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Innovation made in Italy®

IoT/M2M devices
Levanto series


# Levanto 510

## M2M/IoT devices with mobile connectivity for remote control, smart metering and industrial applications

FE
Fast Ethernet

4G cat. 4
Cellular

Serial

Datasheet

WWW.TIESSE.COM


# Model
# Levanto 510

FE | 4G cat. 4 | 2G | 3G

## IoT/M2M device with mobile connectivity for remote control and industrial applications

**Levanto** is a IoT devices series that provides connectivity between remote devices and centralised control systems via a cellular mobile radio network, guaranteeing continuity of service.

**Levanto 510**, via WAN connection over GSM / GPRS / EDGE / HSUPA/LTE networks, ensures reachability and data exchange between peripheral assets and central control as well as the monitoring platforms.

## ALWAYS-ON

The many mechanisms on the Levanto 510 maintain always-on connections, avoiding the need for the operators to intervene at peripheral locations.

It support, in particular:

- control messages (SMS)
- inactivity timers
- asynchronous notifications
- integrated external antenna to improve signal quality

## KEY BENEFITS

⇒ Continuity of service

⇒ Industrial grade with components which have a long life cycle and high reliability

⇒ Security

⇒ Compact and small dimensions

⇒ Factory pre-configurations

⇒ SIMs installed and tested on each individual device in factory

## APPLICATIONS

Levanto is particularly suitable for business applications in the industrial and energy sectors, where security and continuity of service are paramount, as well as reliability and durability for installations in disturbed environments. It is designed to meet the requirements and needs in the scenarios:

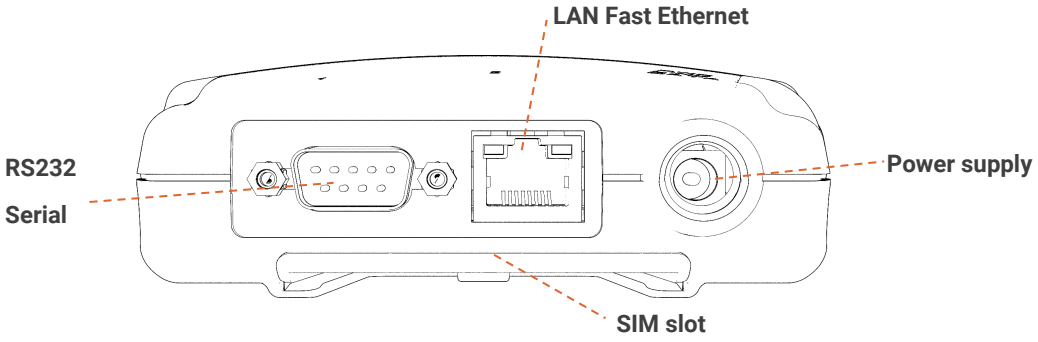
⇒ **Smart Metering**
⇒ **Telecontroll**
⇒ **Smart City**
⇒ **Remote monitoring and management of the assets**
⇒ **Environment monitoring**
⇒ **Industry 4.0**

## LEVANTO 510 BUNDLE REMOTE CONTROL AND READING

**Levanto 510** is also available in **specific bundle** with a fixed and seamless configuration with its predecessor **Levanto 300**, operating on 2G networks with modem functions. The following bundles are approved:

- LEVANTO 510 TC — Telecontrol (Enel serial number 516297)
- LEVANTO 510 TL — Remote reading (Enel serial number 516298)

## HARDWARE INTERFACES




| Port | Description | Details |
|---|---|---|
| **LAN** | | 1 Ethernet 10/100 Mbps port, RJ45 connector<br>(not used on LEVANTO 510 TC and LEVANTO 510 TL models) |
| **Serial** | | – 1 DB Asynch port up to 115.2 Kbps - RS232 connector<br>It allows use as COM Modem (via AT command) |
| **Radio cellular** | Bandwith | – LTE FDD: B1/B3/B7/B8/B20/B28<br>– WCDMA: B1/B8<br>– GSM: B3/B8 |
| | LTE | – Support up to Cat. 4<br>– LTE FDD: 150 Mbps (DL) - Max 50 Mbps (UL) |
| | UMTS | – DC-HSDPA: max 42 Mbps (DL)<br>– HSUPA: max 5.76 Mbps (UL)<br>– WCDMA: max 384 Kbps (DL) - max 384 Kbps (UL) |
| | GSM | – EDGE: max 296 Kbps (DL) - max 236.8 Kbps (UL)<br>– GPRS: max 107 Kbps (DL) - max 85.6 Kbps (UL) |

## 4G mobile radio power and sensitivity

**Power**

- Class 3 (23 dBm ± 2 dB) per LTE-FDD
- Class 3 (24 dBm + 1/-3 dB) for WCDMA
- Class 4 (33 dBm ± 2 dB) for EGSM900
- Class 1 (30 dBm ± 2 dB) for DCS1800
- Class E2 (27 dBm ± 3 dB) for EGSM900 8-PSK
- Class E2 (26 dBm ± 3 dB) for DCS1800 8-PSK

**Sensitivity**

- LTE FDD B1: -101.4 dBm (10M)
- LTE FDD B2: -102.1 dBm (10M)
- LTE FDD B3: -101.5 dBm (10M)
- LTE FDD B4: -102.1 dBm (10M)
- LTE FDD B5: -103.1 dBm (10M)
- LTE FDD B7: -101.3 dBm (10M)
- LTE FDD B8: -101.2 dBm (10M)
- LTE FDD B12: -102.7 dBm (10M)
- LTE FDD B13: -102.6 dBm (10M)
- LTE FDD B20: -101.3 dBm (10M)
- LTE FDD B28A: -101.4 dBm (10M)
- WCDMA B1: -112.5 dBm
- WCDMA B2: -109.7 dBm
- WCDMA B4: -109.6 dBm
- WCDMA B5: -110.2 dBm
- WCDMA B8: -112.5 dBm
- EGSM900: -108.6 dBm
- DCS1800: -109.4 dBm

## ... wherever the installation is

### Ruggedness

Rugged industrial-grade design. Levanto is designed to operate in extreme conditions, temperatures and disturbed environments.

### Access

Whatever the location, Levanto accesses the public network (Internet) with the appropriate level of security.

The connection can be activated using the TCP-IP/GPRS/EDGE/HSPA/LTE protocols

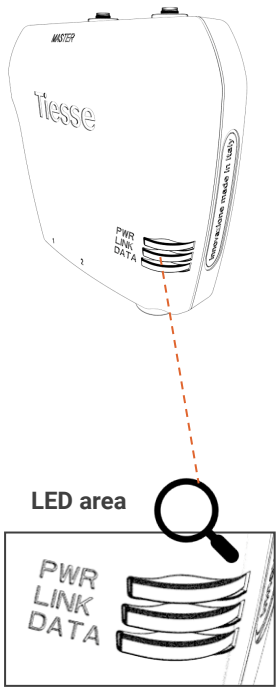
### Configuration and Management

⇒ Easy and immediate configuration both locally and remotely.

⇒ Possibility of factory pre-configurations or subsequent configuration via download from the management center.

⇒ Risk Free configuration system against any incorrect configurations that compromise remote accessibility.

## LED DESCRIPTION




LEVANTO 510 models are equipped with 2 LEDs for the Ethernet port to indicate their operating status plus three LEDs located on the front:

- 1 x power / operative state (LED PWR)
- 1 x connection status on cellular radio link (LED LINK)
- 1 x data activity on cellular radio connection (LED DATA)

*The following table summarizes the LEDs behaviour when the device is turned on for the first time (the font color is the same as the LED color). The meaning of the LEDs may change depending on the specific bundle, so refer to the flyer in the package.*

| Status | LED PWR | LED Link | LED Data |
|---|---|---|---|
| System booting (-55") | On | On | On |
| End of the system boot phase | 1" on - 1" off | On | Off |
| Application is starting | 1" on - 1" off | Off | Off |
| Registration on the 2G network | Blinking 3 times | Blinking | Off |
| Modem is registered on the 2G network | Blinking 3 times | On | Off |
| GPRS APN connection | Blinking 3 times | Blinking 2 times | On |
| Cellular data transmission | Blinking 3 times | Blinking 2 times | 2" on - 2" off |
| CSD call in progress | Blinking 3 times | On | 0.8" on - 0.8" off |

## SOFTWARE

*Note: the list below is indicative; features depend on NoS version and update.*

| Area | Main features* |
|---|---|
| **NETWORKING** | – IPv4, IPv6support<br>– TCP, UDP<br>– ARP<br>– ICMP<br>– 801.q (VLAN) |
| **ROUTING & MULTICAST** | – Static routing<br>– Dynamic routing protocols RIPv1, RIPv2 |
| **SECURITY** | – Non-interruptible boot<br>– NAT/PAT<br>– PAP, CHAP<br>– IPSEC, GRE<br>– TLS 1.2 AND 1.3<br>– ACLs, Stateful Firewall<br>– Port forwarding<br>– Services enabling and disabling |

| Area | Main features* |
|---|---|
| **SERVICES** | – DHCP client, DHCP server<br>– HTTPS<br>– Ping, Traceroute<br>– NTP Client and server support |
| **MANAGEMENT & CONFIGURATION** | – SNMPv2, SNMPv3<br>– Telnet client and server<br>– SSHv2<br>– sFTP client<br>– Syslog server<br>– Different logging levels<br>– Radius Support<br>– TACACS local authentication<br>– Configuration via Command Line Interface (CLI) |

## TECHNICAL SUPPORT

On line technical support on:

**Supporto.tiesse.com**: the site with technical documentation, assembly instructions, software updates, and forms to request technical support

**Wiki.tiesse.com**: the site with manuals, installation instructions, case studies, scenarios, FAQs, etc.

## SYSTEM features

| | |
|---|---|
| **POWER** | 9-30 Vcc; version with a AC/DC 12V power adapter is also available |
| **CONSUMPTION** | < 3 W |
| **ENVIRONMENT** | **Operating temperature**: -25° C / +55° C<br>**Operating range limit**: -40° C / +70° C<br>**Storage temperature**: -40° C / +70° C<br>**Max operating humidity**: 93% (non condensing) |
| **PROCESSOR** | ARM up to 400 MHz |
| **MEMORY** | DRAM 128 MB |
| **FLASH MEMORY** | 256 MB |

## EXTERNAL features

| | |
|---|---|
| **MATERIAL** | Chassis and accessories (such as DIN rail bracket or L-bracket for wall installation) are made of thermoplastic material: synthetic resin with self-extinguishing properties V0-UL94 |
| **COLOR** | Papyr white (RAL 7035) |
| **FORM FACTOR** | – Desktop<br>– Wall or DIN rail using special add-ons |

## Optional Add-ons

The Levanto series comes with optional accessories such as omnidirectional and directional antennas for outdoor installations and brackets for wall and DIN rail installations.

For complete information, see the add-ons datasheet at www.tiesse.com.

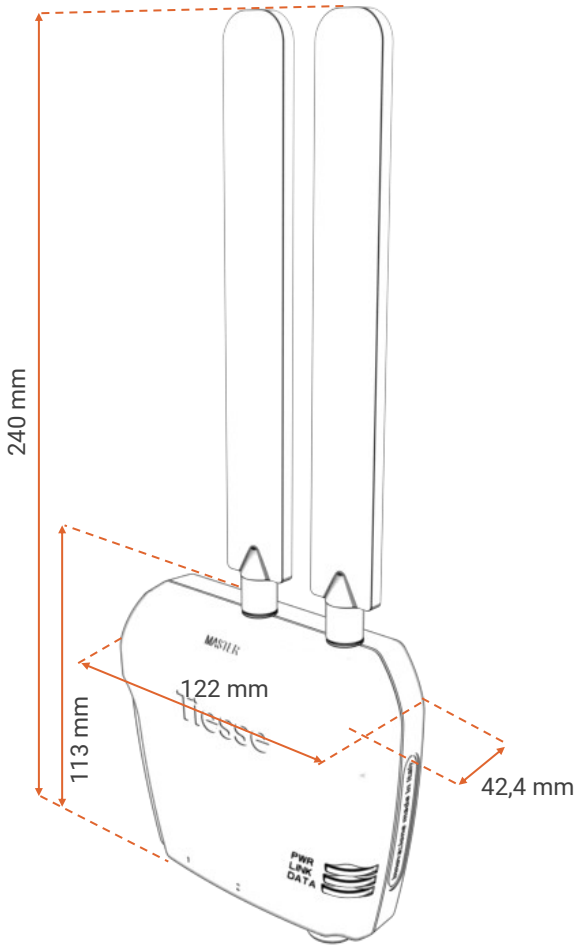
**Code MEC204-01**

Self-extinguishing thermoplastic bracket for DIN rail mounting

**Code MEC015-I**

L-shaped bracket made of self-extinguishing thermoplastic material for wall mounting

## SIZE




## ANTENNAS

| | |
|---|---|
| **AMOUNT** | *Note: the number of antennas and type may vary depending on the bundle.*<br>– 2 x removable external antenna (SMA male connectors)<br>– Levanto 510 TC and Levanto 510 TL bundles use only one antenna, as the connection is 2G or 3G (where still present) |
| **FREQUENCY** | – 700-960 / 1710-2700 |
| **FEATURES** | – VSWR less than 2.2<br>– Impedance 50 ohms<br>– Vertical polarization<br>– 2.14 dBi gain |
| **ADD-ONS** | – Supports external directional/ homnidirectional high-gain antennas (optional), connectable via cable with SMA male connector |

Tiesse

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Tiesse is a totally Italian company with more than 25 years' 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

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