



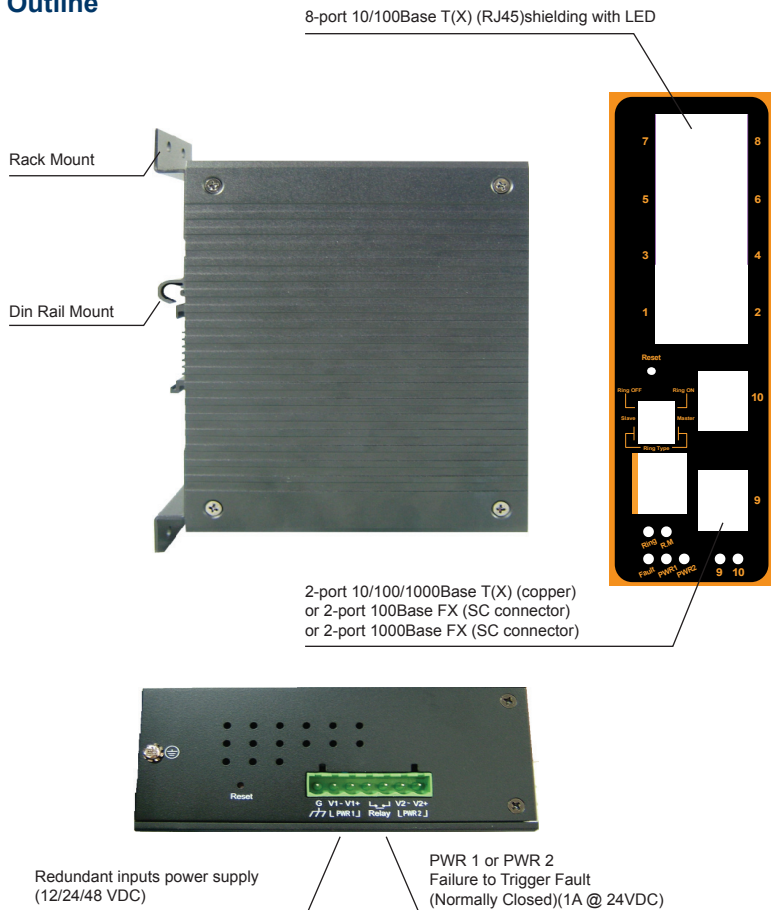
Industrial Managed Ethernet Switch

■ ■ **EH7510**
RoHS compliant

The Atop Harsh Environment Series EH7510 is a highly reliable and fault-tolerant Industrial 10-port managed Ethernet Switch. It equips 8-port 10/100Base T(X) RJ45 ports and 2-port 10/100/1000Base T(X)/FX Gigabit capacity that supports IEEE 802.3/802.3u/802.3x with 10/100M, IEEE 802.3ab/802.3z with 1000M, full/half duplex, and MDI/MDI-X auto-sensing. With its high performance switching device, EH7510 SERIES provides redundant self-recovery mechanism in less than 20ms on full load which allows you to scheme a reliable Ethernet network to build a redundant ring topology as your back-up solution. With a Multifunctional web dashboard, EH7510 SERIES offers intelligent features such as Quality of service (QoS), Virtual LAN (VLAN), IGMP, Port mirroring and Port-based security. The EH7510 SERIES is a plug-and-play solution for your Industrial Ethernet applications.

The EH7510 SERIES is designed for Industrial rugged applications. It equips a 7-pins terminal block to provide dual redundant power inputs with Reverse Polarity Protection and one set relay (NC) which allows field engineers to build up a stand-alone fault alarm system. Its IP-50 housing protection, wide operating temperature of -40 to 80°C and DIN-Rail mounting capacities are liable to do most industrial filed applications.

Outline



- Multiple Reliable Redundant Rings
 - Consolidate Network Association
 - Rapid recovery time from fault (<20ms)
 - Highly compatible capacities with others
- SNMP v1/v2/v3 Supported (with MD5 Authentication and DES encryption)
- RSTP Support
- QoS Traffic Regulation Supported
- IGMP supported (with IGMP Snooping)
- Alarm System Supported (with E-mail Notification)
- IEEE 802.1x (with RADIUS) Supported for Network Access Control
- LACP Supported

General Specifications

Technology

Standards	IEEE 802.3 10BaseT
	IEEE 802.3u 100BaseT(X) and 100Base FX
	IEEE 802.3ab 1000Base-T
	IEEE 802.3z 1000Base-SX/LX
	IEEE 802.1d MAC Bridges standard
	IEEE 802.1d MAC Spanning Tree Protocol
	IEEE 802.1w for Rapid Spanning Tree Protocol
	IEEE 802.1p Class of Service
	IEEE 802.1P The GARP VLAN Registration Protocol
	IEEE 802.1Q VLAN Tagging
	IEEE 802.1D-1998 and IEEE 802.1Q-2005, GARP Multicast Registration Protocol
	IEEE 802.1X Port Based Network Access Control
	IEEE802.3x Flow Control and Back pressure
	IEEE 802.3ad Link Aggregation Control Protocol
	IEEE 802.1AB Station and Media Access Control Connectivity Discovery
	IEEE 1588 Precision Clock Synchronization Protocol for Networked Measurement and Control Systems

Switch Properties

Switching method: Store & Forward
Switching Latency: 4.8 us
Backplane switching capacity: 5.6G
MAC addresses table: 8K with automatic learning and aging
IGMP multicast groups: 256
Per-Port Priority Queues: 4
Packet Buffer Size: 256KB
VLANs: 512 (include DEFAULT VLAN ID=1)
VLAN ID Setting Range: 2 to 4094
Port rate limiting: 64K/128K/256K(up to 100 Mbps or 1000Mbps) resolution

Flow Control

IEEE 802.3x Flow Control and Back-pressure

Processing type

Store-and-Forward

Interface

RJ45 Ports	10/100BaseT(X), Auto MDI/MDI-X
	10/100/1000BaseT(X), Auto MDI/MDI-X (Uplink)
Fiber Ports	100BaseFX ports (SC connector) (Uplink)
	1000BaseFX ports (SC connector) (Uplink)
LED Indicators	LNK/ACT(Steady green-Link up/Blinking-data transmitting & receiving) PWR1(Green), PWR2(Green), Fault(Red)
Console Port	RS-232(RJ45 connector)
DIP Switches	Ring, Master(Ring type: ERPS, iA-Ring, compatible-Ring)

Power Requirements

Dual Inputs Voltage	12/24/48 VDC
Dual Inputs Current	0.6A @ 24VDC
Overload Current Protection	2.2A @ 12VDC
Connection	Removable dual 3-pin Terminal Block for power input
Reverse Polarity Protection	Present
Consumption	14.4W

Physical Characteristics

Housing	IP50 protection (>2.5mm objects, IEC60529), metal case(AL6063T5).
Dimensions (W x H x D)	53.4mm x 145.7mm x 119.9mm (2.10 x 5.74 x 4.72 in)
Weight	Approx 1100 g
Installation	DIN-Rail mount kit, wall mount kit (optional)

Environmental Limits

Operating Temperature	-40 ~ 80°C (-40 ~ 176°F)
Storage Temperature	-40 ~ 85°C (-40 ~ 185°F)
Ambient Relative Humidity	5% to 95% (non-condensing)

Notes: For UL policy the maximum operating temperature is 60°C, and the human body can tolerate maximum temperature is 70°C.

Regulatory Approvals

Safety	UL60950-1, CSA C222, No.60950-1-07, CB
EMI	FCC part 15, CISPR (EN55022) class A
EMS	IEC61000-4-2 (ESD) level 3 IEC61000-4-3 (RS) level 3 IEC61000-4-4 (EFT) level 3 IEC61000-4-5 (Surge) level 2/3 IEC61000-4-6 (CS) level 3
Rail Traffic Application	EN50155 EN50121-4
Shock	MIL-STD-810F
Free Fall	MIL-STD-810F
Vibration	MIL-STD-810F
MTBF	201,976 hrs (23.06 Years) (Data base: MIL-HDBK-217F, GB 25°C)
Warranty	5 years (please visit www.atop.com.tw for more details)

Relay ON-OFF Status

No.	PWR1	PWR2	Fault LED	Relay contact	External Buzzer
1	off	off	off	closed	buzzing
2	off	on	red	closed	buzzing
3	on	off	red	closed	buzzing
4	on	on	off	open	no buzz

4-Pin DIP Switch

DIP 1 and 2 definition

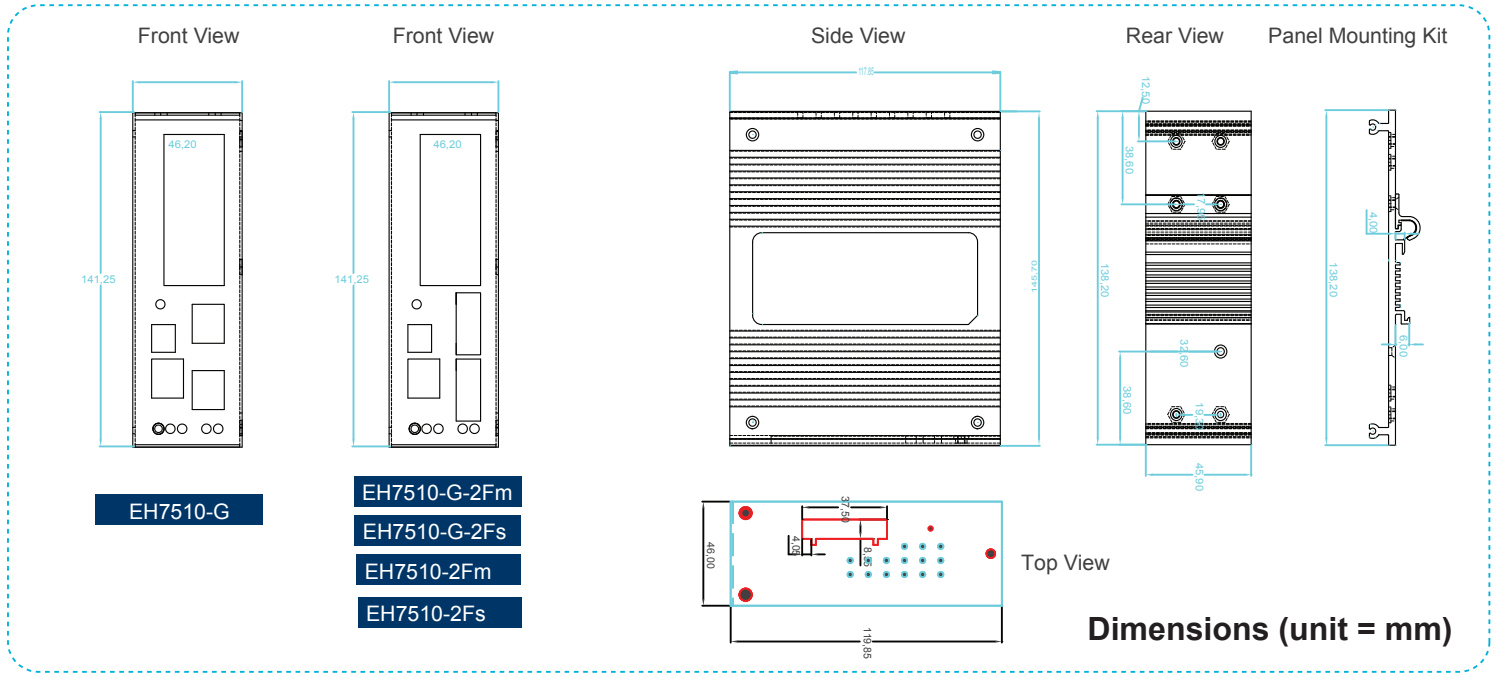
DIP Switch	Off	On
1	Ring is deactivate	Ring is activate
2	Slave	Master

DIP 3 and 4 definition

DIP 3	DIP 4	Ring Type
Off	Off	Select ERPS
Off	On	Select iA-Ring
On	Off	Select Compatible-Ring (only slave mode is supported)

Optical Fiber Specifications						
Speed	Fast Ethernet 100BaseFX			Gigabit Ethernet 1000BaseFX		
Mode	Multimode	Single Mode	Single Mode	Multimode	Single Mode	Single Mode
Connectors	SC	SC	SC	SC	SC	SC
Typical Distance	2 km	15 km	30 km	550 m/300 m	10 km	70 km
Cable Size Core/Cladding	50/125 um 62.5/125 um	9/125 um	9/125 um	50/125 um	9/125 um	9/125 um
Wavelength	1,310 nm	1,310 nm	1,310 nm	850 nm	1310 nm	1550 nm
Max. TX Power	-14 dBm / -14 dBm	0 dBm	5 dBm	-4 dBm	-3 dBm	5 dBm
Min. TX Power	-23.5 dBm / -20 dBm	-20 dBm	0 dBm	-9.5 dBm	-9.5 dBm	-9.5 dBm
RX Sensitivity	-31 dBm	-32 dBm	-36 dBm	-18 dBm	-20 dBm	-24 dBm
Link Budget	7.5 dB / 11 dB	12 dB	36 dB	8.5 dB	10.5 dB	24 dB
Saturation / overload	0 dBm	0 dBm	0 dBm	0 dBm	-3 dBm	-3 dBm
Remark	EH7510-2Fm	EH7510-2Fs	customized	EH7510-G-2Fm	EH7510-G-2Fs	customize

Mechanical



Ordering Information								
Model Name	Port Interface							
Extended Temperature (-40°C to 80°C)	Part Number	10/100BaseT(X)	100BaseFX		1000BaseFX		Gigabit Ethernet	
			Multi Mode, SC Connector	Single Mode, SC Connector	Multi Mode, SC Connector	Single Mode, SC Connector	10/100/1000 BaseT(X)	100/1000 Base SFP
EH7510-G	1P1EH7510G0001G	8	---	---	---	---	2	---
EH7510-G-2Fs	1P1EH7510G2FM1G	8	---	---	---	2	---	---
EH7510-G-2Fm	1P1EH7510G2FS1G	8	---	---	2	---	---	---
EH7510-2Fs	1P1EH75102FM01G	8	---	2	---	---	---	---
EH7510-2Fm	1P1EH75102FS01G	8	2	---	---	---	---	---

Optional Accessories			
US315-12(US-Y)	Y-Type (BT1-10V) power adaptor, 100~240VAC input, 1.25A @ 12VDC output, US plug	AD1120-24F	120W/5A DIN-Rail 24 VDC power supply with universal 100~240VAC/120~370VDC input
USE315-12(EU-Y)	Y-Type (BT1-10V) power adaptor, 100~240VAC input, 1.25A @ 12VDC output, EU plug	AD1120-48F	120W/2.5A DIN-Rail 48 VDC power supply with universal 100~240VAC/120~370VDC input
AD1024-24F	24W/1A DIN-Rail 24 VDC power supply with universal 100~240VAC/120~370VDC input	2ESDP-07P	7-pin 5.08mm Terminal Block with 180° Angle
AD1048-24FS	48W/2A DIN-Rail 24 VDC power supply with universal 100~240VAC/120~370VDC input	CDK-459-Silver	Conductive metal DIN-Rail Kit, Silver
AD1072-24F	72W/3A DIN-Rail 24 VDC power supply with universal 100~240VAC/120~370VDC input	WMK-459-Black	Metal Wall Mount Kit, Black
AD1100-24F	100W/4A DIN-Rail 24 VDC power supply with universal 100~240VAC/120~370VDC input	GDC-90	90mm copper woven grounding cable

Regulatory Approvals and Environmental Type Tests

EMI Immunity Type Tests

Test	Description		Test Levels	Severity Levels
FCC part 15	-	Subpart B	-	class A
EN55022	-	2006+A1:2007	-	class A

EMS Tests

Test	Description		Test Levels	Severity Levels
IEC61000-4-2	ESD	Contact discharge	6 KV, Criterion A	level 3
		Air discharge	8 KV, , Criterion A	level 3
IEC61000-4-3	RS	Enclosure ports	10 V/m (80 - 1000 MHz), Criterion A	level 3
IEC61000-4-4	EFT	Power Line	2 KV, Criterion B	level 3
IEC61000-4-5	Surge	Line to earth	1 KV, Criterion B	level 2
		Power Line	2 KV, Criterion B	level 3
IEC61000-4-6	CS	Line to earth	3 V (0.15 - 80 MHz), Criterion A	level 3
		Power Line	10 V (0.15 - 80 MHz), Criterion A	level 3

Safety Tests

Test	Description		Rating	Severity Levels
UL60950-1	-	2nd Edition, 2007-03-27	12~48V DC, 1.2A	-
CSA C22.2 No.60950-1-07	-	2nd Edition, 2007-03	12~48V DC, 1.2A	-
CB	-	IEC 60950-1:2005 second version	12~48V DC, 1.2A	-

Environmental Type Tests

Test	Description		Test Levels	Severity Levels
MIL-STD-810F	Shock	Impact acceleration & Pluse duration	40g @ 11ms	-
MIL-STD-810F	Freefall	8 corners, 12 edges, 6 faces	122 cm	-
MIL-STD-810F	Vibration	Packaged Random waveform	x: 2.4 Grms y: 1.28 Grms z: 3.85 Grms	-
		Operating Random waveform	x: 0.740 Grms y: 0.204 Grms z: 1.04 Grms	-

Rail Traffic Application

Test	Description		Application	Severity Levels
EN50155	EMC	EN50121-3-2	Railway Application	-
	Environment	EN60068-2-1	Railway Application	-
		EN60068-2-2 EN61373		-
EN50121-4	EMC	-	Railway Application	-

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