



# Imola LX 0272-IKF



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## eVDSL and fiber router

### SERIE IMOLA LX x272

The **Imola LX x272** series is an advanced line of routers with eVDSL 35b plus and Gigabit Ethernet WAN connectivity, designed specifically for business applications that require high security standards and optimal network performance.

The compact size 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 eVDSL, 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-IKF is a high-performance Router/ IAD designed for professional eVDSL networks and analog voice links up to 2 calls, ideal for businesses and commercial establishments that need reliability and advanced management of data and voice traffic.


Imola LX 0272-IKF offers advanced Quality of Service (QoS), security and routing features.




## 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**

- Data Services for Small and Medium-sized Enterprises
- Banks and Insurance
- Retail

## 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.

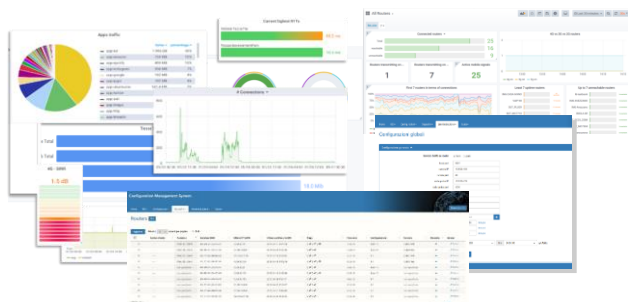
### Homogeneous Backup

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.

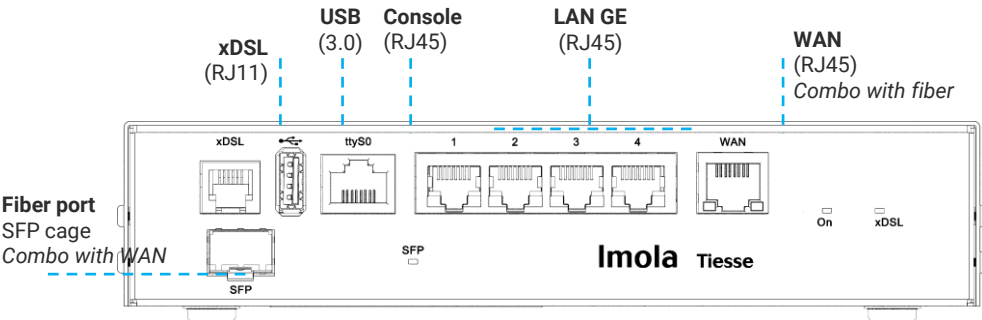
**TNA** is the modular software suite that enables Zero Touch Provisioning network architecture, including monitoring, remote and automated web-based management of configurations and firmware releases of the installed fleet; it enables traffic engineering, network overlays, and many other functionalities.

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

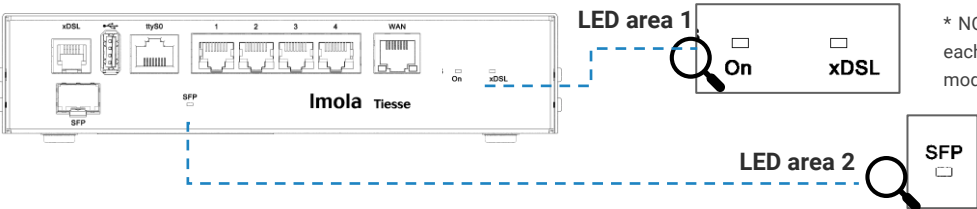


HARDWARE INTERFACES

Port	N°	Type	Details
LAN	4	GE	10/100/1000 Mbps
	1	GE	10/100/1000 Mbps (label WAN)
	1	Fiber	1 port with SFP cage for fibre and GPON connections - combo with GE WAN port (SFP transceiver module not included)
WAN			Full rate ADSL2/2+ / eVDSL
		ADSL2/2+	<ul style="list-style-type: none"><li>- Downstream data rate up to 24 Mbps and upstream data rate up to 3.5 Mbps</li><li>- Compliant with Standard G.992.1 annex A, B, C &amp; 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</li><li>- ADSL-over-ISDN, ITU T-I361, ITU T-I.363.5, ITU T-I.432, ITU T-I610, ITU T-I731</li></ul>
	1	VDSL2	<ul style="list-style-type: none"><li>- Support for all VDSL2 profiles: 8 MHz up to 30 MHz ITU-T G993.2</li><li>- Compliant with G.Vector standard (ITU-T G.993.5)</li><li>- Compliant with ITU-T G.998.4 G.INP standard</li><li>- Compatible with ADSL2 (backward compatibility)</li></ul>
		eVDSL	<ul style="list-style-type: none"><li>- Support for all VDSL2 profiles: 8 MHz up to 35 MHz, in compliance with ITU-T G993.2 Annex Q (35b or Vplus profiles), capable of aggregate rates of up to 400Mbps</li><li>- G.Vector support (ITU-T G.993.5)</li><li>- Compliant with ITU-T G.998.4 G.INP standard (impulse noise protection)</li><li>- Compatible with ADSL2 (backward compatibility)</li><li>- Excellent connection stability in case of line disturbances</li></ul>



LEDs



\* NOTE: The use of LEDs depends on the active functionality of each specific model. The figure shows the LEDs used in the model covered by this datasheet.

LED	Color	Position	Details
Power	Green	LED area 1	Power status
xDSL	Green	LED area 1	xDSL connection status
LAN	Yellow	On the LAN port	One for each ETH port, 1Gbps connection status
	Green	On the LAN port	One for each ETH port, 100 Mbps connection status
Fiber	Green	LED area 2	indicates operational status Steadily lit: active connection Blinking: presence of data traffic



## 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
- 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

<b>PROCESSOR</b>	RISC Network processor
<b>MEMORY</b>	DRAM 256 MB – DDR3
<b>FLASH MEMORY</b>	256 MB
<b>CHASSIS</b>	Metallic material, black color
<b>FORM FACTOR</b>	Desktop

## ADD-ONS

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

Please consult the relevant datasheets, which can be downloaded from [www.tiesse.com](http://www.tiesse.com).



Images for illustrative purposes

## OTHER INFORMATION AND SUPPORT

### [SUPPORTO.TIESSE.COM](http://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](http://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>	<ul style="list-style-type: none"><li>- 12V AC/DC Adapter</li><li>- On/Off button</li></ul>
<b>Cooling</b>	Fanless
<b>Consumption</b> (full functions)	≈ 8W
<b>EEE</b> (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>	≈ 751608 hours

### OTHER INFORMATION

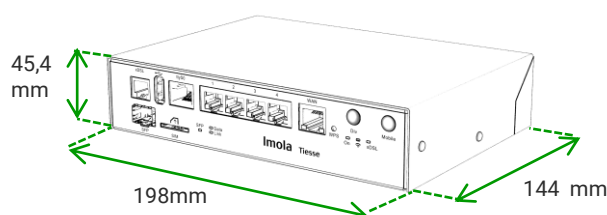
<b>Packaging and wrapping</b>	<p>The packaging material of this product is ≈92% paper/cardboard, and the incidence of plastic packaging is about 8% or less.</p> <p>100% of the packaging material is recyclable</p>
<b>RAEE waste</b>	For the correct disposal of Waste Electrical and Electronic Equipment (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>

### 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-IKF

<b>Machine body</b>	198 x 144 x 45,4 (L x P x A mm)		
	≈ 1485 gr (maximum weight including packaging and accessories)		
<b>Weight</b>	<b>Product</b>	<b>Accessories</b>	<b>Packaging</b>
	≈ 945 gr	≈ 425 gr	≈ 95 gr





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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Ver. ENG 221025

