Tiesse
Innovation made in Italy®

Imola LX
x272-IKW

GE · **EVDSL** · **2.4 GHz** · **4G LTE**

Imola LX
x272-IKW

Ultrabroadband eVDSL2, Wi-Fi and LTE router

The **Imola LX** router series is part of the evolution of the IMOLA line, which are certified routers used in the networks of the main telecommunications operators: the models are particularly suitable to be used in business applications where security, service continuity and network performance are of primary importance.

Imola LX support ultra broadband connectivity both fixed and mobile in a all-in-one device, which integrates routing, switching and modem functionalities.

FUNCTIONALITIES	KEY BENEFITS	APPLICATIONS AND SCENARIOS

FUNCTIONALITIES

⇒ Routing

⇒ Switching

⇒ Multi fail-over

⇒ QoS

KEY BENEFITS

⇒ Security

⇒ Service continuity (always-on connectivity, multiple backups)

⇒ Quality of Service (QoS)

⇒ Hardware and software at the highest levels of reliability

⇒ Zero touch provisioning

⇒ Factory pre-configuration, different for each client

⇒ SIMs are installed and tested in factory on each device

⇒ 100% of the routers are tested in factory (as well as the SIM cards of the 4G models)

⇒ Very low energy consumption

APPLICATIONS AND SCENARIOS

Imola LX models are installed at the client's locations (customer premises), in business scenarios such as:

⇒ Services and offer profiles of Telco operators, internet and digital service providers

⇒ Distributed and secure access to branches and remote locations of banks, insurance companies, dealers, franchises, companies and public administrations

⇒ Backup and redundancy of ultra broadband networks

MODELS AND FEATURES

IMOLA LX 0272-IKW

IMOLA LX 5272-IKW

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 operational costs.
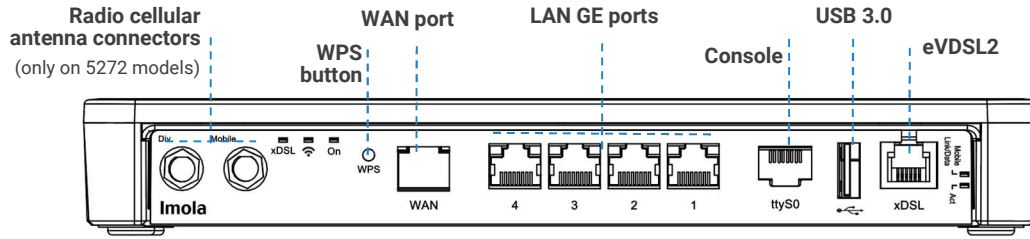
Multiple backup - A pair of routers in VRRP performs physical backup of both network and hardware

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).

Tiesse | Router series datasheet

Imola LX x272-IKW - eVDSL, Wi-Fi and LTE router | Connectivity for ultrabroadband data networks

HARDWARE INTERFACES

Port	Description	Details
LAN	— **GE**	— 4 ports 10/100/1000 Mbps, connettore RJ45
	— **Wi-Fi**	— 1 port 802.11 b/g/n port (2.4 GHz) 2x2
WAN	— **GE**	— 1 port GE 10/100/1000 Mbps, connector RJ45 (etichetta WAN)
	— **ADSL 2/2+** — **VDSL** — **eVDSL**	— 1 port with RJ-11 connector, Full rate ADSL2/2+ / VDSL2
		ADSL2/2+ — Downstream data rate up to 24 Mbps — Upstream data rate up to 3.5 Mbp — Standards-compliant 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 ADSL-over-ISDN, ITU T-I361, ITU T-I.363.5, ITU T-I.432, ITU T-I610, ITU T-I731
		VDSL2 — Support for all VDSL2 profiles: 8 MHz to 30 MHz ITU-T G993.2 — G.Vector standard-compliant (ITU-T G.993.5) — ITU-T G.998.4 G.INP standard-compliant — ADSL2 compatible (backward compatibility)
		eVDSL2 — Support 35 MHz ITU-T G993.2 Annex Q (35b or Vplus) profile with aggregate rates up to 400 Mbps
Radio Cellular (modelli 5272)	— **GSM** — **UMTS** — **DC-HSPA+** — **LTE**	— 1 radio cellular LTE cat. 4 port. Category 6 and 12 versions available on request
		GSM / GPRS / EDGE — Frequency bands: 900/1800/1900 MHz — GPRS multislot 10, EDGE multislot 12
		UMTS / HSDPA / HSUPA / HSPA+ — Frequency bands: 900/2100 Mhz — HSDPA data rates up to category 20 — HSUPA data rates up to category 6
		DC-HSPA+ — DC-HSPA+ (42 Mbps in DL)
		LTE — Frequency bands: 800 / 900 / 1800 / 2100 / 2600 Mhz — Data rates category 4, MIMO — Peek data rates 150 Mbps DL, 50 Mbps UL (actual throughput is dependent on network configuration, bandwidth assigned to the UE, the number of users and RF signal conditions) — WCDMA 900/2100
Console		— 1 port with RJ45 connector
USB		— 1 USB 3.0 port

Imola LX x272-IKW - eVDSL2, Wi-Fi and LTE router
Connectivity for ultrabroadband data networks

LEDS DESCRIPTION

* NOTE: The use of LEDs depends on the active functionality of each specific model. The figure above highlights the LEDs used in the model covered by this datasheet.
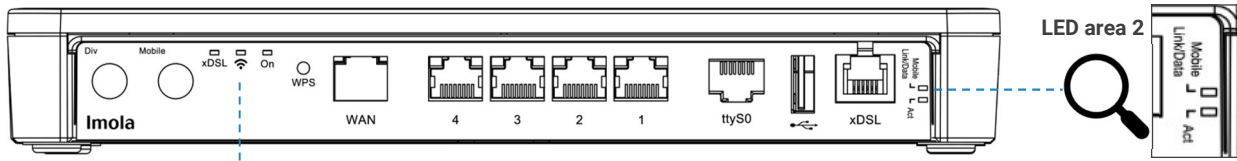
LED area 2

LED area 1

LED	Color	Position	Description
Power	**Green**	— Led area 1	— 1 x power / operative status
Wi-Fi	**Green**	— Led area 1	— 1 x operative status
	Green	— Led area 2	— 1 x authentication status (Act)
xDSL	**Green**	— Led area 1	— 1 x operative status
LAN	**Yellow/Green**		— 2 on each port, for operative status
Radio Cellular (5272 models)	**Yellow**	— Led area 2	— 1 x radio cellular connection status (Link)
	Green	— Led area 2	— 1 x radio cellular data activity (Data)

eVDSL2 - NEW GENERATION NETWORK

Support of the new generation networks (NGN) and ensuring:

• Support for all VDSL2 profiles: 8 MHz up to 35 MHz in accordance with ITU-T G993.2 Annex Q (35b or Vplus profiles) capable of aggregate rates of up to 400Mbps

• G. Vector (ITU-T G.993.5)

• Compliant with ITU-T G.998.4 standard G. INP (impulse noise protection)

• Compatible with ADSL2 (backward compatible)

• Excellent connection stability in case of line disturbances

CARATTERISTICHE 4G

• LTE with data rates of 150 Mbps on the downlink and 50 Mbps on the uplink

• HSPA+, with data rates of 21.1 Mbps on the downlink and 5.7 on the uplink with EDGE / GPRS fallback

• Dual Cell HSPA mode support

• Multiple Input/Multiple Output (MIMO) support provided

• Possibility of configuring and activating two APNs simultaneously

• Removable external antennas with male SMA connector - various types of optional antennas available (outdoor, omni-directional, directional, high-gain)

ZERO TOUCH PROVISIONING

Imola LX routers 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 configuradions 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.
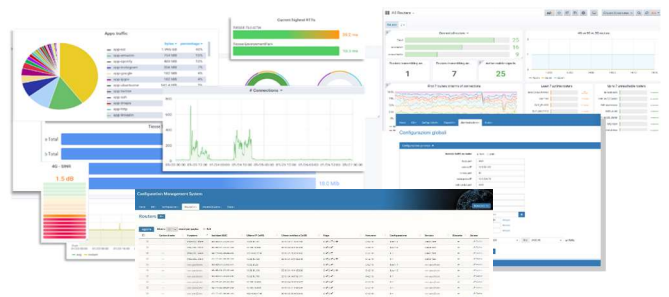
SOFTWARE

* Nota: le funzionalità software dipendono dalla versione e dal livello di aggiornamento del firmware del prodotto.

Area	Main features	
NETWORKING	− TCP-UDP IPv4	− IPv6
LAYER 2 FEATURES	− LAN Bridging − VLAN support on LAN interface 802.1q 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 − VRRP (Virtual Routing Redundancy Protocol) with IPv4-IPv6 authentication	− IGMP v1-v2-v3, IGMP snooping, IGMP proxying − Routing Multicast with sparse-mode PIMv2 and PIMv2 dense-mode, MSDP − IEEE 802.1d (Spanning Tree Protocol)
QOS	− Traffic classification based upon source IP, based on a combination of source IP, destination IP, protocol (UDP, ICMP, TCP, etc), upon DSCP/IP precedence, ToS or Port − DiffServ − CoS on VLAN − QoS on ATM classes	− Shaping with guaranteed allocated bandwith and redistribution of bandwith excess − Committed Access Rate e Multicast rate Limit − Mechanisms of traffic prioritization, ability to define 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 (radio mobile network optimization) − VPN con IPSEC/ESP o IPSEC/AH IKEv1/IKEv2 − 3 DES Encryption
SERVICES	− DHCP client, DHCP server with antispoofing functions, DHCP Layer Discovery Protocol IEEE 802.1ab, DHCP relay − Intelligent DNS Proxy, both local and remote − Traceroute	− NTP Client and Server support − Easy VPN − DDns
MANAGEMENT AND 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 − SAA (Service Assurance Agent) − Fault management Syslog /Trap − Radius Support, TACACS+	− Tracking for backup management, commands and events scheduled − Software update via TFTP, FTP, HTTP, HTTPS, SCP − Configuration via command Line Interface (CLI), Text/Menu oriented and Telnet − TNA (Tiesse Network Architecture) suite for remote self-provisioning and automated management − Management of an unlimited number of configurations

ONE ROUTER, THREE MOUNTING OPTIONS

On a horizontal plane, such as a desk

Vertical position, thanks to the use of a special bracket

Wall mounting, using the same bracket for vertical positioning

Imola LX x272-IKW - eVDSL2, Wi-Fi and LTE router
Connectivity for ultrabroadband data networks

SYSTEM FEATURES

POWER	– 12V AC/DC Adapter – Pulsante ON/OFF
CONSUMPTION	– < 12W Full Configuration
FANS	– Fanless
PROCESSOR	– RISC Network processor
MEMORY	– 256 MB - DDR3
FLASH MEMORY	– 256 MB
ENVIRONMENT	– Operating temperature: −5°C / +50° C – Storage temperature: −40°C / +70°C – Maximum relative operating humidity: 93% (non-condensing)

EXTERNAL FEATURES

|	
MATERIAL	– Plastic chassis
COLOR	– Black
FORM FACTOR	– Desktop
Wi-Fi ANTENNAS	– Internal
LTE ANTENNAS	– 2 external, removable antennas with male SMA connector
LTE ANTENNA ADD-ONS	– Optional antennas are also available for outdoor, high-look, omnidirectional and directional installations. – See datasheet available at www.tiesse.com

SIZE

Horizontal positioning

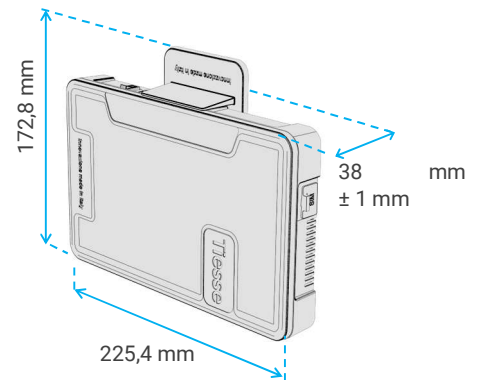On horizontal flat surface, without bracket.

225,4 mm
29,7 mm
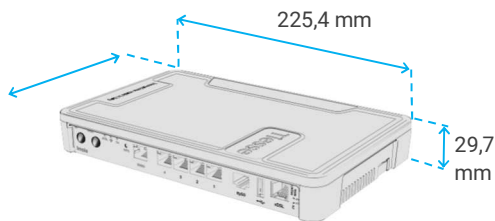
STANDARD WEIGHT
LX 0272-IKW: 520 gr ±10%
LX 5272-IKW: 620 gr ± 10%

Vertical desktop mounting with bracket

142,4 mm
233 mm ± 1 mm
90,8 mm
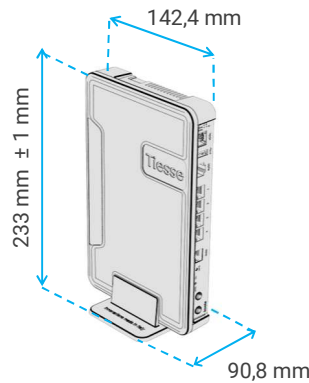
Wall mounting with bracket
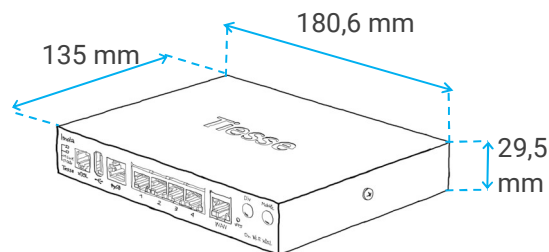

172,8 mm
38 mm ± 1 mm
225,4 mm

METAL CHASSIS VARIANT

Metal chassis variant available with extended operating temperature range (-25°/+70°) for volume or industrial projects. Wi-Fi and cellular radio antennas are all external.

STANDARD WEIGHT
660 gr ± 10%

180,6 mm
135 mm
29,5 mm

Supporto on-line su:

Supporto.tiesse.com: portal with technical documentation, installation instructions, software updates and how to request technical support.

Wiki.tiesse.com: site dedicated to software documentation; it includes user manuals, first access guides, case studies, tutorials and other useful resources for using the products.

Tiesse | Router series datasheet

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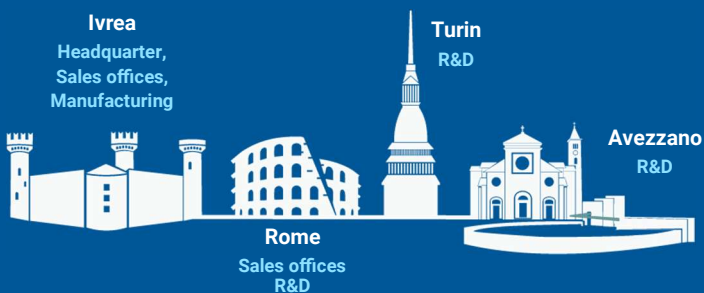
Further information on Tiesse solutions can be found on the company website www.tiesse.com.

Info: mail@tiesse.com

Marketing & Sales: marketing@tiesse.com

www.tiesse.com

Ivrea
Headquarter,
Sales offices,
Manufacturing

Turin
R&D

Avezzano
R&D

Rome
Sales offices
R&D

Via Asti 4

10015 Ivrea (TO)

Tel +39.0125230544

Fax +39.0125631923

Viale L. Gaurico 9/11

00143 Roma EUR

Tel +39.0654832203

Fax +39.0654834000

Via Livorno 60
10144 Torino (TO)

Via C. Corradini 80
67051 Avezzano (AQ)

Disclaimer
The informations in this document may contain predictive statements including, without limitation, statements regarding the future financial and operating results, future product portfolio, new technology, etc. There are a number of factors that could cause actual results and developments to differ materially from those expressed or implied in the predictive statements. Therefore, such information is provided for reference purpose only and constitutes neither an offer nor an acceptance. Tiesse may change the informations at any time without notice.

Ver. ENG 170225