

Bus & Tramway

Rugged WiFi solutions for
onboard and ground
communication



ACKSYS
COMMUNICATIONS & SYSTEMS

Bus & Tramway

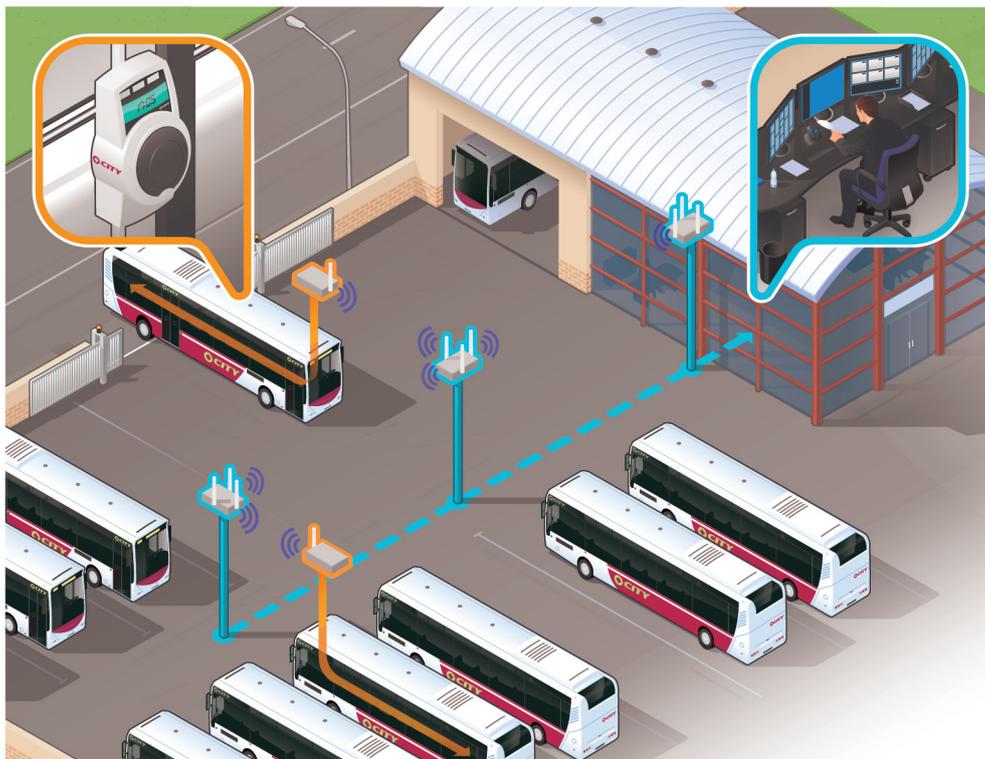
~ WiFi at the depot: how to automate the data collection ? ~

To provide even more information and safety to users but also to manage efficiently their fleet, operators need to exchange operating data (video surveillance, ticketing, passenger counting, PIS...) with buses and trams at the depot.

In this perspective, ACKSYS' rugged range of WiFi products allows a rapid and automatic transfer of large volumes of data.

> VEHICLES CAN LOAD AND OFFLOAD OPERATING DATA THROUGH THE WIRELESS NETWORK.

To enable simultaneous, efficient and reliable data transfers of all Ethernet devices, provided by different suppliers and integrated into each vehicle, ACKSYS' solution offers advanced functions to mutualize multiple streams on a single radio link, simplifying the deployment and allowing operating and maintenance costs reduction.



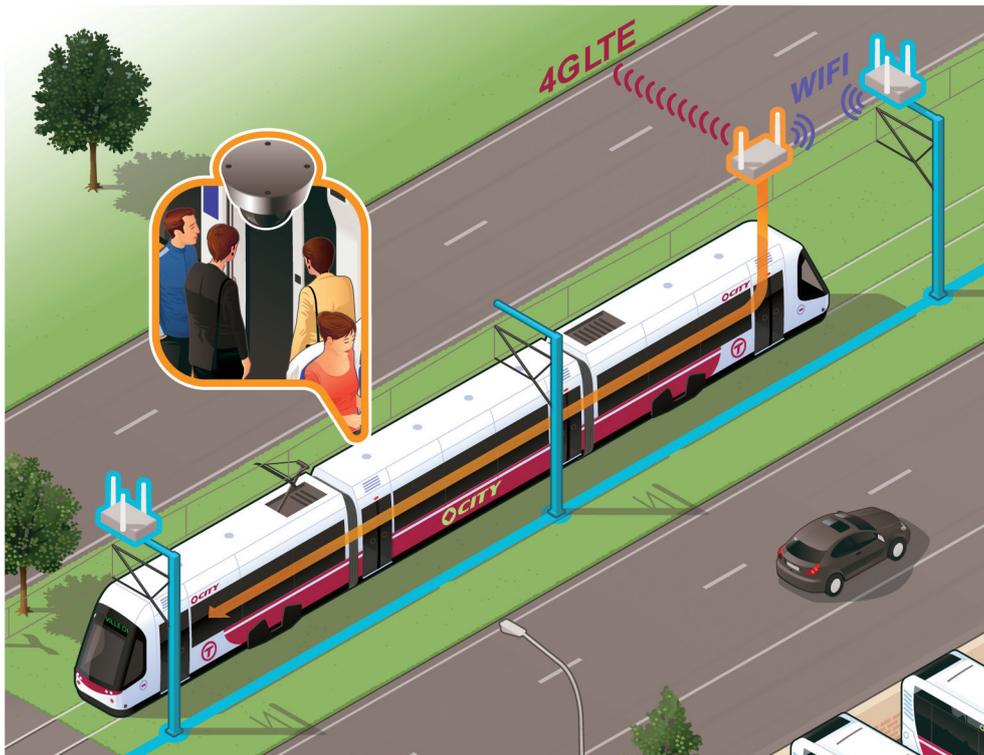
~ Real time communication in motion ~

Creating highly-available wireless network infrastructures benefits the passengers (entertainment, internet on board...) and also answers operating data collection demands.

To enable real-time communication in motion (video surveillance, preventive maintenance...), ACKSYS' rugged WiFi devices (APs, clients, routers & repeaters) offer advanced fast roaming func-

tions and high radio bit rate (up to 2 x 1.3 Gbps) that ensure a seamless and performing connectivity.

Beyond that, with new devices combining WiFi + 4G LTE, ACKSYS offers an alternative for areas non-covered in WiFi and thus ensures uninterrupted connectivity for advanced broadband services onboard.



“
A complete solution:
ACKSYS offers devices tailored for both ground
and onboard use
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→ SMART DEPLOYMENT

- Easy administration
- Identical IP addressing scheme for all vehicles: advanced routing & filtering functions preventing inter-connection with neighboring vehicles networks
- Mutualization of multiple application streams (videosurveillance, PIS...) on a single radio link (segmentation and prioritization)
- Combo solution (Ethernet switch with WiFi) allowing connecting multiple IP devices on-board

→ DYNAMIC DATA TRANSFERS

- Fast roaming (<30 ms, limitless channels, IEEE 802.11r / WiFi pre-authentication / OKC): seamless network connectivity in motion or upon entering the depot
- Radio bit rate up to 2 x 1.3 Gbps : rapid & automatic transfer of large volumes of data
- Mobile IP for seamless 4G LTE / WiFi roaming

→ ADAPTED DESIGN FOR BUS, TRAMWAY AND GROUND USE

- IP66 resistant solutions
- Products designed to operate at temperatures ranging from -40° to 75°C (for wide temperature models)
- RJ45, M12 or custom connectors
- E-marked devices (bus)
- EN50155 (IEC61373)/EN50121-3-2 compliant (tram)

~ ACKSYS' products tailored for public transportation ~

	 WLg-LINK	 WLg-4LAN	 WLg-SWITCH	 WLn-xROAD	 RailBox
FIRMWARE FUNCTIONALITIES					
Roaming	< 50 ms	< 50 ms	< 50 ms	< 30 ms, dualband, limitless channels	< 30 ms, dualband, limitless channels, mobile IP for a seamless 4G LTE/WiFi roaming
Redundancy	NO	NO	Hardware redundancy (power supply)	Routing redundancy (VRRP)	- VRRP, RSTP - Hardware redundancy: WiFi, Ethernet, power supply
Routing functions	NAT router (in client mode)	NAT router (in client mode)	NAT router (in client mode)	NAT router, router	NAT router, router, 4G (LTE) router
Streams segmentation and prioritization	NO	NO	QoS	-WMM, QoS, VLAN, L2 tunnel -multi-SSID (AP : 8 per radio)	- WMM, QoS, VLAN, L2 tunnel - multi-SSID (AP : 8 per radio) - VPN (IPSEC, OpenVPN)
Mesh	NO	NO	NO	802.11s (SAE security)	802.11s (SAE security)
DHCP server	in AP mode	in AP mode	in AP mode	in AP & client mode	in AP & client mode
Filtering rules	Basic rules	Basic rules	Basic rules	Advanced configurable rules	
Wireless security	802.11i, 802.1x (radius authentication)				
Administration	NDM, SNMP, WEB	NDM, SNMP, WEB	NDM, SNMP, WEB, C-Key (removable key for configuration backup)	NDM, SNMP, WEB	NDM, SNMP, WEB, C-Key (removable key for configuration backup)
Alarm signalling	SNMP traps	SNMP traps	SNMP traps, solid state relay	SNMP traps	SNMP traps, solid state relay
TECHNICAL CHARACTERISTICS					
Radio interface	1 WiFi 802.11a/b/g 2.4 / 5 GHz 54 Mbps	1 WiFi 802.11a/b/g 2.4 / 5 GHz 54 Mbps	1 WiFi 802.11a/b/g 2.4 / 5 GHz 54 Mbps	1 WiFi 802.11a/b/g/n 2.4 / 5 GHz 450 Mbps	1 or 2 WiFi or 1 WiFi + 1 4G 802.11a/b/g/n/ac 2.4 / 5 GHz 1 or 2 x 1.3 Gbps
Ethernet ports	1 x 10/100 RJ45	4 x 10/100 RJ45	8 x 10/100 RJ45 PoE PSE injector	1 x 10/100/1000 RJ45 (or custom)	2 x 10/100/1000 M12
Dimensions (mm)	103 x 67 x 24	98 x 81 x 24	110 x 50 x 151	185 x 64 x 35	80 x 175 x 57
Power supply	9 to 48 VDC	9 to 48 VDC	Redundant 9 to 75 VDC	9 to 36 VDC	Dual 24 to 110 VDC insulated power supply input or PoE +
Environment Operating temperature IP rating	0 to +70°C IP30	-20° to +70°C IP30	-25° to +70°C Option -40° to +80°C IP30	-25° to +70°C IP66	-25° to +70°C Option -40° to +75°C IP66



Why choose ACKSYS ?

> RELIABILITY AND ROBUSTNESS

ACKSYS' products are designed to be used in harsh environment, this is why their manufacturing components are carefully selected, controlled and submitted to endurance tests. They come with a 5-year or lifetime warranty.

> LONG LASTING PRODUCTS

In order to provide long lasting solutions to its customers, ACKSYS works closely with its suppliers to foresee any eventual obsolete products and thus back-up its product line to avoid any stock rupture. ACKSYS also pay attention to develop products compatible with existing solutions.

> RELEVANT SOLUTIONS

ACKSYS develops tailored solutions designed to fit its customers' specific business needs or unique application environment and is also able to adapt its products upon request. All ACKSYS' products are compliant with the standards in the various targeted markets.

> CUSTOMER SERVICE COMMITMENT

ACKSYS has developed a solid pre-sales and after-sales process to ensure that customers receive the highest level of support at every stage of their projects. ACKSYS commits to provide state-of-the-art technology, products and training to keep its customers, distributors and VARs in the forefront of the communication age.

ACKSYS
COMMUNICATIONS & SYSTEMS

Since 1984, ACKSYS Communications & Systems has acquired a strong know-how in designing and manufacturing industrial data communication solutions (WLAN / LAN / serial).

Its expertise and high quality standards allows it to meet the most severe requirements in transportation (rail & road), industrial (SCADA, automation), military (marine, land, air), aeronautics, mining (underground and above ground), oil & gas and environment (renewable energy, water, waste water).

Its inbuilt engineering, technical and commercial teams are able to meet accurately the expectations of its customers and assist them from the definition of their needs to the deployment. Thanks to a qualified and structured distribution network, ACKSYS is present on the five continents and can therefore meet any industrial application need, any time.

ACKSYS Communications & Systems

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