



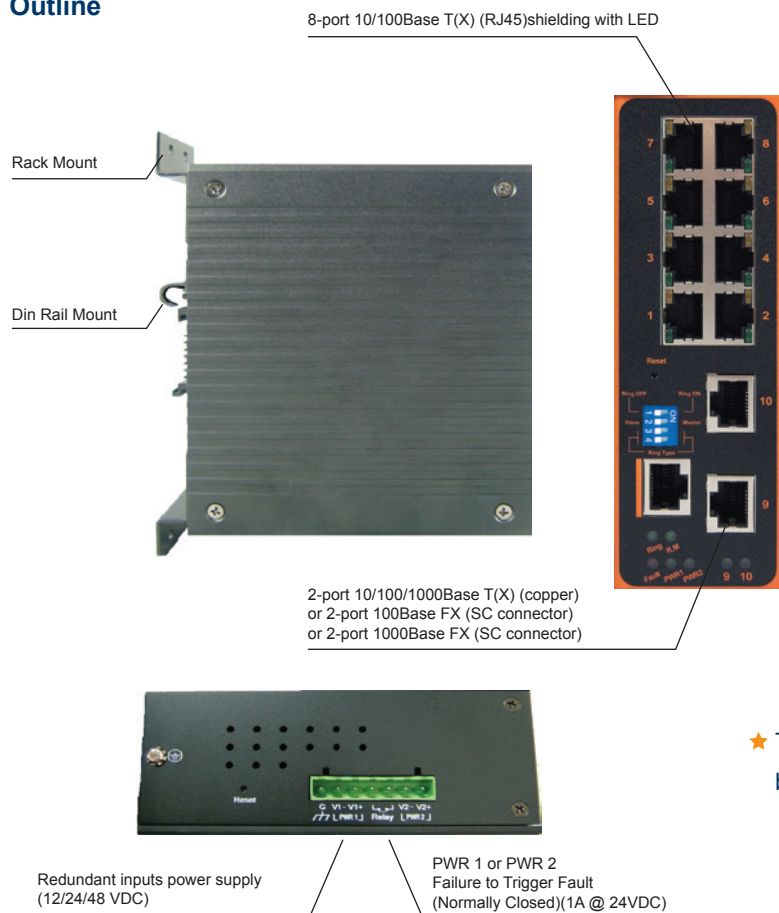
## Industrial Managed Ethernet Switch

■ ■ **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

★ The power input of EH7510 can be placed on either the top side or bottom side before shipment.

General Specifications	
<b>Technology</b>	
<b>Standards</b>	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
<b>Switch Properties</b>	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
<b>Flow Control</b>	IEEE 802.3x Flow Control and Back-pressure
<b>Processing type</b>	Store-and-Forward
<b>Interface</b>	
<b>RJ45 Ports</b>	10/100BaseT(X), Auto MDI/MDI-X 10/100/1000BaseT(X), Auto MDI/MDI-X (Uplink)
<b>Fiber Ports</b>	100BaseFX ports (SC connector) (Uplink) 1000BaseFX ports (SC connector) (Uplink)
<b>LED Indicators</b>	LNK/ACT(Steady green-Link up/Blinking-data transmitting & receiving) PWR1(Green), PWR2(Green), Fault(Red)
<b>Console Port</b>	RS-232(RJ45 connector)
<b>DIP Switches</b>	Ring, Master(Ring type: ERPS, iA-Ring, compatible-Ring)
<b>Power Requirements</b>	
<b>Dual Inputs Voltage</b>	12/24/48 VDC
<b>Dual Inputs Current</b>	0.6A @ 24VDC
<b>Overload Current Protection</b>	2.2A @ 12VDC
<b>Connection</b>	Removable dual 7-pin Terminal Block for power input
<b>Reverse Polarity Protection</b>	Present
<b>Consumption</b>	14.4W
<b>Physical Characteristics</b>	
<b>Housing</b>	IP50 protection (>2.5mm objects, IEC60529), metal case(AL6063T5).
<b>Dimensions (W x H x D)</b>	53.4mm x 145.7mm x 119.9mm (2.10 x 5.74 x 4.72 in)
<b>Weight</b>	Approx 1100 g
<b>Installation</b>	DIN-Rail mount kit, wall mount kit (optional)
<b>Environmental Limits</b>	
<b>Operating Temperature</b>	-40 ~ 80°C (-40 ~ 176°F)
<b>Storage Temperature</b>	-40 ~ 85°C (-40 ~ 185°F)
<b>Ambient Relative Humidity</b>	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.

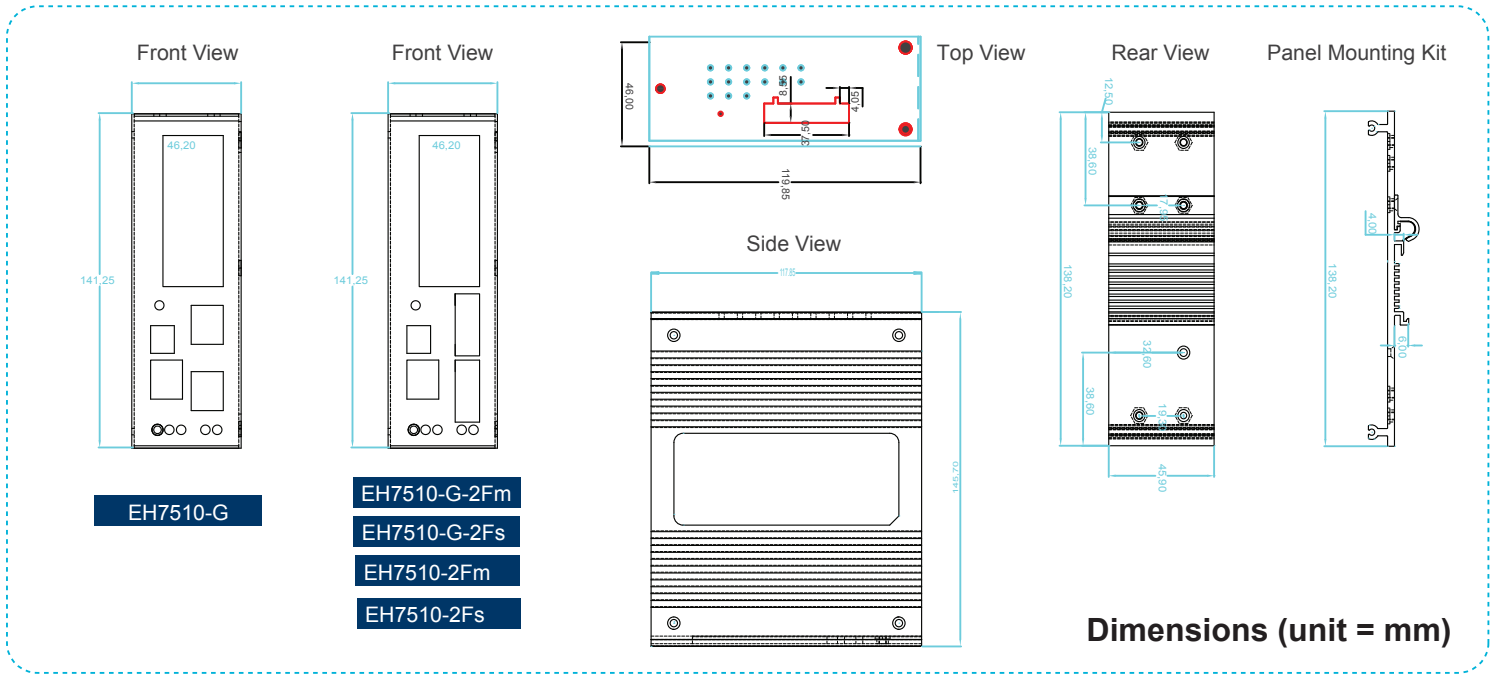
Regulatory Approvals	
<b>Safety</b>	UL60950-1, CSA C222, No.60950-1-07, CB
<b>EMI</b>	FCC part 15, CISPR (EN55022) class A
<b>EMS</b>	IEC61000-4-2 (ESD) level 3 IEC61000-4-3 (RS) level 3 IEC61000-4-4 (EFT) level 3 IEC61000-4-5 (Surge) level 2/3 IEC61000-4-6 (CS) level 3
<b>Rail Traffic Application</b>	EN50155 EN50121-4
<b>Shock</b>	MIL-STD-810F
<b>Free Fall</b>	MIL-STD-810F
<b>Vibration</b>	MIL-STD-810F
<b>MTBF</b>	176,122 hrs (20.11 Years) (Data base: MIL-HDBK-217F, GB 25°C )
<b>Warranty</b>	5 years (please visit <a href="http://www.atop.com.tw">www.atop.com.tw</a> 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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