

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/managed switches and serial servers, suitable for supporting the challenges in rolling stock deployment. Equipped with an M12 connector or RJ45/SFP interface, our devices support Gigabit speeds and Power over Ethernet to build the trains of the future.



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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 trackside network of next generation infrastructure. With either IP67 or IP30 protection, our devices can cover the market-specific needs both 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.





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Focus on...



EMG8508/ EMG8608 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 compliant PoE ports (Max 30W
- EN50155 for rolling stock equipment, EN50121-4 for trackside EN45545-2 for fire protection and UL 61010-2-201 certified
- Redundant power input, DC (12 to 57V) or High Voltage DC (50 to 145VDC)
- Works from -40°C to 75°C
- 2x Relay outputs, 5-pin M12 A-Coding
- Advanced software features, allowing self-healing topologies in <20 ms
- Optional Layer-3 routing option
- Security features based on IEC 62443

Comparison chart

Railway-certified product range												
	Serial Server	Unmanaged Switches										
	Reg Contraction				pol							
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	-	- May 4	T x SFP	2 x SEP	-							
POE/POE+ ports	- 2 v M12 A	IVIdX 4	IVIAX 4	IVIAX 4	-							
Senal ports	ZXIVIIZA											
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-mount							
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		•	•	•	•							
ALEX ZORE Z - UL CTDZ (explosive atmospheres)		•	•	•								
EN45545 (fire protection)												
EN50155/ EN50121-4 (railway onboard/trackside)	•	•	•	•	•							
	-	-	-	-	-							



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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 to 75°C harsh environment operation
- Flexible modular configuration, 3 module-dedicated slots
- Up to 24 PoE ports, with maximum 720W of PoE power budge
- 4 x 1 Gigabit or 4 x 10 Gigabit SFP Uplink slots
- Endless configurations possible, 4 power input versions
- ITU-T G.8032 EPRS ring, STP/RSTP/MSTP redundanc;
- RIP, OSPF, Sstatic 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
- Security features based on IEC 62443

Comparison Chart

Railv	way-Cer	tified pr	oduct ra	ange					
	Managed Layer-2 Switches				Managed Layer-3 Switches				
		,	RO CONTRACTOR	Real	Red Contraction	8 ⁵¹			,,
					NEW!	NEW!			
EHG7504	EHG7508	RHG7528	EMG8508	EMG8510	EMG8608	EMG8610	EHG7604	EHG7608	RHG7628
4	8w	28 (Max)	8	10	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	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	-	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 8	Max 8	Max 4	Max 8	Max 24
-	-	-	-	-	-	-	-	-	-
9~57V	9~57V	48~57V	12~57V	12~57V	12~57V	12~57V	9~57V	9~57V	48~57V
(PoE from 45V)	(PoE from 45V)	(PoE from 48)	(PoE from 45)	(PoE from 45)	(PoE from 45)	(PoE from 45)	(PoE from (151/)	(PoE from 45V)	(PoE from 48)
(102110111437)	(102110111437)	110~220\/AC	50~145VDC	50~145VDC	50~145VDC	50~145VDC	(102110111437)	(100 110111 43 V)	110~220\/AC
	-	0-+ti			30-143700	30-143700	-	-	Oution
•	•	Uption	•	•	•	•	•	•	Uption
•	•	•	•	•	•	•	•	•	•
-20~70° C	-20~70° C	-40~70° C	-40~75° C	-40~75° 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	-40~85° C	-40~85° C
Matal	Matal	Metel	Alumainuma	Alumainuma	Alumainuma	Alumainuma	Metel	Matal	Matal
DINLIngil	DIN rail	Ivietal Deals request	Field meaunt	Aluminum Field meunt	Field meaunt	Field meaunt	DIN rail	DIN rail	Ivietai Deels reesunt
ID20	ID20	ID20	ID67	ID67	ID67	ID67	ID20	ID20	ID20
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	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
34 X 113 X 143	<u> </u>	440 / 44 / 340	210 × 232 × 72	210 x 202 x 72	210 x 202 x 72	210 x 202 x 72	<u> </u>	34X113X143	++0 / ++ / 3+0
•	•	•	•	•	•	•	•	•	•
•	•	•					•	•	•
•	•	•					•	•	•
			•	•	•	•		-	
•	•						•	•	
	•								
•	•	•	•	•	•	•	•	•	•



Security

- Network component authentication via RADIUS
- Logical segmentation of separate sections of
- the network (VLAN) • Prioritization management (QoS)
- Access control lists
- Meet the technical requirements defined in the IEC 62443 standard

Robustness and ruggedness

- IP67 protection for outdoor deployments, with $-40/75^\circ\text{C}$ 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





- 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
- Optional Layer-3 routing features: IPv4, RIP v1/v2, OSPF v1/v2, BGP and many more



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



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-40°C

75°C

-40°C







Rolling Stock ATOP real-world applications

ATOP provides a wide range of EN50155 & EN45545-2 certified IP67 and IP30 unmanaged/managed switches and serial servers, suitable for supporting the challenges in rolling stock deployment. Equipped with an 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 in providing Power-over-Ethernet to car surveillance and in transmitting data to serial-based passenger information system displays.

Trackside ATOP real-world applications

ATOP's EN50121-4 certified IP67 and IP30 unmanaged and managed switches, serving up to 10G speeds, are the perfect choice for building the trackside network of next generation infrastructure. With either IP67 or IP30 protection, our devices can cover the marketspecific needs both 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 trackside 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 drop to -30 degrees Celsius.





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