



Levanto x432 series

EDGE routers and industrial gateways



Models

Levanto 0432

Levanto 5432



EDGE routers and industrial gateways

EDGE ROUTER - LEVANTO SERIES

The Levanto EDGE Computing product series is designed for use in industrial and security scenarios with open source or third-party software hosted directly on the hardware platform.

At the same time, they offer a wide range of connectivity and routing capabilities in a compact design.

Depending on the specific model, they support multiple links, serial ports (RS-232 and RS-485) and digital inputs/outputs.

Models with an internal LTE port are suitable for "always-on" communications in mission-critical scenarios.

Levanto 0432 and **Levanto 5432** models offer, in a compact and versatile design for different types of installation, serial ports, digital inputs/outputs and support for multiple links.

Both models can also be installed on the wall thanks to the special hooks, or on a DIN rail with an optional kit.

The Levanto 5432 also features 4G cellular radio connectivity, making it suitable for "always-on" communications in mission-critical scenarios.

KEY FACTORS



EDGE computing

For third-party applications that need to operate at the EDGE of the network.



Robust

Designed to withstand and operate for a long time in industrial and noisy environments.



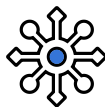
Rugged

For reliable operation in industrial environments and in the harshest environmental conditions.



Security by design

Right from the design phase for robust and natively secure solutions.



Multi-interface

Wide range of wired and wireless interfaces in a single device.



Open system

Open source or third-party software for a custom device.



Eco-efficient

Minimal consumption, lower environmental impact and greater savings on operating costs



Factory pre-configurations

Receive your product pre-configured according to your specific case



100% factory tested

We test all our devices, including SIM cards for models with a cellular radio connection.

RECOMMENDED SCENARIOS AND APPLICATIONS

The Levanto x432 models are particularly suitable for business applications in the industrial and energy sectors, where safety, continuity of service, reliability and durability are of primary importance for installations in noisy environments.

✓ Smart cities

✓ Industry 4.0 and 5.0

✓ IoT scenarios

✓ Renewable energy

✓ Vertical Market Applications



Levanto x432 MODELS



Levanto x432 has, in a single device, Gigabit Ethernet, USB, Bluetooth, Serial, Digital Inputs/Outputs and LTE connection.



Levanto 0432



Levanto 5432



4 GE ports



4 serial ports



1 USB 2.0 port



1 Bluetooth 5.0 port



1 IN/OUT digital port

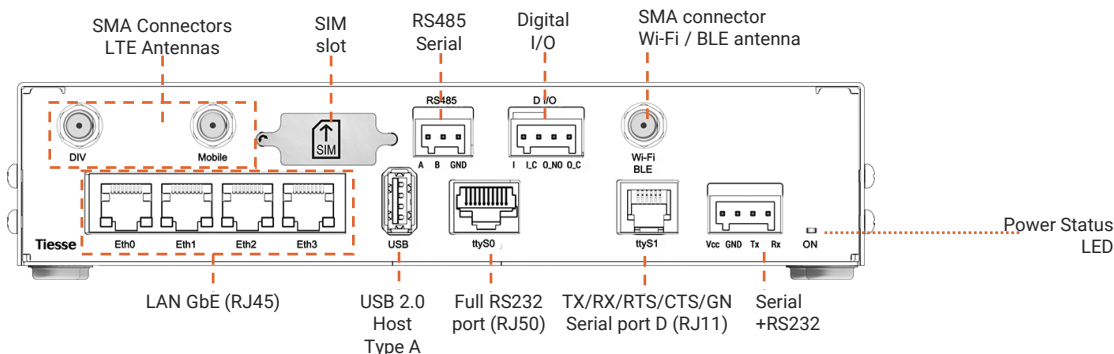


Wi-Fi b/g/n



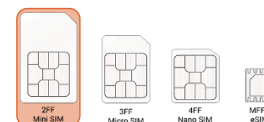
1 LTE port

HARDWARE INTERFACES



Port	N°	Type	Details
LAN	4	GE	- 10/100/1000 Mbps
Serials	4		- 1x RS-232 (RJ11 Female) - RX-TX-RTS-CTS - 1x RS-232 (RJ50 console port) - FULL - 1x RS-485 (External screw terminal 3 poles) half duplex - 1x RS232 TX-RX
Digital In/Out	1		- 1 port with external screw terminal, 4 poles
Wi-Fi & BLUETOOTH	1	Wi-Fi	- Wi-Fi SoftAP IEEE 802.11 b/g/n (1x1) - BLE 5.0 - Throughput up to 50 Mbps - Maximum number of supported clients: 8 - Personal & Enterprise IEEE 802.11 WEP, WPA, WPA2 Security
	1	Antenna	- External detachable antenna on the front, SMA male connector - It also includes Bluetooth capabilities
	1	GSM / GPRS / EDGE	- Frequency bands: 900 / 1800 MHz - Transmit power: class 4 (33dBm±2dB) for GSM850 and GSM900; class 1 (30dBm±2dB) for DCS1800 and PCS1900 - Multi-slot GPRS and EDGE class 12 support
		UMTS / HSDPA / HSUPA / HSPA+	- Frequency band: B1/B8 - Data rate: HSDPA up to cat. 20 - HSUPA up to cat. 6
		DC-HSPA+	- 42 Mbps in download
		WCDMA	- Frequency bands: B1/B5/B8 - Transmit Power: Class 3 (24dBm±1/3dB) - Data Rate: Max 384 Kbps (DL) / Max 38 4Kbps (UL)
		LTE	- Frequency bands - LTE-FDD : B1/B3/B5/B7/B8/B20 - LTE-TDD band: B38/B40/B41 - Transmit Power: Class 3 (24dBm±2dB) for both LTE-FDD and LTE-TDD - Data rate: Category 4, MIMO (categories 6 and 12 available on request) Peak rate FDD 150 Mbps (DL) / 50 Mbps (UL) – TDD 130 Mbps (DL) / 35 Mbps (UL)
RADIO CELLULAR (Levanto 5432)	2	LTE antennas	- External detachable antennas on the front, SMA male connector
	1	SIM	- External access SIM slot for mini SIM card(2FF)

Note: The throughput value depends on the network configuration, bandwidth assigned to the UE, number of users and RF signal conditions.





SOFTWARE

The products of the Levanto EDGE Computing series can be used in different operating modes, depending on the software configuration adopted and the product model.

NATIVE LINUX MODE



In native **Linux** mode, the device is accessible as a standard Debian-based Linux system.

In this configuration, the user has direct access to the operating system, with the possibility of configuration and customization through tools, commands and procedures typical of the Linux environment.

The platform natively supports the use of Docker containers, allowing you to run isolated and easily manageable applications.

Advanced features can be extended and automated through Python or Perl language scripts, offering great flexibility in developing custom solutions.

MTNOS OPERATING SYSTEM MODE



Models of the Levanto EDGE Computing series can be equipped with the Tiesse Network Operating System (MTNOS), developed entirely by Tiesse.

In this mode, the configuration and management of the system is done through the MTNOS command line interface (CLI), according to the operating model and syntax expected by the system.

The MTNOS CLI interface is uniform and common to the entire range of Tiesse routers, ensuring operational consistency, reduced learning curve and reuse of skills between devices belonging to the same family.

HYBRID OPERATING MODE: LINUX + MTNOS



A hybrid mode of operation is available in which the MTNOS Network Operating System and the underlying Debian Linux environment coexist.

In this configuration, MTNOS centrally manages all network features, including:

- Static and dynamic routing
- Switching
- Forwarding Policy
- Security
- NAT, VPN
- Advanced traffic control mechanisms

At the same time, the Debian Linux environment remains accessible for running user applications, custom services and custom-developed software components.

This architecture allows for **a clear separation between the network plane and the application plane**, while ensuring high flexibility, scalability, and reuse of operational expertise.

RECOMMENDED CONFIGURATION

The recommended configuration is to use MTNOS for all networking capabilities, while keeping user applications isolated from the networking infrastructure.

In particular, it is recommended to run the applications inside dedicated containers (Docker) made available by the MTNOS environment, in order to:

- Ensure isolation between the application plane and the network plane
- Simplify application deployment and updating
- Improve system security and stability
- Facilitate portability and software lifecycle management

How to use containerization and application hosting services is described in the official MTNOS documentation.





MTNOS SYSTEM

NETWORKING

- Support for IPv4 / IPv6 dual stack
- VXLAN (RFC 7348) for overlay Layer 2 over IP
- Segment Routing IPv6 (SRv6) with support of SID End, End.X, End.DT6, End.B6
- Integration with BGP SR Policy for traffic engineering
- High reliability mechanisms: ECMP, VRRP, BFD, EVPN multihoming

LAYER 2

- VLAN IEEE 802.1Q (access and trunk)
- Ethernet bridging with MAC learning
- EVPN (RFC 7432) with support for route Type-2 (MAC/IP), route Type-5 (IP Prefix), ESI for multihoming
- EVPN-VXLAN integration
- QinQ (802.1ad)
- Optional support for RSTP / MSTP

ROUTING & MULTICAST

- Static routing IPv4/IPv6
- Advanced BGP, with support for iBGP / eBGP, route-maps, communities, prefix-lists, Route Reflector, Confederations, Add-Path, Route Refresh, EVPN, SR-TE, BGP-LU, RPKI
- OSPFv2 / OSPFv3, IS-IS
- Multi-VRF
- Policy-Based Routing (PBR)
- ECMP and multipath
- Fast convergence: BFD, graceful restart

QoS

- Traffic classification
- Shaping ND policing
- Scheduling and priority queue management

VPN and TUNNELLING

- IPsec (IKEv1 / IKEv2, policy-based and route-based)
- GRE / GRE over IPsec
- L2TP / L2TPv3 (pseudo wire)
- VRF-aware tunnel with routing integration

SECURITY

- ACL IPv4/IPv6 (L2–L4 level)
- Stateful firewall with connection tracking
- Protection from attacks (i.e. SYN flood)
- NAT / PAT (SNAT, DNAT)
- Security Policy for VRF

MANAGEMENT and MONITORING

- Unified MTNOS CLI
- Logging and troubleshooting
- Traffic statistics
- SNMP and telemetry

HIGH RELIABILITY

- Automatic failover
- EVPN multihoming
- Link monitoring and rapid reconvergence

SYSTEM SPECIFICATIONS

PROCESSOR

- 2x Cortex A7 core up to 1 GHz
- +1 x Cortex-M4 core up to 200 MHz

MEMORY

DDR3 1 G

FLASH MEMORY

eMMC Storage 8 G

CHASSIS

Metallic material - Sapphire blue color

FORM FACTOR

Desktop

Wall or DIN rail installation with optional kit



MORE INFORMATION AND SUPPORT

SUPPORTO.TIESSE.COM



- Technical documentation, assembly instructions, quick start guides, first access data
- Firmware updates
- EMC, RED, RoHS, ...
- Technical support request
- End-of-sale and end-of-support information
- Warranty repair and product reconditioning

WIKI.TIESSE.COM



- Software documentation site
- User manuals
- First-time access guides
- Case studies, tutorials and other resources to help you use the products

ADD-ONS



Images for illustrative purposes

Optional accessories such as antennas are available for both indoor and outdoor omnidirectional and directional installations.

Please consult the relevant datasheets that can be downloaded from the www.tiesse.com website



KIT114

DIN Rail Mount Bracket



SUSTAINABILITY

SYSTEM

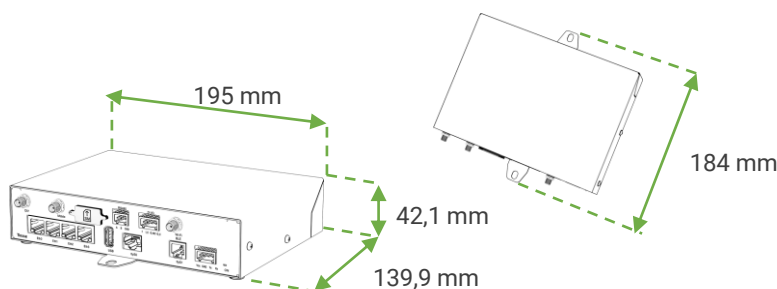
Power supply	9-29 Vdc
	230 Vac option available on specific request
Cooling	Fanless
Consumption (full functions)	- Medium: $\approx 2,5$ W - Maximum: ≈ 4 W (with call in progress)

ENVIRONMENTAL DATA

Operating Temperature	$-20^{\circ}\text{C} / +70^{\circ}\text{C}$
Storage Temperature	$-40^{\circ}\text{C} / +70^{\circ}\text{C}$
Maximum Operating Relative Humidity	93% (non-condensing)

DIMENSIONS and WEIGHT

Machine body	195 x 42,1 x 184 mm (W x H x D mm) hooks included		
Levanto 5432	Product	Accessories	Packaging
Total weight ≈ 1585 gr	≈ 985 gr	≈ 268 gr	≈ 332 gr
Levanto 0432	Product	Accessories	Packaging
Total weight ≈ 1415 gr	≈ 945 gr	≈ 146 gr	≈ 324 gr



OTHER INFORMATION

Packaging and wrapping materials	Levanto 5432: $\approx 91\%$ paper/cardboard, and the incidence of plastic packaging is about 9% or less. Levanto 0432: $\approx 99\%$ paper/cardboard, and the incidence of plastic packaging is about 1% or less.
	100% of the packaging material is recyclable

WEEE wates	For the correct disposal of Waste Electrical and Electronic Equipment (WEEE), pursuant to Article 26 of Legislative Decree No. 49 of 14 March 2014 'Implementation of Directive 2012/19/EU': contact raee@tiesse.com
------------	---



TIESSE S.p.A. has earned a Silver Medal, a recognition awarded to the Top 15% of companies assessed by EcoVadis in the 12 months prior to the medal issue date. It reflects the quality of the company's sustainability management system and demonstrates a commitment to promoting transparency throughout the value chain.

➔ [Tiesse's recognition](#)

➔ [Learn more about EcoVadis Medals & Badges](#)

Tiesse

Innovation made in Italy

Tiesse is a totally Italian company with more than 25 years of experience in the design, development and production of network equipment and IoT devices, suitable for use in mission-critical and industrial scenarios. Tiesse's most successful series, Imola, Lipari and Levanto, are innovative, competitive and certified, and are present in the networks of the major telecommunications operators, in the energy sector, large-scale distribution and vertical sectors, both in the Italian and foreign markets.

Further information on Tiesse solutions can be found on the company website www.tiesse.com.



Info: info@tiesse.com

Marketing & Sales: marketing@tiesse.com

www.tiesse.com



Disclaimer

The information contained in this document may include forward-looking statements, including, without limitation, statements regarding future financial and operating results, future product portfolios, new technologies, and related developments. A number of factors could cause actual results and developments to differ materially from those expressed or implied in such forward-looking statements. Accordingly, this information is provided for reference purposes only and does not constitute an offer or acceptance. Tiesse reserves the right to modify the information contained herein at any time without prior notice.

© Copyright Tiesse S.p.A.

Any disclosure, derivation or reproduction of this document, even partial, is strictly prohibited without prior written authorization by Tiesse S.p.A.

Ver. ENG 250226

