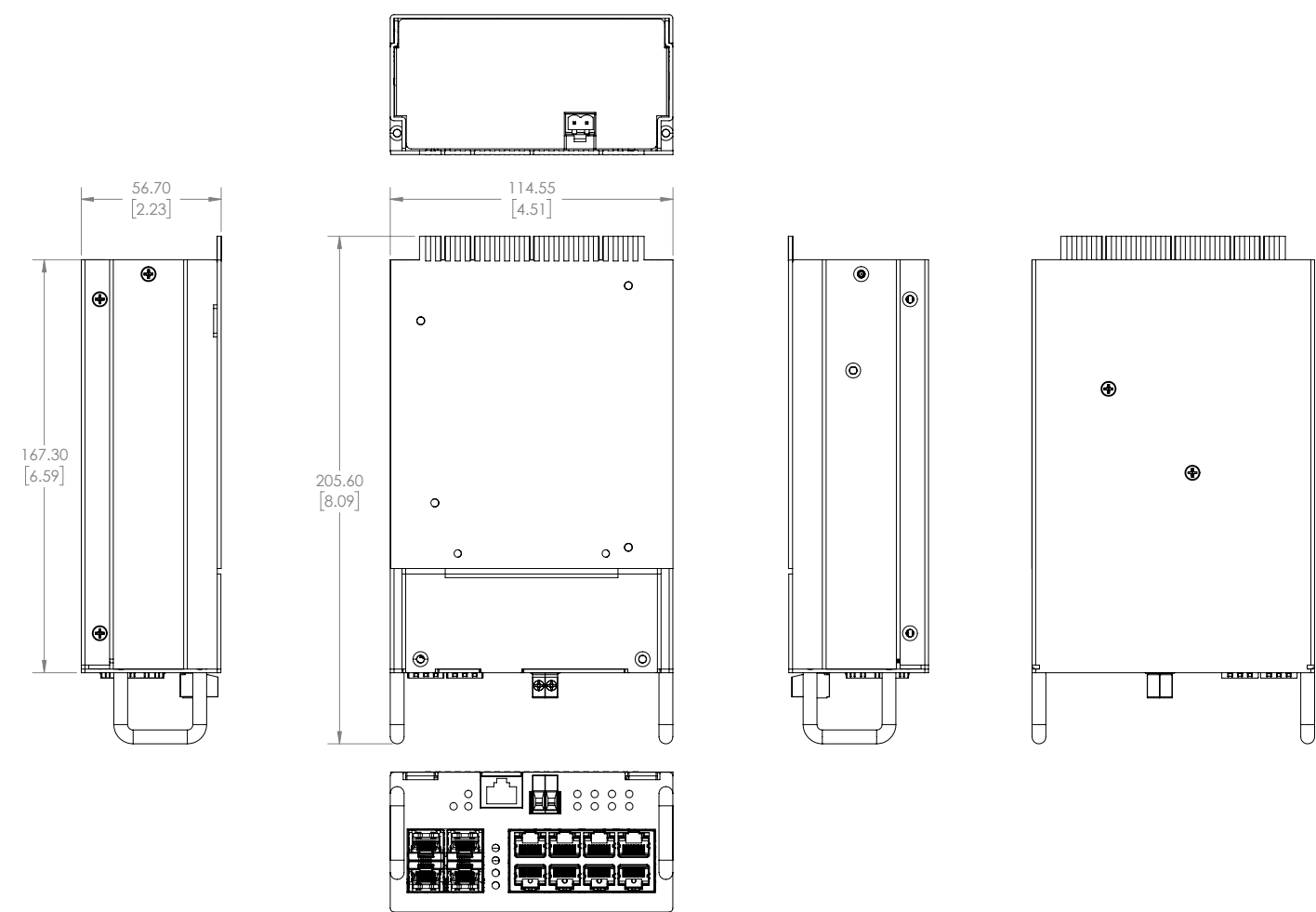
DESCRIPTION		SPECIFICATION		
IEEE STANDARDS	IEEE 802.3 for 10Base-T			
	IEEE 802.3u for 100Base-TX and 100Base-FX			
	IEEE 802.3ab for 1000Base-T			
	IEEE 802.3z for 1000Base-X			
	IEEE 802.3x for Flow control			
	IEEE 802.3ad for LACP (Link Aggregation Control Protocol)			
	IEEE 802.3af PoE (Class 4 PDs (Powered devices) limited to 15.4W )			
	IEEE 802.3at PoE+ (30W at the Power sourcing equipment (PSE) (up to 25.50 W at a class 4 PD)			
	IEEE 802.3az Energy Efficient Ethernet			
	IEEE 802.1W Rapid Spanning Tree Protocol (RSTP)			
	IEEE 802.1Q – 2014 Bridged Networks			
	IEEE 802.1X-2010 Port Based Network Access Control			
	IEEE 802.1AB – 2016 Station and Media Access Connectivity discovery (LLDP)			
	RFC COMPLIANCE	<ul style="list-style-type: none"><li>• RFC 768: UDP</li><li>• RFC 783: TFTP</li><li>• RFC 791: IPv4</li><li>• RFC 792: ICMP</li><li>• RFC 793: TCP</li><li>• RFC 854: Telnet</li><li>• RFC 959: FTP</li><li>• RFC 1157: SNMPv1</li></ul>	<ul style="list-style-type: none"><li>• RFC 1901,1902-1907 SNMPv2</li><li>• RFC 2273-2275: SNMPv3</li><li>• RFC 2571: SNMP Management</li><li>• RFC 1166: IP Addresses</li><li>• RFC 1643: Ethernet InterfaceMIB</li><li>• RFC 2068: HTTP</li><li>• RFC 2990 QoS</li></ul>	<ul style="list-style-type: none"><li>• RFC 2131, 2132: DHCP</li><li>• RFC 2236: IGMP v2</li><li>• RFC 3376: IGMP v3</li><li>• RFC 2474: DiffServPrecedence</li><li>• RFC 3046: DHCP Relay AgentInformation Option</li><li>• RFC 3580: 802.1x RADIUS</li><li>• RFC 4250-4252 SSH Protocol</li></ul>

## Cyber Security for intelligent transportation system (ITS) application



# Dimensions

All dimensions are shown in millimeters [inches].



## SUPPORTED SFPs FOR ITS12GP

ORDER CODE	DESCRIPTION	PORTS 9-12
SFP100-MM-550	SFP 100Mbps Multimode LC Transceiver 550m, 850nm, -40°C to +85°C	•
SFP100-MM-2	SFP 100Mbps Multimode LC Transceiver 2km, 1310nm, -40°C to +85°C	•
SFP100-SM-20	SFP 100Mbps Singlemode LC Transceiver 20km, 1310nm, -40°C to +85°C	•
SFP100-SM-40	SFP 100Mbps Singlemode LC Transceiver 40km, 1300nm, -40°C to +85°C	•
SFP100-SM-100	SFP 100Mbps Singlemode LC Transceiver 100km, 1550nm, -40°C to +85°C	•
SFP100-SM-120	SFP 100Mbps Singlemode LC Transceiver 120km, 1550nm, -40°C to +85°C	•
SFP1000-TX	SFP 1000Mbps TX RJ45 Transceiver 100m, -40°C to +85°C	•
SFP1000-MM-550	SFP 1Gbps Multimode LC Transceiver 550m, 850nm, -40°C to +85°C	•
SFP1000-MM-2	SFP 1Gbps Multimode LC Transceiver 2km, 1310nm, -40°C to +85°C	•
SFP1000-SM-10	SFP 1Gbps Singlemode LC Transceiver 10km, 1310nm, -40°C to +85°C	•
SFP1000-SM-20	SFP 1Gbps Singlemode LC Transceiver 20km, 1310nm, -40°C to +85°C	•
SFP1000-SM-40	SFP 1Gbps Singlemode LC Transceiver 40km, 1310nm, -40°C to +85°C	•
SFP1000-SM-60	SFP 1Gbps Singlemode LC Transceiver 60km, 1550nm, -40°C to +85°C	•
SFP1000-SM-80	SFP 1Gbps Singlemode LC Transceiver 80km, 1550nm, -40°C to +85°C	•

## Ordering Information

BASE	ETHERNET PORT 1-8*	ETHERNET PORT 9-12	MOD	DESCRIPTION
ITS12GP	8PGRJ45	4GSFP		
ITS12GP				Core assembly and packaging
	8PGRJ45			8 X 10/100/1000Base-T(X) RJ45 PoE
		4GSFP		4 X 100/1000Base-X SFP (Blank no optical transceivers**)
			C1	Conformal Coating

\* PoE available when external power supply connected only.

\*\* See Accessories List for SFP Transceiver Pricing.

### ITS12GP Sample Order Code

ITS12GP-8PGRJ45-4GSFP

Description: NEMA TS2 12 Port Managed PoE Gigabit Card Type Ethernet Switch, (Ethernet Port 1-8\*) - 8 X 10/100/1000Base-T(X) RJ45 PoE; (Ethernet Port 9-12) - 4 X 100/1000Base-X SFP (Blank no optical transceivers\*\*).

The same unit, may be ordered with conformal coating by appending 'C1' to the order code, for example: ITS12GP-8PGRJ45-4GSFP-C1

Description: NEMA TS2 12 Port Managed PoE Gigabit Card Type Ethernet Switch, (Ethernet Port 1-8\*) - 8 X 10/100/1000Base-T(X) RJ45 PoE; (Ethernet Port 9-12) - 4 X 100/1000Base-X SFP (Blank no optical transceivers\*\*). This system will be conformal coated.



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