5YEAR EXCLUSIVE WARRANTY

Outstanding 802.3at PoE+ Solution for Hardened Environment
Select your new network engine!

As a leading provider of network equipment for Industrial Communication, Benchu group understands the importance of providing stability and safety that can adapt to your business' needs, whether in the Safe City, Traffic,Mining,industrial automatic,Power or energy.
The IES7511-8PGE2GF-4BT-DC with IP40 protection class and meet EMC industrial level 4 requirements. The product supports wide power input voltage range of 48-54VDC redundant power with reverse polarity protection and wide operating temperature range of -40 to the +85°C.

The switches can be easily installed on a DIN rail as well as in distribution boxes. In addition to its compact size for space-saving installation, each product has passed a 100% burn-in test to ensure its quality high-reliability transmission.
supports SSHv2, TLS and SSL protocols to provide strong protection against advanced threats. It includes a range of cybersecurity features such as DHCP Snooping, IP Source Guard, ARP Inspection Protection, 802.1x port-based and MAC-based network access control, RADIUS and TACACS+ user accounts management, SNMPv3 authentication, and so on to complement it as an all-security solution.

The IES7211-8PGE2GF-4BT-DC is equipped with 4 Gigabit Ethernet ports are integrated with an 802.3bt PoE++ up to 90W injector function, 4 Gigabit Ethernet ports are integrated with an 802.3at PoE+ up to 30W injector function.
Support 2 Ports 1G SFP Uplink， provides greater bandwidth and powerful processing capacity. It offers a maximum 2Gbps uplink bandwidth through the two 1Gbps SFP ports. In addition, the administrator can flexibly choose the suitable (155M/1.25G) SFP transceiver according to the transmission distance or the transmission speed required to extend the network efficiently.

Highlights

Benchu group IES7511-8PGE2GF-4BT-DC L2 industrial managed UPoE+ Switch, featuring 4-10/100/1000BASE-T 802.3bt PoE++ ports with each port powering up to 90 watts, 4-10/100/1000BASE-T 802.3at PoE+ ports with each port powering up to 30 watts, and 2-1.25GBASE-X fiber ports ,with IP40 rugged metal case, can be installed in any difficult environment. It provides user-friendly yet advanced IPv6/IPv4 management interfaces, abundant L2/L4 switching functions, and advanced ITU-G.8032 ERPS Ring technology to improve the rapid self-recovery capability and Benchu group intelligent PoE functions for controlling the PoE outdoor IP surveillance and wireless network applications. It is able to operate reliably, stably and quietly in the temperature range from -40 to 85 degrees C.

Key features include:

• Advanced per port PoE controls for remote power management of PoE connected devices including operation scheduling (e.g. Wireless APs, IP security cameras, LED lighting, secure access door locks, IoT devices…)

• Complies with IEEE 802.3af/at/bt Power over Ethernet up to 90 watts for UPoE+ port

• Advanced QoS (Quality of Service) for traffic prioritization including port-based, 802.1p and L2/L3/L4 DSCP-based

• Layer 3 static routing (IPv4 and IPv6) for inter VLAN local routing

• L2/L3/L4 access control lists (ACLs) for granular network access control including 802.1x port authentication

• STP, RSTP, MSTP, and ERPS ring network protocols are designed for building high reliability and maintaining network stability.

• IGMP Snooping and Querier for multicast optimization

• Dynamic ARP for increased security targeting a class of Man in the Middle attack

• Rate limiting and priority queuing for better bandwidth allocation

• Port mirroring for network monitoring

• Energy Efficient Ethernet (IEEE 802.3az) for maximum power savings

• SNMP v1, v2c,V3 and RMON remote monitoring

Build a future-proof network with BENCHU:

• Solid performance with non-blocking architecture, 8K MAC addresses, 100 shared (ingress) ACLs and 256 Multicast groups

• Comprehensive IPv6 supporting management, QoS, ACL and routing, ensuring investment protection and a smooth migration to IPv6-based network

• Support IEEE802.3bt PoE++ on 1-4 ports，PoE power up to 90 watts for each PoE port

• Support IEEE802.3at PoE+ support on 5-8 ports，PoE power up to 30 watts for each PoE port

• 2 Dedicated SFPs, not only providing fiber uplinks, but also uplink redundancy and failover, improving reliability and availability for the network

802.3bt PoE++ 90-watt for high power consuming network PD

• Adopts the IEEE 802.bt PoE++ standard technology, it is capable to source up to 90 watts of power by using all the four pairs of standard Cat5e/6 Ethernet cabling to deliver power and full-speed data to each remote PoE compliant powered device (PD). Its power capability is three times more than that of the conventional 802.3at PoE+ and it is an ideal solution for those high power consuming network PDs.

BENCHU Quality and Reliability

• Low power consumption, fanless.

• Contact Discharge 8KV DC；Air Discharge 15KV DC

• -40 to 85 degrees operating temperature

• IP40 Industrial design with dual power input

• Din Rail mounting installation

• CE, FCC, RoHS.

• The user-friendly panel can show the device status through the LED indicator of PWR, Link.

Easy operation and maintenance management

• Web management, CLI command line (Console, Telnet), SNMP (V1/V2).

• HTTPS, and SSHV1/V2.

• RMON, system log, LLDP, and port traffic statistics.

• CPU monitoring, memory monitoring, Ping test, and cable diagnose.

Hardware at a Glance

| FRONT						REAR	SIDE
Model Name	Form-Factor	10/100/1000Base-T RJ45 ports	1GBASE-X Fiber SFP Ports	PoE++ 802.3bt Ports(90W)	PoE+ 802.3at Ports(30W)	Power Supply	Fans
IES7511-8PGE2GF-4BT-DC	Din Rail mounting	8	2	4 PoE++	4 PoE+	Dual power input DC48~56V	Fanless

Software at a Glance

LAYER 2+ / LAYER 3 LITE FEATURES							
Management	IPv4/IPv6 ACL and QoS	IPv4/IPv6 Multicast Filtering	G.8032 ERPS STP/RSTP/MSTP	IEEE (802.3az) Energy Efficient Ethernet	VLANs	Convergence	IPv4 & IPv6 Static Routing
Web Browser-based GUI (HTTP/HTTPS), PC-Based Smart Control Center Utility (SCC) , RMON, SNMP	L2, L3, L4, ingress	IGMP and MLD Snooping	Yes	Yes	Static Dynamic, Voice, MAC, Protocol-based	LLDP-MED, RADIUS, 802.1X	Yes

Performance at a Glance

| Model Name	Packet buffer	Chip	ACLs	MAC Address Table ARP Table VLANs	Fabric	Latency (Max Connection Speed)	Routes (IPv4 & IPv6)	Multicast IGMP Group
IES7511-8PGE2GF-4BT-DC	2.1MB	Realtek	100 shared	8K MAC 256 ARP 4K VLANs QinQ	24Gbps 14.88Mpps line-rate	1G Copper: <3.35µs 1G Fiber: <3.1µs	IPv4: 100 IPv6: 100	256

Target Application

Network Convergence
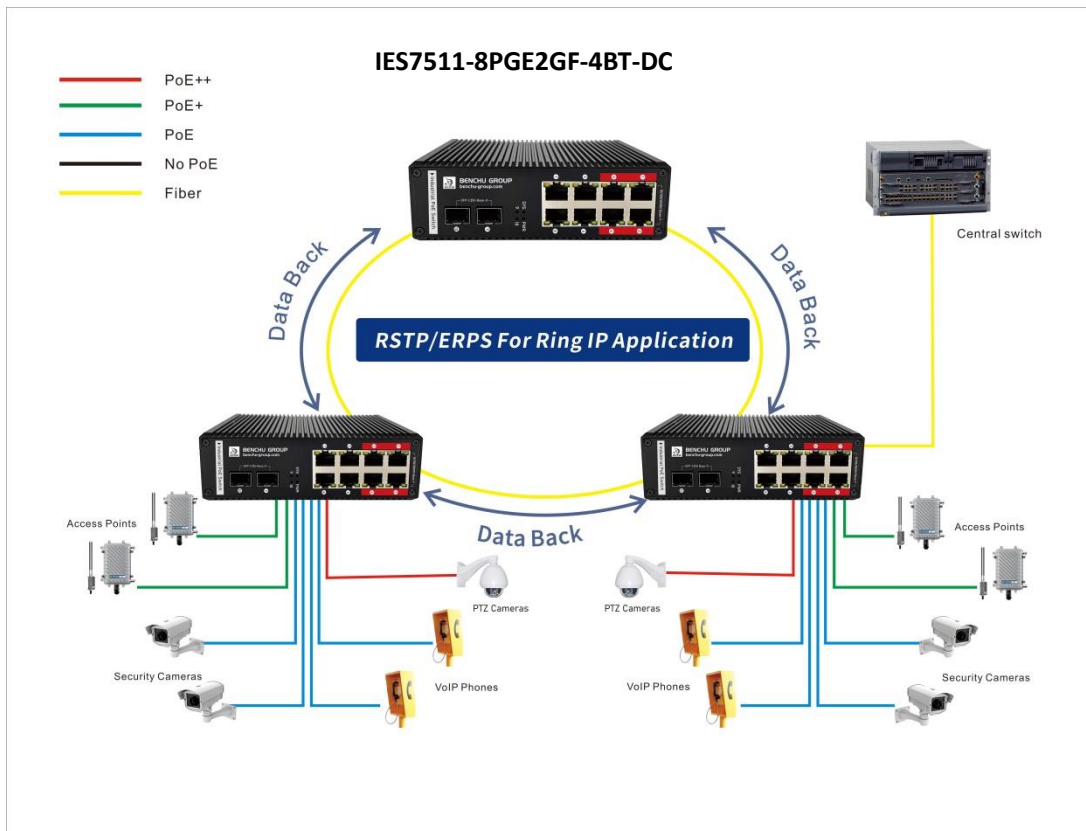
Across various industries—particularly in industrial parks, automation, power, public safety, and energy sectors—the adoption of IoT devices such as VoIP phones, IP security cameras, video-over-IP endpoints, proximity sensors, LED lighting, and secure access door locks is rapidly increasing. The close concentration of these devices demands industrial network switches with PoE capabilities, allowing network managers to connect IoT devices using a single cable for both data and power. Advanced devices like Wave 2 802.11ac wireless access points and HD surveillance cameras with features like night vision and motion tracking require PoE++ (802.3bt) power. Additionally, harsh environments necessitate industrial-grade network switches with enhanced durability, further increasing the power requirements for Industrial PoE switches.

BENCHU GROUP'S IES7511-8PGE2GF-4BT-DC industrial managed UPoE+ switches support dense deployments of these modern high-power PoE+ devices. They offer powerful Layer 2 features for IPv4 and IPv6 with enhanced performance and a focus on usability within Industrial environments:

- Provide 4-10/100/1000M 802.3af/at/bt PoE+ ports up to 90W per ports
- Provide 4-10/100/1000M 802.3af/at PoE+ ports up to 30W per ports
- 2 dedicated 1Gb SFP fiber ports for aggregation to the network core
- ERPS(G.8032) STP/FSTP/MSTP for Ring network and Link protection
- Layer 3 static routing (IPv4 and IPv6) for inter VLAN local routing
- IGMP Snooping, IGMP Querier and IGMP Fast Leave for multicast optimization
- Include VLANs, PoE scheduling, ACLs, DiffServ, LACP, MVR and DHCP
- Easy-to-use Web browser-based management GUI — No need for an IT expert
- Excellent features such as fast response, resisting vibration, enduring dust, adapting for the hard environment, etc.
- Limited Lifetime* Warranty, Tech support

Structure Diagrams

IES7511-8PGE2GF-4BT-DC
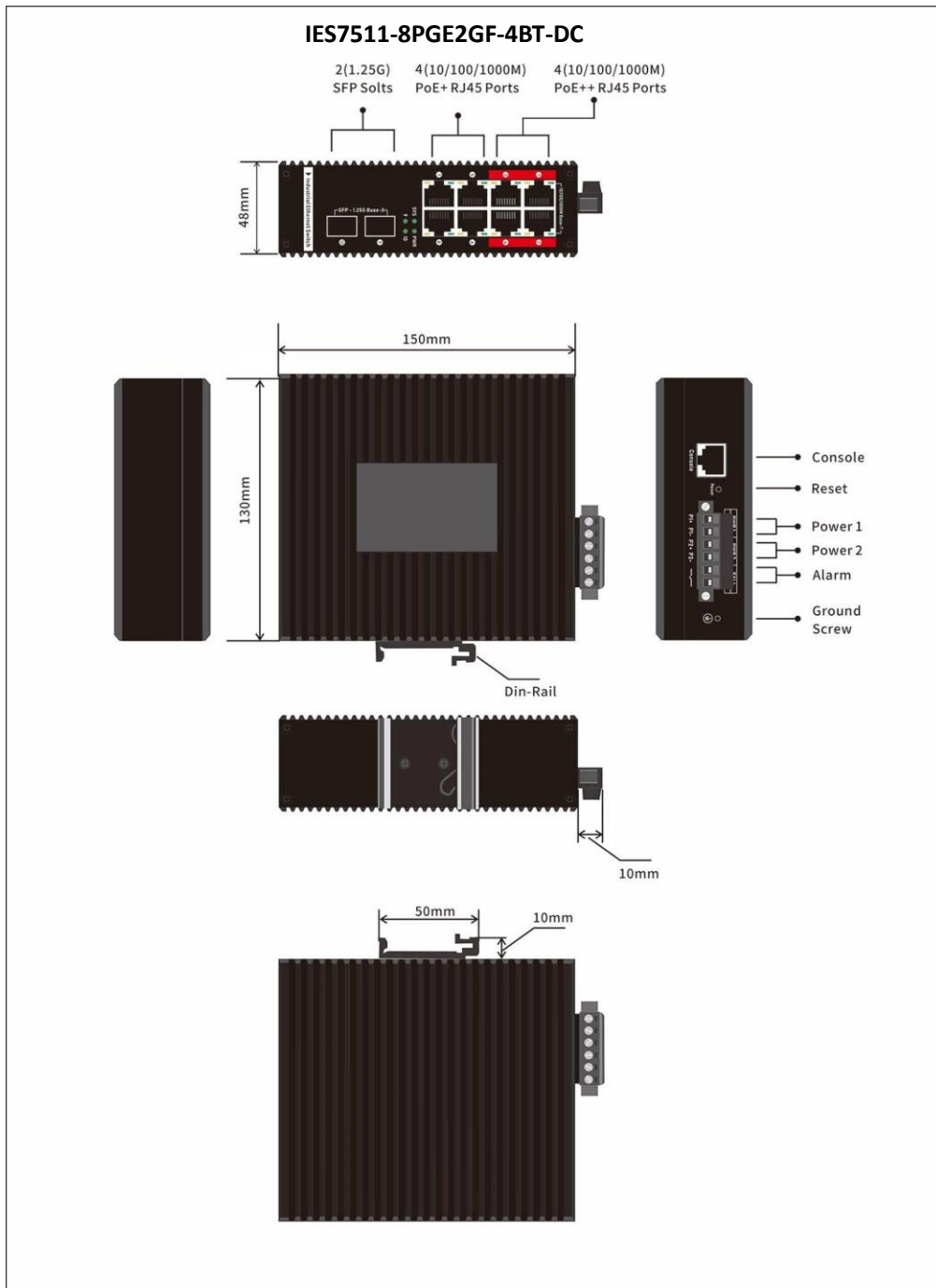
Technical Specifications	IES7511-8PGE2GF-4BT-DC
10M/100M/1G RJ-45 copper ports	8
PoE / PoE+/PoE++ ports (90W per port)	4 PoE++
PoE / PoE+ ports (30W per port)	4 PoE+
1G SFP (fiber) ports	2
Console Port (For config)	Yes
Performance Specification	
Chip	Realtek
Packet buffer memory (Dynamically shared across only used ports)	2.1 MB
Forwarding modes	Store-and-forward
Bandwidth	24 Gbps
Priority queues	8
MAC address database size (48-bit MAC ad-dresses)	8K
Multicast groups	256
Number of IPv4 static routes	100
Number of IPv6 static routes	100
Number of VLANs	4094
Number of VLANs(Open QinQ)	16,760,836(4094*4094)
Number of ARP cache entries	256 ARP
Number of DHCP snooping bindings	256
Access Control Lists (ACLs)	100 shared for MAC, IP and IPv6 ACLs (ingress)
Packet forwarding rate (64 byte packet size) (Mpps)	14.88Mpps
Jumbo frame support (bytes)	Up to 12K packet size
Mean Time Between Failures (MTBF) @ 25°C	162,125 hours
100M Copper Latency (64-byte; 1518-byte; 9216-byte frames)	8.532µs; 8.613µs; 8.712µs
1G Copper Latency (64-byte; 1518-byte; 9216-byte frames)	3.435µs; 3.541µs; 3.643µs
1G Fiber Latency (64-byte; 1518-byte; 9216-byte frames)	2.993µs; 3.112µs; 3.183µs

L2 Services - VLANs	IES7511-8PGE2GF-4BT-DC
IEEE 802.1Q VLAN tagging	Yes
QinQ VLAN tagging	Yes
IP-based VLANs	Yes
MAC-based VLANs	Yes
Protocol-based VLAN	Yes
Voice VLAN	Yes
VLAN mapping	Yes
L2 Services - Availability	
Broadcast, multicast, unknown unicast storm control	Yes
IEEE 802.3ad - LAGs (LACP)	Yes
IEEE 802.3x (full duplex and flow control)	Yes
IEEE 802.1D Spanning Tree Protocol	Yes
IEEE 802.1w Rapid Spanning Tree Protocol	Yes
IEEE 802.1s Multiple Spanning Tree Protocol	Yes
ITU-TG.8032 ERPS	Yes, Recovery time < 50ms
L2 Services - Multicast Filtering	
IGMP snooping (v1, v2 and v3)	Yes
MLD snooping support (v1 and v2)	Yes
IGMP snooping querier (v2)	Yes
MLD snooping querier (v1)	Yes
Multicast VLAN Registration (MVR)	Yes
PoE Scheduling	
Open or close PoE Port	Yes
Power and current display	Yes
POE Time scheduling	Yes
L3 Services - Routing	
IPv4 static routing	Yes
IPv6 static routing	Yes
VLAN routing	Yes

Link Aggregation	IES7511-8PGE2GF-4BT-DC
IEEE 802.3ad - LAGs (LACP)	Yes
Manual LAG	Yes
# of LAGs / # of members in each LAG	8 LAGs with max 8 members in each LAG
Network Monitoring and Discovery Services	
802.1ab LLDP	Yes
SNMP	v1, v2c, v3
RMON group 1,2,3,9	Yes
Network Security	
IEEE 802.1x	Yes
RADIUS accounting	Yes
Access Control Lists (ACLs)	Yes
IP-based ACLs (IPv4 and IPv6)	L2 / L3 / L4
MAC-based ACLs	Yes
TCP/UDP-based ACLs	Yes
Control MAC # static entries	48
Port-based security by locked MAC addresses	Yes
Dynamic ARP inspection	Yes
Broadcast, unicast, multicast DoS protection	Yes
DoS attacks prevention	Yes
Network storm protection, DoS	Yes
Broadcast, unicast, multicast DoS protection	Yes
DoS attacks prevention	Yes
Quality of Service (QoS)	
Port-based rate limiting	Yes ingress and egress
Port-based QoS	Yes
Support for IPv6 fields	Yes
DiffServ QoS	Yes ingress
IEEE 802.1p COS	Yes
Destination MAC and IP	Yes
IPv4 and v6 DSCP	Yes
TCP/UDP-based	Yes
Weighted Round Robin (WRR)	Yes
Strict priority queue technology	Yes

IEEE Network Protocols	**IES7511-8PGE2GF-4BT-DC**
• IEEE 802.3 Ethernet	• IEEE 802.3x Full-Duplex Flow Control
• IEEE 802.3u 100BASE-T	• IEEE 802.1Q VLAN Tagging
• IEEE 802.3ab 1000BASE-T	• IEEE 802.1AB LLDP with ANSI/TIA-1057 (LLDP-MED)
• IEEE 802.3z Gigabit Ethernet 1000BASE-SX/LX	• IEEE 802.1p Class of Service
• IEEE 802.3af PoE	• IEEE 802.1D Spanning Tree (STP)
• IEEE 802.3at PoE+	• IEEE 802.1s Multiple Spanning Tree (MSTP)
• IEEE 802.3bt UPoE+	• IEEE 802.1w Rapid Spanning Tree (RSTP)
• IEEE 802.3az Energy Efficient Ethernet (EEE)	• ITU-TG.8032 Ethernet Ring Protection Switching (ERPS)
• IEEE 802.3ad Trunking (LACP)	• IEEE 802.1x RADIUS Network Access Control

Management, Monitoring & Troubleshooting	
Password management	Yes
Admin access control via RADIUS and TACACS+	Yes
IPv6 management	Yes
SNMP v1/v2c/v3	Yes
RMON group 1,2,3,9	Yes
Port mirroring	Yes ingress and egress
Many-to-one port mirroring	Yes
Cable test utility	Yes
TLS/HTTPS Web-based access (version)	Yes (v1.2)
File transfers (uploads, downloads)	TFTP / HTTP
HTTP upload/download (firmware)	Yes
Syslog (RFC 3164)	Yes
USB port for firmware and config upload/download	Yes
LEDs	Yes
Per port	Speed, Link, Activity; or PoE in different mode
Per device	Power, system

Physical Specifications	
Dimensions	150 x 130 x 48 mm (5.91 x 5.12 x 1.89 in)
Weight	0.95 kg (1.98 lb)
Power Requirements	DC 48~56V Dual power input
Max power (worst case, all ports used, full PoE, line-rate traffic) (Watts)	12W
Idle power consumption (all ports link-down standby) (Watts)	8W
Energy Efficient Ethernet (EEE) IEEE 802.3az	Yes (deactivated by default)
Fan	Fanless

Environmental Specifications	IES7511-8PGE2GF-4BT-DC
Operating	
Operating Temperature	-40° to 85°C (-40° to 185°F)
Humidity	95% maximum relative humidity (RH), non-condensing
Altitude	10,000 ft (3,000 m) maximum
Storage	
Storage Temperature	-40° to 85°C (-40° to 185°F)
Humidity (relative)	95% maximum relative humidity, non-condensing
Altitude	10,000 ft (3,000 m) maximum
Executive Standard & Protection	
Lightning Protection	
IEC61000-4-3 (RS)	10V/m (80~1000MHz)
FCC Part 15/CISPR22 (EN55022)	Class B
CE	EN55032,EN55035
IEC61000-6-2	Common Industrial Standard
IEC61000-4-9 (Pulsed magnet field)	1000A/m
IEC61000-4-10 (Damped oscillation)	30A/m, 1MHz
IEC61000-4-12/18 (Shockwave)	CM 2.5kV, DM 1kV
IEC61000-4-4(EFT)	Power cable:±4kV, Data cable: ±2kV
IEC61000-4-16(Common-mode transmission)	30V, 300V, 1s
IEC61000-4-2 (ESD)	±8kV contact discharge, ±15kV air discharge
IEC61000-4-6 (Radio frequency transmission)	10V(150kHz~80MHz)
IEC61000-4-8 (Power frequency magnetic field)	100A/m, 1000A/m, 1s-3s
IEC61000-4-5 (Surge): Power cable	CM±4kV/ DM±2kV, Data cable: ±4kV
Mechanical Properties	
IEC60068-2-6	Anti Vibration
IEC60068-2-32	Free Fall
IEC60068-2-27	Anti Shock

Electromagnetic Emissions and Immunity

Certifications	CE mark, commercial
	FCC Part 15 Class A, VCCI Class A
	Class A EN 55022 (CISPR 22) Class A
	Class A C-Tick
	EN 55024
	CCC
	47 CFR FCC Part 15, SubpartB, Class A ICES-003: 2016 Issue 6, Class A
	ANSI C63.4:2014
	IEC 60950-1:2005 (ed.2)+A1:2009+A2:2013 AN/NZS CISPR 22:2009+A1:2010 CLASS A

Safety

Certifications	CB mark, commercial
	CSA certified (CSA 22.2 #950)
	EN 60950-1: 2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013 IEC 60950-1:2005 (ed.2)+A1:2009+A2:2013
	AN/NZS 60950.1:2015
	CCC (China Compulsory Certificate)

Warranty and Support

Hardware Limited Warranty	Limited Lifetime*
Technical Support via Phone and Email*	Limited Lifetime*
Limited Lifetime* 24x7 Online Chat Technical Support	Limited Lifetime*

Package Contents

All models	Industrial Managed PoE Switch
	Brackets and screws for DIN-Rail mounting, which are already installed in the industrial switch
	Rubber protection caps, which are already installed in the SFP sockets Installation guide
	User's manual

IES7511-8PGE2GF-4BT-DC