Tiesse
Innovation made in Italy

EDGE Computing
Levanto series



Levanto x204 series

EDGE routers and industrial gateways



Datasheet

WWW.TIESSE.COM



Models
Levanto 0204
Levanto 5204

EDGE Routers and industrial gateways

EDGE ROUTER - LEVANTO SERIES

The Levanto EDGE router 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 x432).

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

The Levanto 0204 and Levanto 5204 models offer wired and wireless ports, in a single device with a compact and versatile design for different types of installation: they can also be installed on the wall or on a DIN rail.

The TGR 5204 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.

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 x204 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
- ✓ IoT scenarios
- ✓ Vertical Market Applications
- ✓ Industry 4.0 and 5.0
- ✓ Renewable energy

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Levanto x204 MODELS

Levanto x204 has, in a single device, Gigabit Ethernet, USB, Bluetooth, dual Wi-Fi and LTE connection.


Levanto 0204


Levanto 5204

2 GE ports

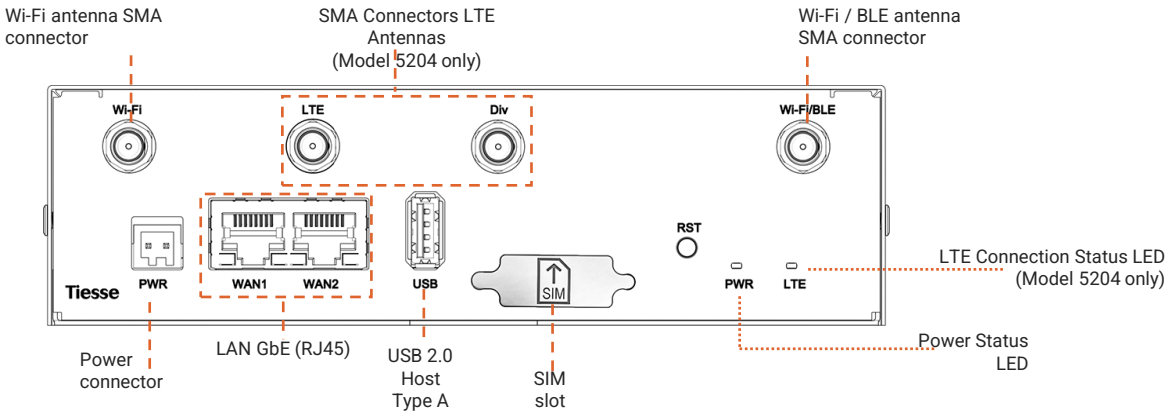
1 USB 2.0 port

1 Bluetooth 5.0 port

Dual Wi-Fi

1 LTE port

HARDWARE INTERFACES



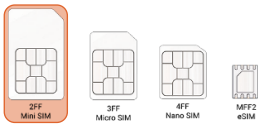
Ports	N°	Type	Details
LAN	2	**FE**	- 10/100 Mbps - *Note: Depending on the specific bundle, ports wan1 and wan2 may be named eth0 and eth1*
Wi-Fi & BLUETOOTH	2	**Wi-Fi**	- Wi-Fi IEEE 802.11 a/b/g/n/ac (2x2) - Throughput up to 867 Mbps - Max number of client supported: 32
	1	**Bluetooth**	- BLE 5.0 - Personal & Enterprise IEEE 802.11 WEP, WPA,WPA2 Security
	2	**Antennas**	- External detachable antennas on the front, RP-SMA connector - One of the antennas also includes Bluetooth capabilities

RADIO CELLULAR (Levanto 5204)	1	**GSM / GPRS / EDGE**	- Frequency bands: B3/B8
			- Transmit Power:
			  - GSM class 4 (33dBm) and class 1 (30dBm)
			  - EDGE class E2 (~27dBm)

		UMTS / HSDPA / HSUPA / HSPA+ / DC HSPA+ / WCDMA	- Frequency band: B1/B3/B8
			- Transmit Power: WCDMA Class 3 (24dBm)
			  - DC-HSPA+: Up to 42 Mbps download
			  - Compliant with 3GPP rel.9 standard

		LTE	- LTE FDD frequency bands: B1/B3/B7/B8/B20/B28A - Transmit Power: Class 3 (23dBm) - Data rate: Category 4, MIMO (Categories 6 and 12 available on request) - Peak speed 150 Mbps DL, 50 Mbps UL
	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.



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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

Levanto EDGE Computing models 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.

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MTNOS SYSTEM

MTNOS

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	- 4x Cortex-A53 core platforms up to 1.8GHz per core - + 1x Cortex-M4 core
MEMORY	LPDDR4 2 GBytes
FLASH MEMORY	eMMC Storage 8 Gbytes, + internal microSD

CHASSIS	Metallic material - Sapphire blue color
FORM FACTOR	Desktop
	Wall installation

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MORE INFORMATION AND SUPPORT

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- 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

SUSTAINABILITY

SYSTEM

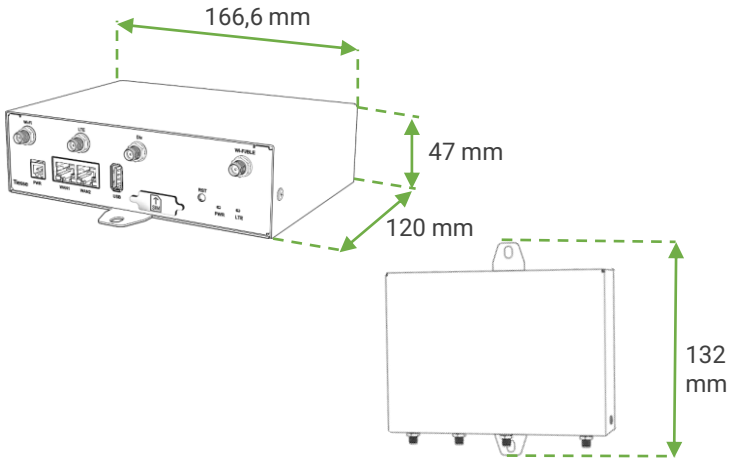
Power supply	12-48 Vdc
	230 Vac option available on specific request
Cooling	Fanless
Consumption (full functions)	- Medium: ≈ 4 W - Maximum: < 10W (with call in progress)

ENVIRONMENTAL DATA

Operating Temperature	–20° C / +70° C
Storage Temperature	–40° C / +70° C
Maximum Operating Relative Humidity	95% (non-condensing)

DIMENSIONS and WEIGHT

Machine body	166,6 x 47 x 132 mm (L x P x A mm) hooks included		
Levanto 5204 **Total weight** ≈ 1172 gr	**Product**	**Accessories**	**Packaging**
	≈ 598 gr	≈ 372 gr	≈ 200 gr
Levanto 0204 **Total weight** ≈ 962 gr	**Product**	**Accessories**	**Packaging**
	≈ 590 gr	≈ 170 gr	≈ 200 gr



OTHER INFORMATION

Packaging and wrapping materials	Levanto 5204 and Levanto 0204: ≈93% is made of paper/cardboard and the incidence of plastic material is equal to or less than 7%.
	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

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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.

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www.tiesse.com

IMQ CERTIFIED QUALITY MANAGEMENT SYSTEM ISO 9001:2015
IMQ ATTESTED UNI EN ISO 14064-1:2019
IQNET RECOGNIZED CERTIFICATION
IMQ CERTIFIED ENVIRONMENTAL MANAGEMENT SYSTEM ISO 14001:2015



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