



# Imola LX 0272-IKW-V



# Serie Imola LX 0272-IKW-V



## Ultra-broadband router VDSL2 - Wi-Fi

### IMOLA LX x272 SERIES

The **Imola LX x272** series is an advanced line of routers with xDSL and Gigabit Ethernet WAN connectivity, designed specifically for business applications that require high security standards and optimal network performance.

The compact size and the different mounting (vertical, horizontal and wall-mount) options make the Imola LX x272 models easy to install in any environment, while the low-power design helps reduce operating costs.

### ALL-IN-ONE



FTTC, FTTH and Wi-Fi in a single device for reliable, versatile and scalable connectivity. Our Imola LX series devices are adaptable to any technology and include the features

- Routing & switching
- Multi fail-over
- QoS

### KEY FACTORS



#### Secure by design

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



#### Always-On

Stable connections anywhere, with multiple links, transparent backup, and quality of service for uninterrupted business.



#### Certified

Validated for inclusion in business offering profiles and use within the networks of major telecom operators.



#### Rugged and carrier grade

Designed to withstand and operate for long periods in industrial and disturbed environments. Carrier grade reliability.



#### Smart value

Maximizes business value with an excellent performance-to-price ratio.



#### Zero Touch Provisioning

Zero Touch Provisioning facilitates remote management and agile configuration of the installed base.



#### Eco-efficient

Minimal consumption, lower environmental impact and higher operating cost savings.



#### Factory pre-configurations

Receive your product pre-configured according to your specific case.



#### 100% factory-tested

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



## IMOLA LX 0272-IKW-V



5 Gigabit  
Ethernet ports



1 VDSL  
port



Wi-Fi b/g/n



Zero Touch  
Provisioning



## SUGGESTED SCENARIOS AND APPLICATIONS



### ISP & Telco Ready

Designed to meet the requirements of service providers, telecom operators, carriers, and system integrators.



### Backup and redundancy on multiple links

Optimised products for ultra-connected branches and remote locations



### Service continuity and Mission Critical applications

- Secure access to the corporate WAN network
- Branches and remote offices of banks and insurance companies
- Lotteries
- Gaming networks
- Transportation
- Backing up broadband networks

## BACKUP: high availability mission critical

### Seamless backup

The user does not perceive service interruptions and the transition to backup.

Transitions from normal to backup mode and vice versa are performed considering the operational costs.

### Multiple Backup

A pair of routers in VRRP performs physical backup of both the network and hardware.

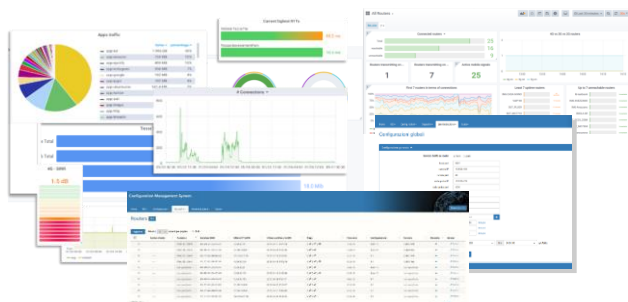
### Homogeneous Backup

A single router integrates all ports, wired and mobile.

### Heterogeneous backup

An installed base can be upgraded by adding a mobile router and using the VRRP (Virtual Router Redundancy Protocol).

## ZERO TOUCH PROVISIONING



Tiesse's router are integrated in the **TNA (Tiesse Network Architecture)** suite.

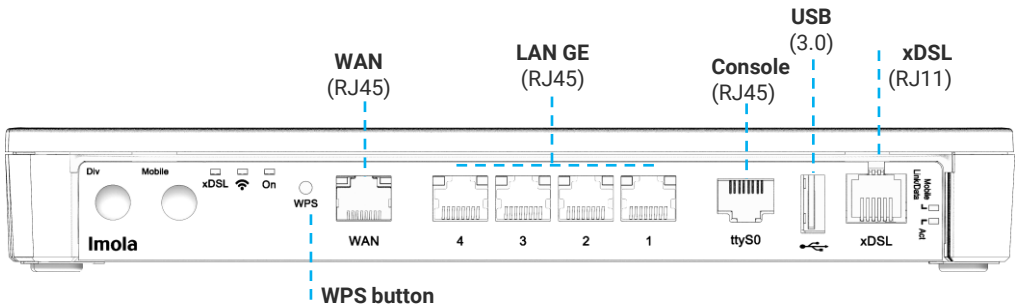
**TNA** is the modular software suite that enables Zero Touch Provisioning network architecture, including monitoring, remote and automated web-based management of configurations and firmware releases of the installed fleet; it enables traffic engineering, network overlays, and many other functionalities.

A complete datasheet of the solution is available at [www.tiesse.com](http://www.tiesse.com).



HARDWARE INTERFACES

| Port | N° | Type     | Details                                                                                                                                                                                                                                                                                                                                                    |
|------|----|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LAN  | 4  | GE       | 10/100/1000 Mbps                                                                                                                                                                                                                                                                                                                                           |
|      | 1  | Wi-Fi    | - 802.11 b/g/n port (2.4 GHz) 2x2, up to 300 Mbps<br>- Internal antennas                                                                                                                                                                                                                                                                                   |
| WAN  | 1  | GE       | 10/100/1000 Mbps (label WAN)                                                                                                                                                                                                                                                                                                                               |
|      |    | xDSL     | Full rate ADSL2/2+ / VDSL2                                                                                                                                                                                                                                                                                                                                 |
|      | 1  | ADSL2/2+ | - Downstream data rate up to 24 Mbps and upstream data rate up to 3.5 Mbps<br>- Compliant with Standard G.992.1 annex A, B, C & I, G.992.2-g.Lite, G.992.3 annex A, B, I, J, M, G.992.4-g.Lite.bis, G.992.5 annex A, B, C, I, J, M, ANSI T1.413 issue2, ETSI TS 388<br>- ADSL-over-ISDN, ITU T-I.361, ITU T-I.363.5, ITU T-I.432, ITU T-I.610, ITU T-I.731 |
|      |    | VDSL2    | - Support for all VDSL2 profiles: from 8 MHz up to 30 MHz in accordance with ITU-T standard G993.2<br>- Complies with the G.Vector standard (ITU-T G.993.5)<br>- Complies with the ITU-T G.998.4 G.INP standard<br>- Compatible with ADSL2 (backward compatibility)                                                                                        |



LEDs



| LED     | Color  | Position    | Details                                           |
|---------|--------|-------------|---------------------------------------------------|
| POWER   | Green  | LED area 1  | Power status                                      |
| Wi-Fi   | Green  | LED area 1  | Wi-Fi b/g/n (2.4 GHz) status                      |
| xDSL    | Green  | LED area 1  | xDSL connection status                            |
| LAN/WAN | Yellow | On LAN port | One for each ETH port, 1Gbps connection status    |
|         | Green  | On LAN port | One for each ETH port, 100 Mbps connection status |

INSTALLATION OPTION





## MONITORING AND PERFORMANCE MEASUREMENT FUNCTIONALITIES

### IP SLA / Active Probing support for quality measurements

- One-Way Delay
- Round-Trip Delay
- Jitter
- Packet Loss

### Active measurement of link quality using test packages

- BFD – Rapid detection of connectivity faults
- ICMP Echo / Ping – RTT and reachability
- UDP/TCP Probe – Verification with real transport protocols
- HTTPS Probe – Application service availability check
- TWAMP/OWAMP – Standardised measurement of delay, Jitter and loss

### Data collection and supervision

- SNMPv2/v3 – Polling and status traps
- Syslog – System event and alarm logs
- NetFlow / IPFIX – Traffic flow analysis
- TNA MOS Tiesse

## SOFTWARE

Note: the following list is purely indicative, active features depend on version and software update (NOS).

### NETWORKING

- TCP-UDP IPv4
- IPv6

### LAYER 2

- LAN Bridging
- VLAN on 802.1q LAN interfaces in Access mode, Trunk, native VLAN and Hybrid mode
- Layer 2 Protocol Tunneling (L2PT)
- 802.1Q-in-802.1Q

### ROUTING & MULTICAST

- Static, Policy routing, RIPv1, RIPv2
- BGP-4, BGP-4+
- OSPFv2
- VRF Lite, Routing redistribution and tagging
- IEEE 802.1d (Spanning Tree Protocol)
- VRRP (Virtual Routing Redundancy Protocol) with IPv4-IPv6 authentication
- IGMP v1-v2-v3, IGMP snooping, IGMP proxying
- Multicast routing with PIMv2 sparse-mode and PIMv2 dense-mode, MSDP

### QoS

- Traffic classification based on source IP, destination IP, protocols (UDP, ICMP, TCP, etc.) and ports, and their combinations, on application recognition, on IP Precedence and DSCP
- DiffServ
- Remarking of IP Precedence, DSCP and CoS
- CoS on VLAN
- QoS on ATM classes
- Shaping with guaranteed bandwidth allocation and redistribution of excess bandwidth
- Committed Access Rate and Multicast rate limit
- Traffic prioritisation mechanisms, definition of an arbitrary number of priority classes
- IEEE 802.3ad link aggregation

### SECURITY

- NAT/PAT
- ACLs, Stateful Firewall
- SSL Tunnelling
- L2TP
- GRE Tunnelling with keep alive and key sequence numbering (cellular network optimisation)
- VPN with IPSEC/ESP or IPSEC/AH IKEv1/IKEv2
- 3 DES Encryption

### SERVICES

- DHCP client, DHCP server with anti-spoofing functions, DHCP Layer Discovery Protocol IEEE 802.1ab, DHCP relay
- Intelligent DNS Proxy, local and remote
- Traceroute
- NTP Client and Server Support
- Easy VPN
- DDns

### MANAGEMENT & CONFIGURATION

- SNMP v1, SNMPv2, SNMPv3
- Telnet server with multiple simultaneous sessions
- SSH server with multiple simultaneous sessions (SSHv2)
- Netflow
- IP SLA support for: One-way delay, round trip delay, jitter, packet loss
- Syslog /Trap fault management
- Radius, TACACS+ support
- Tracking for management of backups, commands and scheduled events
- Software update via TFTP, FTP, sFTP, HTTP, HTTPS, SCP
- Configuration via Command Line Interface (CLI), Text/Menu oriented and Telnet
- TNA (Tiesse Network Architecture) suite for self-provisioning and automated remote management
- Management of an unlimited number of configurations



SYSTEM FEATURES

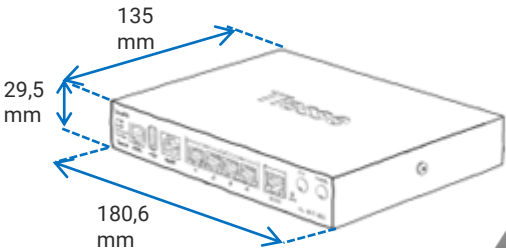
|                |                        |             |                                                                       |
|----------------|------------------------|-------------|-----------------------------------------------------------------------|
| PROCESSOR      | RISC Network processor | CHASSIS     | Plastic material, black color                                         |
| MEMORY         | DRAM 256 MB            |             | Metal variant available on request, for volume or industrial projects |
| FLASH MEMORY   | 256 MB                 | FORM FACTOR | Desktop                                                               |
|                |                        |             | Rack (optional kit)                                                   |
| Wi-Fi ANTENNAS | Internal               |             |                                                                       |

METAL MATERIAL CHASSIS VARIANT

Metal chassis variant available (for volume or industrial projects) with extended operating temperature range (-25°/+70°).

External antennas (2 for Wi-Fi, 2 for cellular radio - male SMA connector).

Body weight: 660 g ± 10%



OTHER INFORMATION AND SUPPORT

SUPPORTO.TIESSE.COM



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

WIKI.TIESSE.COM



- Website dedicated to software documentation
- User manuals
- First access guides
- Case studies, tutorials and other useful resources for product use



## SUSTAINABILITY

### SYSTEM

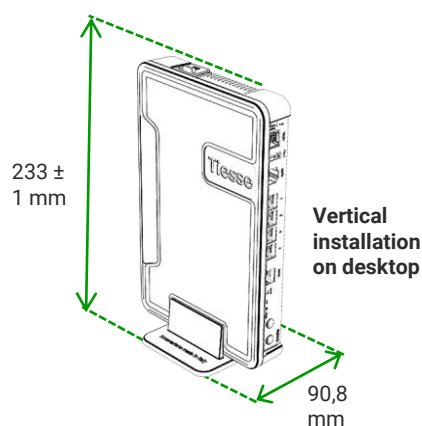
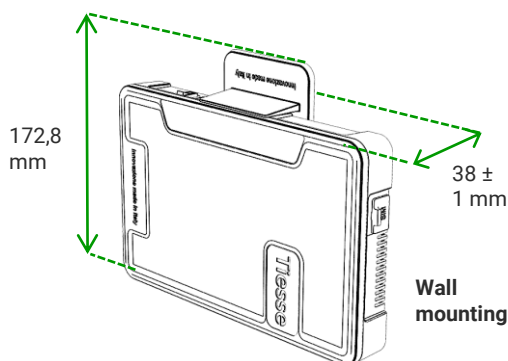
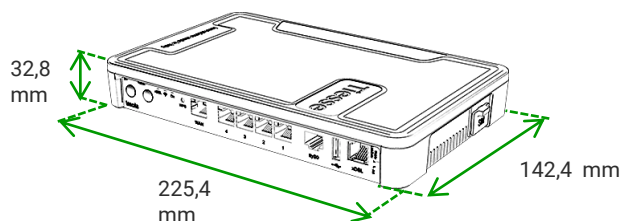
|                                           |                                                                                                                                            |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Power</b>                              | - 12V AC/DC Adapter<br>- On/Off button                                                                                                     |
| <b>Cooling</b>                            | Fanless                                                                                                                                    |
| <b>Consumption</b><br>(full functions)    | ≈ 6W                                                                                                                                       |
| <b>EEE</b><br>(Energy-Efficient Ethernet) | Tiesse products comply with the EEE (802.3az) standard, which saves energy by automatically switching off Ethernet ports when not in use.  |
| <b>Dynamic Power Scaling</b>              | Tiesse products use control mechanisms to automatically reduce power consumption by lowering the CPU clock frequency when the load is low. |
| <b>Mean Time Between Failure (MTBF)</b>   | ≈ 1181724 hours                                                                                                                            |

### ENVIRONMENT DATA

|                                            |                      |
|--------------------------------------------|----------------------|
| <b>Operating temperature</b>               | –5° C / +50° C       |
| <b>Storage temperature</b>                 | –40° C / +70° C      |
| <b>Maximum relative operating humidity</b> | 93% (non condensing) |
| <b>Protection grade</b>                    | IP40                 |

### SIZE and WEIGHT – IMOLA LX 0272-IKW-V

|                     |                                                               |                    |                  |
|---------------------|---------------------------------------------------------------|--------------------|------------------|
| <b>Machine body</b> | 225,4 x 142,4 x 32,8 (L x P x A mm)                           |                    |                  |
|                     | ≈ 770 gr (maximum weight including packaging and accessories) |                    |                  |
| <b>Weight</b>       | <b>Product</b>                                                | <b>Accessories</b> | <b>Packaging</b> |
|                     | ≈ 410 gr                                                      | ≈ 260 gr           | ≈ 100 gr         |



### OTHER INFORMATION

|                               |                                                                                                                                                                                                                                                           |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Packaging and wrapping</b> | The packaging material of this product is ≈89% paper/cardboard, and the incidence of plastic packaging is about 11% or less.<br>100% of the packaging material is recyclable                                                                              |
| <b>RAEE waste</b>             | 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 <a href="mailto:raee@tiesse.com">raee@tiesse.com</a> |



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](http://www.tiesse.com).



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