atop
Technologies

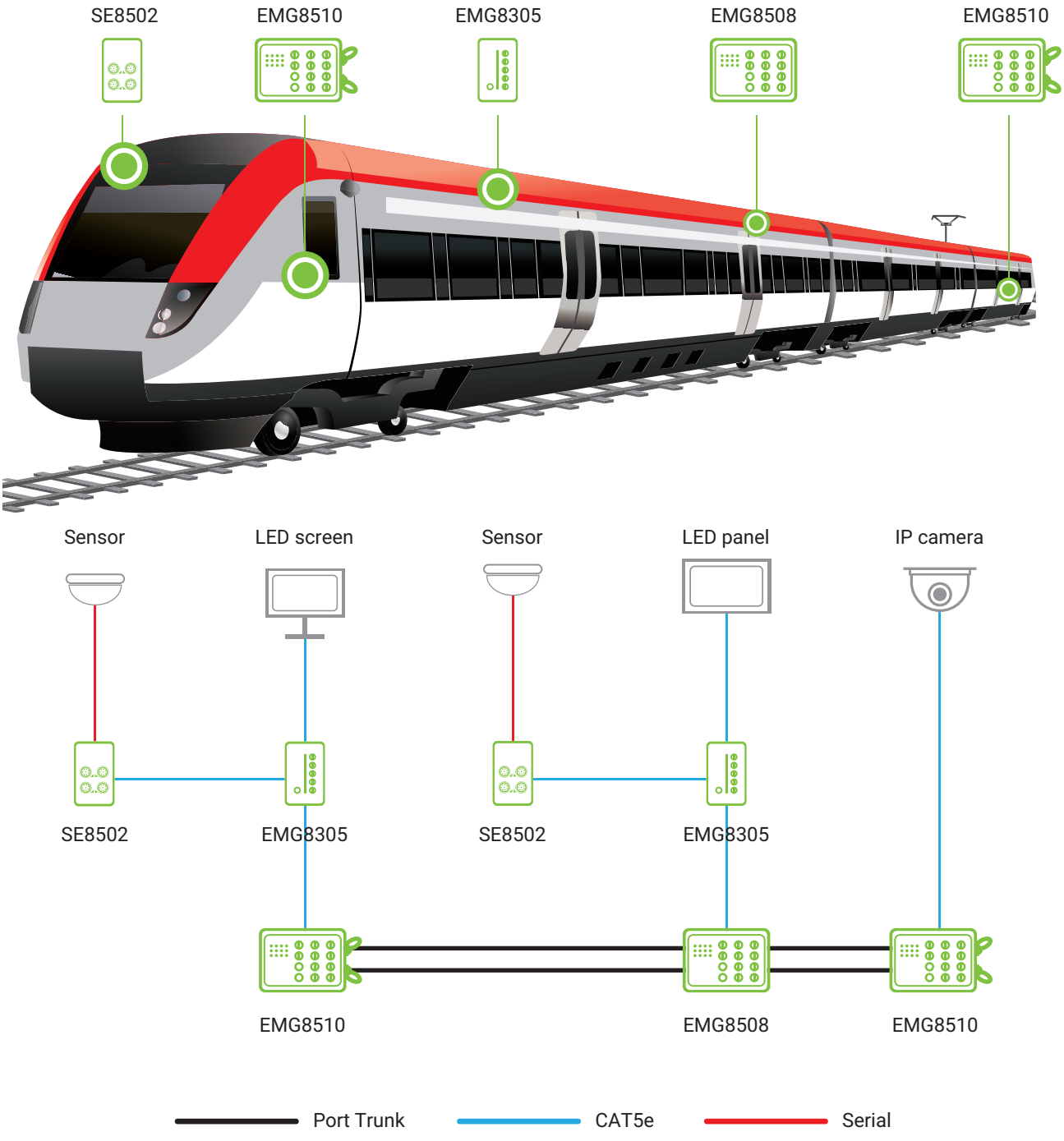
ATOP Railway Rolling Stock & Trackside Solutions

Engineered and manufactured in Taiwan

Rolling Stock Solutions

EN 50155 certified devices for Rolling Stock

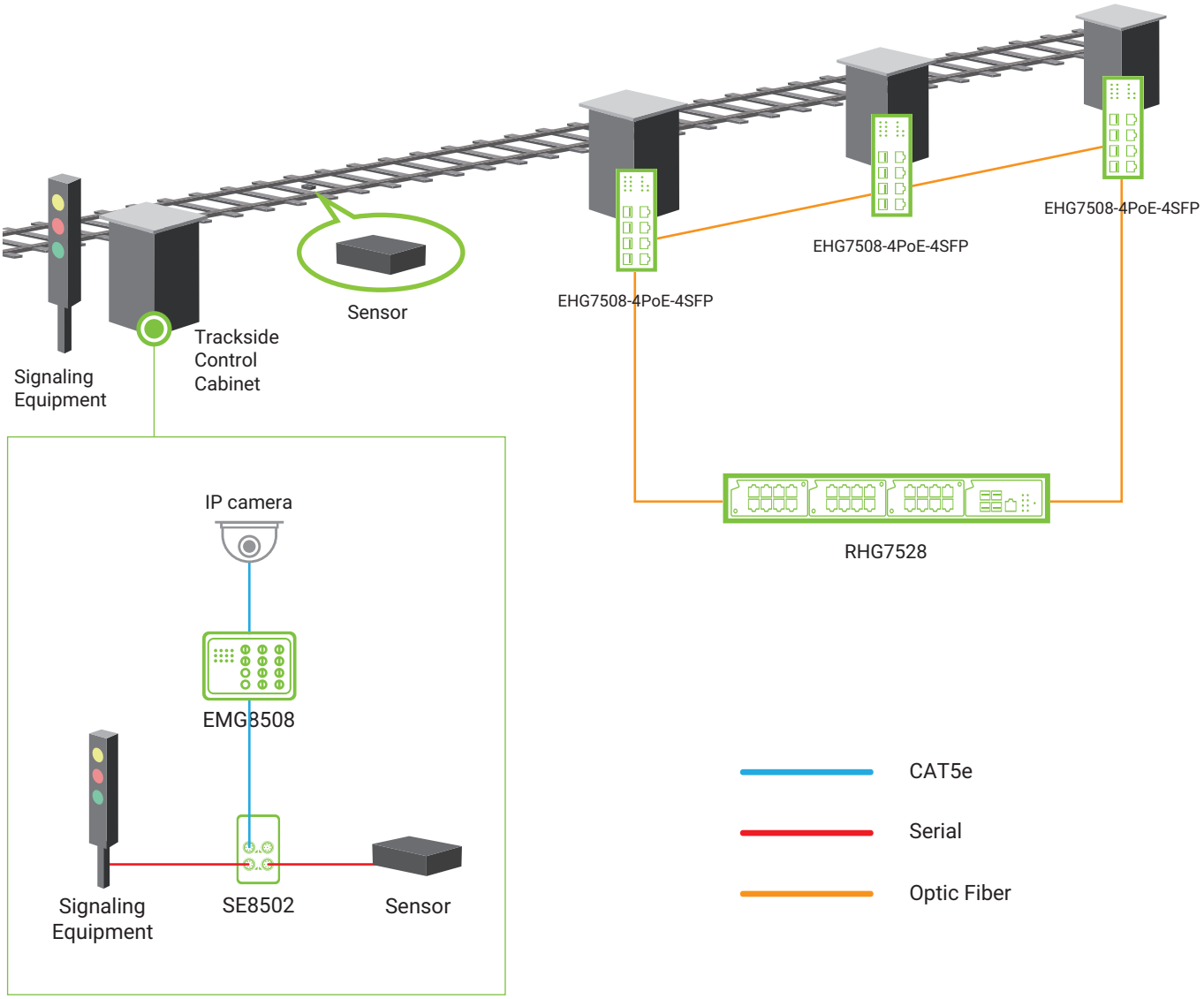
ATOP provides a wide-range of EN50155 & EN45545-2 certified IP67 and IP30 unmanaged and managed switches and serial servers suitable for supporting the challenges in rolling stock deployment. Equipped with M12 connector or RJ45/SFP interface, our devices support Gigabit speeds and Power over Ethernet to build the trains of the future.



Trackside solutions

Ethernet-based solutions for track management and supervision

ATOP's EN50121-4 certified IP67 and IP30 unmanaged and managed switches, serving up to 10G speeds are the perfect choice for building the track-side network of next generation infrastructure. With either IP67 or IP30 protection, our devices can cover the market-specific needs inside the cabinet or exposed to the harshest weather conditions providing PoE power to cameras and other PD devices and offering a redundant fault-tolerant backbone in case of breakdowns.



Focus on...

EMG8508 Highlights

- Fully managed switch
- Ruggedized IP67 aluminum enclosure
- 8x 10/100/1000 BASE-T(X) ports, M12-X coded connector
- Up to 8x 802.3af or 802.3at complaint PoE ports (Max 30W)
- EN50155 for rolling stock equipment, EN50121-4 for track-side, EN45545-2 for fire-protection and UL 61010-2-201 certified
- Redundant power input, DC (12~57V) or High Voltage DC (50~145VDC)
- Works from -40°C~75°C
- 2x Relay outputs, 5-pin M12 A-Coding
- Advanced software features, allowing self-healing topologies in <20 ms

Comparison Chart

Railway-Certified product range

	Serial Server	Unmanaged Switches			
	IP68 				IP67 
General Information					
Model Number	SE8502	EHG7305	EHG7306	EHG7307	EMG8305
Number of ports					
Ethernet ports	1	5	6	7	5
Copper: Fast Ethernet 10/100 BaseT(X)	1 x M12-D	-	-	-	-
Copper: Gigabit 10/100/1000 BaseT(X)	-	5 x RJ45	5 x RJ45	5 x RJ45	5 x M12-A or -X
Fiber: Gigabit 1000Base-X SFP	-	-	-	-	-
Fiber: Gigabit 100/1000Base-X SFP	-	-	1 x SFP	2 x SFP	-
PoE/PoE+ ports	-	Max 4	Max 4	Max 4	-
Serial ports	2 x M12-A	-	-	-	-
Power Supply input					
Power input	9~48V	12~57V (PoE from 45V)	12~57V (PoE from 45V)	12~57V (PoE from 45V)	12~48V
Other options					
Power redundancy	•	•	•	•	•
Relay Output		•	•	•	
Supported Temperatures					
Operations Temperature	-40~75° C	-40~70° C	-40~70° C	-40~70° C	-40~75° C
Storage Temperature	-40~85° C	-40~85° C	-40~85° C	-40~85° C	-40~85° C
Mechanical					
Housing	Metal	Metal	Metal	Metal	Aluminum
Installation	Field-mount	DIN-rail	DIN-rail	DIN-rail	Field-moun
Ingress Protection	IP68	IP30	IP30	IP30	IP67
Dimensions (mm)	79 x 35 x 144	32 x 90 x 110	45 x 90 x 110	45 x 90 x 110	106 x 196 x 48
Compliance					
CE/FCC	•	•	•	•	•
UL/CB(IEC)60950-1:2006 and/or UL/CB(IEC)62368-1:2014					
EN60950-1:2006 and/or EN62368-1:2014	•				
UL/CB(IEC)61010-2-201		•	•	•	•
AtEx Zone 2 - UL C1D2 (explosive atmospheres)		•	•	•	
NEMA TS2 (traffic control)					
EN45545 (fire protection)					
EN50155/ EN50121-4 (railway onboard/trackside)	•	•	•	•	•

Focus on...

RHG7528 - RHG7628 Highlights

- Fully managed Layer-2 or Layer-3 switch for Station aggregations
- Maximum 128Gbps switching capacity, 95.24Mpps throughput
- Rugged industrial design for -40~75°C harsh environment operation
- Flexible modular configuration, 3 Module-dedicated slots
- Up to 24 PoE ports, with maximum 720W of PoE power budget
- 4 x 1 Gigabit or 4 x 10 Gigabit SFP Uplink slots
- Endless configurations possible, 4 power input versions
- ITU-T G.8032 ERPS Ring, STP/RSTP/MSTP redundancy
- RIP, OSPF, Static Routing, PIM supported Layer-3 switching on RHG7628
- EN50155 / EN50121-4 Certified for Railway applications
- UL/CB(IEC)60950-1:2006 and UL/CB(IEC)62368-1:2014 certified

Comparison Chart

Railway-Certified product range

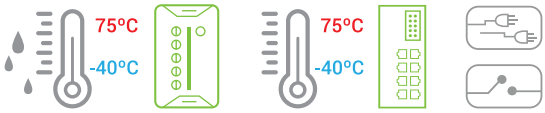
Managed Layer-2 Switches					Managed Layer-3 Switches		
			IP67 	IP67 			
			NEW!	NEW!			
EHG7504	EHG7508	RHG7528	EMG8508	EMG8510	EHG7604	EHG7608	RHG7628
4	8	28 (Max)	8	10	4	8	28 (Max)
-	-	-	-	-	-	-	-
Max 4 x RJ45	Max 8 x RJ45	Max 24 x RJ45	8 x M12-X	8 x M12-X	Max 4 x RJ45	Max 8 x RJ45	Max 24 x RJ45
Max 4 x SFP	Max 4 x SFP	4 or 4x10G SFP	-	2 x SFP	Max 4 x SFP	Max 4 x SFP	4 or 4x10G SFP
-	-	Max 24 x SFP	-	-	-	-	Max 24 x SFP
Max 4	Max 8	Max 24	Max 8	Max 8	Max 4	Max 8	Max 24
-	-	-	-	-	-	-	-
9~57V (PoE from 45V)	9~57V (PoE from 45V)	48~57V (PoE from 48)	12~57V (PoE from 45)	12~57V (PoE from 45)	9~57V (PoE from 45V)	9~57V (PoE from 45V)	48~57V (PoE from 48)
		110~220VAC	50~145VDC	50~145VDC			110~220VAC
•	•	Option	•	•	•	•	Option
•	•	•	•	•	•	•	•
-20~70° C	-20~70° C	-40~70° C	-40~75° C	-40~75° C	-20~70° C	-20~70° C	-40~70° C
-40~85° C	-40~85° C	-40~85° C	-40~85° C	-40~85° C	-40~85° C	-40~85° C	-40~85° C
Metal	Metal	Metal	Aluminum	Aluminum	Metal	Metal	Metal
DIN-rail	DIN-rail	Rack-mount	Field-mount	Field-mount	DIN-rail	DIN-rail	Rack-mount
IP30	IP30	IP30	IP67	IP67	IP30	IP30	IP30
54 x 113 x 145	54 x 113 x 145	440 x 44 x 340	216 x 232 x 72	216 x 232 x 72	54 x 113 x 145	54 x 113 x 145	440 x 44 x 340
•	•	•	•	•	•	•	•
•	•	•			•	•	•
•	•	•			•	•	•
			•	•			
•	•				•	•	
•	•				•	•	
•	•	•	•	•	•	•	•

Security

- Network component authentication via RADIUS
- Logical segmentation of separate sections of the network (VLAN)
- Prioritization management (QoS)
- Access control lists

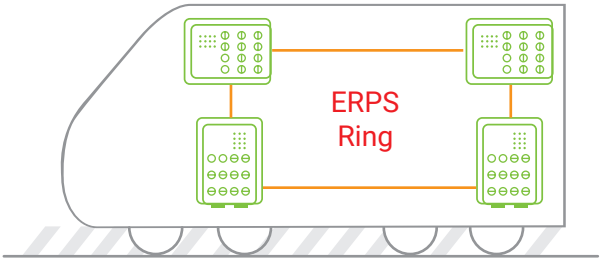
Robustness and ruggedness

- IP67 protection for outdoor deployments, with -40/75°C operation temperature
- IP30 protection for on-rack or on-cabinet deployments, with -40/75°C operation temperature
- Redundant power inputs and relay outputs



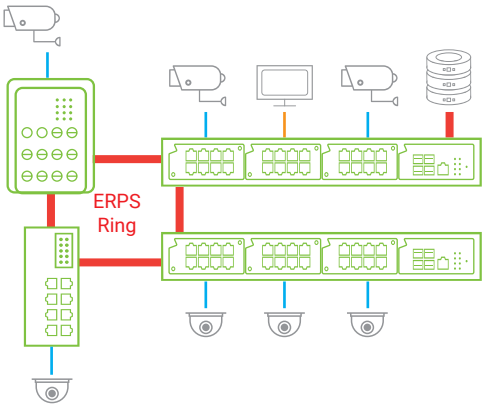
Redundancy through ITU-T G.8032 ERPS Ring

- Self-healing standardized redundancy protocol
- Up to 20ms recovery time with 40 devices
- Main ring or sub-ring definition allowed
- Simple and user-friendly configuration
- Bandwidth preservation



High-throughput

- Full-Gigabit on M12-X coded IP67 switches
- Full-Gigabit on RJ45/SFP IP30 switches
- Up to 127Gbps forwarding capacity and 40Gbps uplinks on aggregation switches



PoE Management

- Up to 8x PoE/PoE+ ports on IP67 switches, for 240W power budget
- Up to 24x PoE/PoE+ ports on aggregation switches
- PoE schedule feature
- PoE reset feature, to avoid remote maintenance when a PD device fails

Rolling Stock

From an ATOP real-world application

ATOP provides a wide-range of EN50155 & EN45545-2 certified IP67 and IP30 unmanaged and managed switches and serial servers suitable for supporting the challenges in rolling stock deployment. Equipped with M12 connector or RJ45/SFP interface, our devices support Gigabit speeds and Power over Ethernet to build the trains of the future.

ATOP EN50155 rolling-stock networking devices are now deployed in multiple applications across Europe, Middle-East and South-East Asia. ATOP's SE8502, the 2-port IP68 Serial Device Server, combined with EMG8305 and EMG8508 Industrial M12 Switches Series support Italian and German Railways for providing Power-over-Ethernet to car surveillance and transmitting the data to the serial-based passenger information system displays.

Trackside

From an ATOP real-world application

ATOP's EN50121-4 certified IP67 and IP30 unmanaged and managed switches, serving up to 10G speeds are the perfect choice for building the track-side network of next generation infrastructure. With either IP67 or IP30 protection, our devices can cover the market-specific needs inside the cabinet or exposed to the harshest weather conditions providing PoE power to cameras and other PD devices and offering a redundant fault-tolerant backbone in case of breakdowns.

With many devices deployed globally, ATOP track-side networking devices are now the backbone of several sections of the tracks in Japan, East-Asia and Northern-Europe. Our customers rely on the secure, reliable, ruggedized advanced managed Layer-3 switches with 10Gigabit uplinks to aggregate surveillance footage and mission-critical signaling information and to transmit along the track even when outdoor temperatures reach -30 degrees Celsius.

Atop Technologies, Inc.

TAIWAN HEADQUARTER
2F, No. 148, Sec. 1, Tung-Hsing Rd,
30261 Chupei City. Hsinchu County Taiwan, R.O.C.
Tel: +888-3-550-8137
Fax: +886-3-550-8131
E-mail: sales@atop com.tw

www.atoponline.com