

Imola

x872-IK2V-IK2F-IK2W models

Ultra broadband dual eVDSL, dual Fiber,
dual Wi-Fi and 4G router

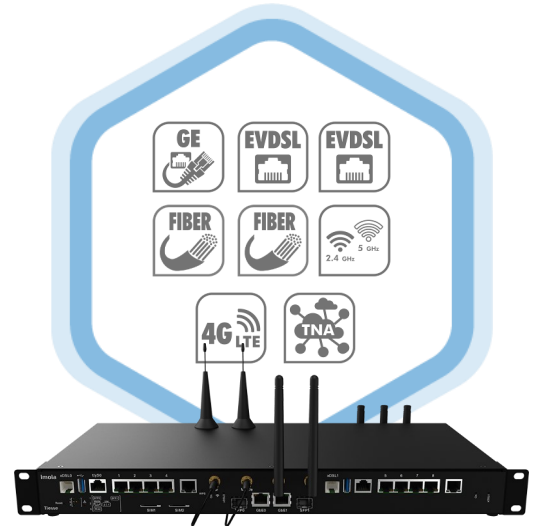


Datasheet

Imola

x872-1K2V-1K2F-1K2W

Ultra broadband dual eVDSL, dual Fiber, dual Wi-Fi and 4G router



It is an innovative line of ultra broadband eVDSL dual link routers, Fiber (2 SFP cage) WAN Giga Ethernet and LTE.

The 5872 models also feature built-in LTE mobile radio connectivity while 1K2W models have dual Wi-Fi.

FEATURES

Imola x872-1K2V-1K2F-1K2W models, whose fit into the evolution of the **Imola** series, are an innovative series of routers with ultra broadband eVDSL double link, FTTH (2 SFP cages), WAN Giga Ethernet, dual Wi-Fi and LTE features.

- **Routing**
- **Switching**
- **Multi fail-over**
- **QoS**
- **VoIP**
- **Sicurezza**

For the fiber and eVDSL new generation networks.

KEY BENEFITS

- ⇒ Double eVDSL link, two fiber ports and dual Wi-Fi
- ⇒ Always-on connectivity and service continuity
- ⇒ Security
- ⇒ Easy installation and factory pre-configuration
- ⇒ SIMs are installed and tested in factory on each device
- ⇒ Remote management and provisioning
- ⇒ Scalability
- ⇒ Multiple backup
- ⇒ Zero touch provisioning

APPLICATIONS

Imola x872-1K2V-1K2F-1K2W models are particularly suited for business applications where security, continuity of service and network performances are of primary importance.

- Enterprise WAN network access
- Branches and remote offices of banks and insurance companies
- Lottery
- Gaming networks
- Retail
- Backup for broadband networks

MODELS



IMOLA 0872-1K2V-1K2F-1K2W



IMOLA 5872-1K2V-1K2F-1K2W

SDN

For all Imola x872-1K2V-1K2F-1K2W models Network Configuration Protocol (**NETCONF**) with **YANG** data model is available.

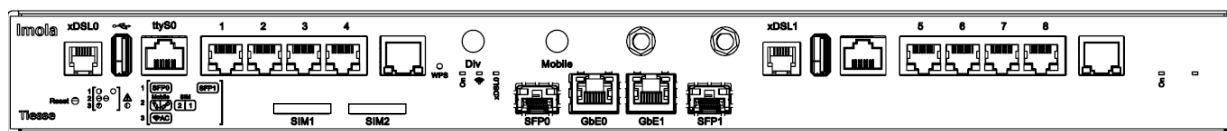
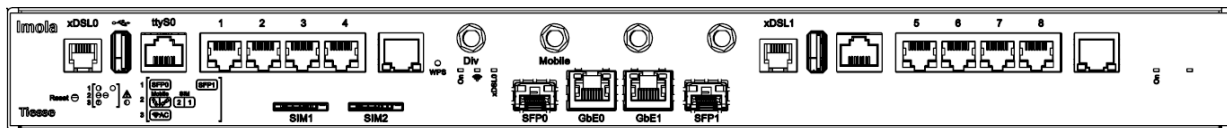
Intelligent Policy Based Routing (IPBR)

All **Imola** routers are equipped with network traffic routing and distribution features that dynamically adapts to the status of the network, link and services.

Thanks to the network traffic classification, the link quality control by measuring Jitter values, One Way Delay, Round Trip Delay and Packet Loss as well as in-band link quality evaluation it is possible to redirect the routing process to the best alternative network path.

Moreover, in case of link fault all *seamless switch-over* features are preserved.

INTERFACES


Imola 0872-IK2V-IK2F-IK2W

Imola 5872-IK2V-IK2F-IK2W

HARDWARE INTERFACES - MODELS x872-IK2V-IK2F-IK2W			0872	5872
LAN	GE	10/100/1000 Mbps ports - RJ45 connectors	10	10
	Wi-Fi	802.11 b/g/n (2.4 GHz) 2x2 + 802.11 ac (5 GHz) port 3x3	1	1
WAN	GE-WAN	10/100/1000 Mbps WAN port- RJ45 connector	2	2
	SFP WAN	SFP Cage for Fiber and GPON connections (SFP module not included)	2	2
		Full rate ADSL2/2+ / VDSL2 - RJ11 connector ADSL2/2+ — Downstream data rate up to 24 Mbps — upstream data rate up to 3.5 Mbps — Compliant to 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 — ADSL-over-ISDN, ITU T-I361, ITU T-I.363.5, ITU T-I.432, ITU T-I.610, ITU T-I.731 VDSL2 — Supports for profiles VDSL2: 8 MHz to 30 MHz — Complaint to G.Vector (ITU-T G.993.5) standard — Complaint to ITU-T G.998.4 G.INP standard — Compatible to ADSL2 (backward compatibility) eVDSL Support of 35 MHz ITU-T G993.2 Annex Q (35b or Vplus) profile with aggregate rates up to 400 Mbps	2	2
RADIO CELLULAR	GSM /GPRS / EDGE	Frequency bands: 900 / 1800 / 1900 MHz GPRS multislots 10 EDGE multislots 12	-	•
	UMTS / HSDPA / HSUPA / HSPA+	— Frequency bands: 900 / 2100 Mhz	-	•
	DC-HSPA+	DC-HSPA+ (42 Mbps in download)	-	•
	LTE	— Frequency bands: 800 / 900 / 1800 / 2100 / 2600 Mhz — Data rates (category 4, MIMO)* — Peak data rates 150 Mbps DL, 50 Mbps UL (actual throughput depends on network configuration, bandwidth assigned to the UE, the number of users and the RF signal conditions)	-	•
CONSOLE		RJ45 connector	1	1
USB		USB 3.0 port	1	1

* category 6 and 12 available on request

Imola x872-1K2V-1K2F-1K2W - Ultra broadband dual eVDSL, dual Fiber, dual Wi-Fi and 4G router

Fiber, eVDSL, wireless LAN and radio mobile connectivity for Business applications

SWITCHING CAPACITY

- Single port capacity equal to the nominal port bandwidth (10/100/1000 Mbps or 10/100 Mbps)
- Total capacity per switching matrix 5,9 Gbps

FIBER ACCESS

- Single and/or multiple fiber access for LAN and WAN via fiber and optic cables
- GPON connections are supported
- Different types of transceivers supported:
 - max data rate 1000 Mbps (SX,BX, LX, ZX)
 - supported connectors: LC simplex, LC duplex, RJ45

eVDSL

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

- Support for VDSL2 profiles: from 8 MHz up to 35 MHz, in accordance with ITU-T G.993.2 Annex Q standard (35b profiles or Vplus) capable of aggregating rates up to 400 Mbps
- G.Vector standard-compliant (ITU-T G.993.5)
- ITU-T G.998.4G.INP standard-compliant (impulse noise protection)
- ADSL2 compatible (backward compatibility)

BACKUP: high availability - mission critical**Seamless backup**

The user doesn't notice any service interruption and the following passage to backup mode.

This passage from Standard mode to backup mode (and viceversa) is accomplished with taking care of operative costs.

Homogeneous Backup

One single router is equipped with both wired and mobile ports.

Multiple backup

Two routers connected with VRRP creates the physical backup of both network and hardware.

Heterogeneous Backup

You can upgrade the devices installed base with a mobile router and use the VRRP protocol (Virtual Router Redundancy Protocol).

Zero Touch Provisioning

Imola x872-1K2V-1K2F-1K2W are integrated in the **TNA (Tiesse Network Architecture)** suite, which is used for the remote and automated management via WEB of the configurations and firmware releases of the installed device park.

4G**Frequencies**

- LTE 800 / 900 / 1800 / 2100 / 2600 Mhz
- WCDMA 900 / 2100 Mhz
- EDGE / GPRS / GSM 900 / 1800 / 1900

Radio interfaces

- LTE with 150 Mbps downlink data rate and 50 Mbps uplink data rate
- HSPA+, with 21.1 Mbps in Downlink data rate and 5.7 in Uplink data rate with fallback EDGE / GPRS
- Support of Dual Cell HSPA mode
- Multiple Input/Multiple Output (MIMO) support included
- It is possible to activate and configure two or more APNs simultaneously

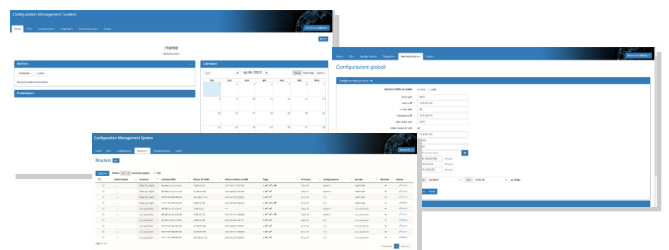
4G ANTENNAS

- Multiple Input / Multiple Output (MIMO) support
- 2 removable antennas (SMA male)
- Optional: outdoor high gain antennas are also available (omnidirectional and directional) for outdoor installation



The x872-1K2V-1K2F-1K2W models can be positioned on a horizontal surface or mounted on a rack thanks to the kit supplied.

In the figure above, Imola 0872-1K2V-1K2F-1K2W has feet for positioning on the top, while in the figure below it is shown with the kit for rack mounting.



SOFTWARE

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

NETWORKING

- TCP-UDP IPv4
- ARP; CMP, IPv4 Path MTU Discovery
- IPv6
- ICMPv6, IPv6 Path MTU Discovery, IPv6 Neighbor Discovery, IPv6 Stateless Address Auto Configuration

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
- Multicast routing with PIMv2 sparse-mode and PIMv2 dense-mode, MSDP
- IEEE 802.1d (Spanning Tree Protocol)

QoS

- Traffic classification based on source IP, on a combination of source IP, destination IP, protocol (UDP, ICMP, TCP, etc) ports, application recognition, IP Precedence and DSCP
- DiffServ
- CoS on VLAN
- QoS on ATM classes
- IPSLA based on QoS
- Remarking di IP Precedence, DSCP and CoS
- Shaping with guaranteed allocated bandwidth and redistribution of bandwidth excess
- Committed Access Rate e Multicast rate Limit
- Mechanisms of traffic prioritization, ability to define an arbitrary number of priority classes
- Link aggregation IEEE 802.3ad

SECURITY

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

SERVICES

- DHCP client, DHCP server with antispoofing functions, DHCP Layer Discovery Protocol IEEE 802.1ab
- Intelligent DNS Proxy, local and remote
- Traceroute
- NTP Client and Server support
- Easy VPN

MANAGEMENT AND CONFIGURATION

- SNMP v1, SNMPv2, SNMPv3
- Telnet server with multiple simultaneous sessions
- SSH server with multiple simultaneous sessions (SSHv2)
- IP SLA support for: One Way Delay, Round Trip Delay, Jitter, Packet Loss
- Fault management Syslog /Trap
- Radius Support, TACACS+
- Tracking for backup management, commands and scheduled events
- Software update via TFTP and FTP
- Configuration via command Line Interface (CLI), Text/Menu oriented and Telnet
- TNA (Tiesse Network Architecture) suite for auto-provisioning and remote automated management
- Management of an arbitrary number of configurations
- Support of Network Configuration Protocol (NETCONF)
- Support of YANG Data Modeling Language for NETCONF



Imola 5872-IK2V-IK2F-IK2W shown with 1U rack mount kit and mounted Wi-Fi and LTE antennas.

SYSTEM FEATURES

POWER

AC/DC adapter (internal Universal 100-240 VAC)
Power Switch ON/OFF
Optional:
DC/DC 12V or DC/DC 24V-48V version

CONSUMPTION

< = 15W (full configuration)

ENVIRONMENT

Operating temperature:
-25°C / +70° (96 hours)
-40°C / +70°C (4 hours)

Storage temperature:
-40° C / +70° C

Max operating humidity:
93% (non condensing)

PROCESSOR

Dual core ARM A9 - 1 GHz

MEMORY

Default 256 MB DDR2

FLASH MEMORY

32 MB up to 1 G

EXTERNAL HARDWARE FEATURES

Material

Metal - black color

Antennas

Radio WLAN (IK2W models)
5 x external removable antennas
SMA male connectors
4G Radio cellular (5872 models)
2 x external removable antennas
SMA male connectors

Mounting

Desktop / horizontal plane

LED INDICATORS

Status LED

1 x power / operative status

Ethernet

2 x operative status - for each port

SFP

1 x operative status - for each port

xDSL

2 x connection status

Wi-Fi

(IK2W models)

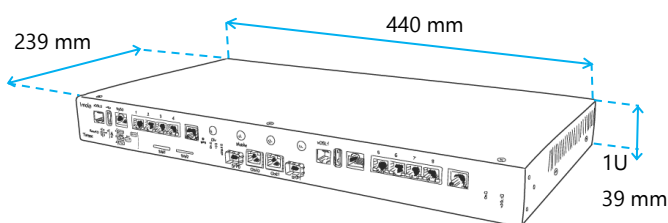
1 x 2.4 GHz radio signal activity
1 x 5 GHz radio signal activity

Radio cellular

(5872 models)

1 x radio-cellular connection status / activity
1 x active SIM status

SIZE



TECHNICAL SUPPORT

Tiesse provides the user with two sites that are constantly updated:

Support.tiesse.com: the site with technical documentation, assembly instructions, software updates, and how to request technical support.

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

ADD-ONS



Please, refer to the specific documentation to learn about all the accessories and SFP modules supported, depending on the product series.

Tiesse
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Tiesse is a 100% italian company which has more than 20 years of expertise in designing, developing, and manufacturing M2M/IoT and network devices. The products series **IMOLA**, **LIPARI** and **LEVANTO**, which are innovative, competitive and certified, are present in the largest distributed national networks (from gas stations to large retailers, insurance companies and banks) as well as in the largest networks of the main gaming operators and energy sector.

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