Tiesse

Innovation made in Italy

Imola

x872-IKF-IKW-PoE

Ultra Broadband eVDSL, fiber and LTE router

Datasheet

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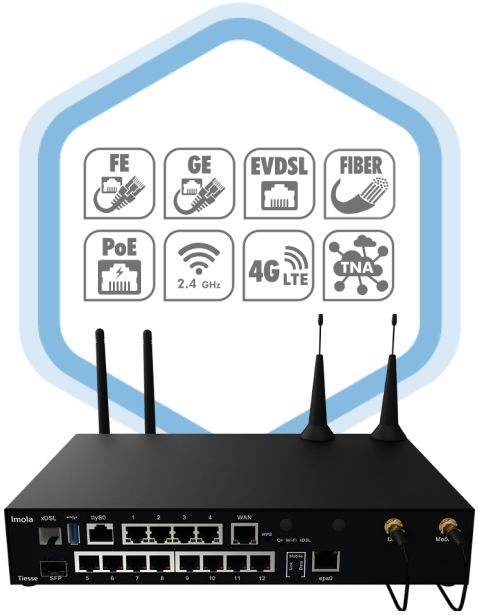


It is an innovative series of routers with ultra broadband VDSL Enhanced and Fiber connectivity, 14 Ethernet ports (of which 5 are Gigabit, 8 Fast Ethernet, 1 PSE type PoE) and Wi-Fi.

The 5872 models also include integrated LTE radio mobile connectivity.

FEATURES

The **Imola x872-IKF-IKW-PoE** series fits into the evolution of the Imola router series, which are certified and used by the main telecommunication operators in their networks.

All Imola routers include the following functionalities:

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

For both the eVDSL and Fiber new generation networks.

KEY BENEFITS

⇒ 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

APPLICATIONS

IMOLA x872-IKF-IKW-PoE models are particularly suited for business applications where security, continuity of service and network performances are of primary importance.

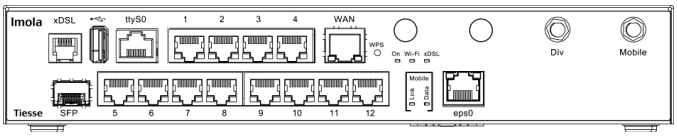
- Enterprise WAN network access
- Branches and remote offices of banks and insurance companies
- Lottery
- Gaming networks
- Retail
- Backup for broadband networks

MODELS

IMOLA 0872-IKF-IKW-PoE

IMOLA 5872-IKF-IKW-PoE

INTERFACES



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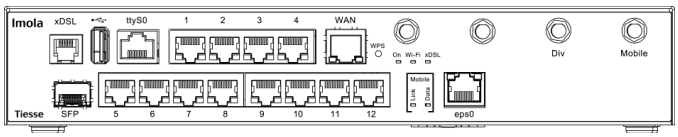


Imola 5872-IKF-IKW-PoE

HARDWARE INTERFACES - MODELS x872-IKF-IKW-POE			0872	5872
LAN	**FE**	10/100 Mbps ports - RJ45 connectors	8	8
	GE	10/100/1000 Mbps ports - RJ45 connectors	4	4
	Wi-Fi	802.11 b/g/n (2.4 GHz) 2x2	1	1
PoE		Label eps0 - RJ45 connector Compliant to IEEE.802.3at standard - Type 1 (af) and Type 2 Endpoint PSE alternative A Maximum output power available: up to 30 W	1	1
WAN	**GE-WAN**	10/100/1000 Mbps WAN port - RJ45 connector (label WAN)	1	1
	SFP WAN	SFP Cage for Fiber and GPON connections (SFP module not included)	1	1
	ADSL 2/2+ **VDSL** **eVDSL**	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-I610, ITU T-I731 **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	1	1
RADIO CELLULAR	**GSM /GPRS / EDGE**	Frequency bands: 900 / 1800 / 1900 MHz GPRS multislot 10 EDGE multislot 12	-	•
Lte models only	**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+	42 Mbps in download	-	•
	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 depends on actual throughput depends on network configuration, bandwidth assigned to the UE, the number of users and the RF signal conditions) – WCDMA 900/2100	-	•
CONSOLE		RJ45 connector	1	1
USB		USB 3.0 port	1	1

* category 6 and 12 available on request

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 G993.2 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)

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

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

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

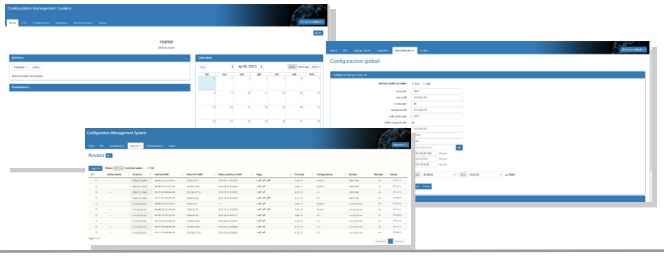
You can upgrade the devices installed base with a mobile router and use the VRRP protocol (Virtual Router Redundancy Protocol).

Imola 5872-IKF-IKW-PoE

Imola 5872-IKF-IKW

Zero Touch Provisioning

Imola x872-IKF-IKxW 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.



SOFTWARE 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
- 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
- IP Precedence remarking, DSCP and CoS
- QoS on ATM class
- 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
- Link aggregation IEEE 802.3ad

SECURITY

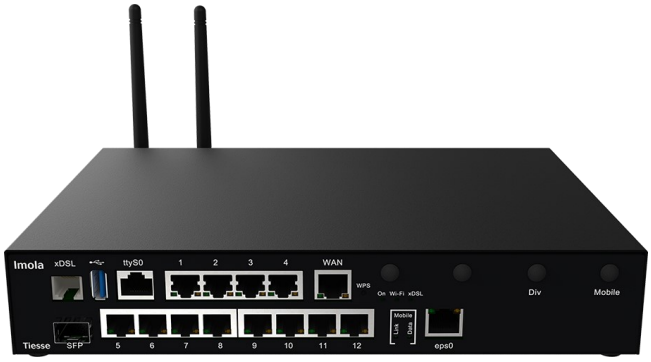
- NAT/PAT
- ACLs, Stateful Firewall
- SSL Tunnelling
- GRE Tunnelling with keep alive and key sequence numbering (radio mobile network optimization)
- VPN with IPSEC/ESP or IPSEC/AH IKEv1/ IKEv2

SERVICES

- DHCP client, DHCP server with antispoofing 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 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
- 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



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SYSTEM FEATURES

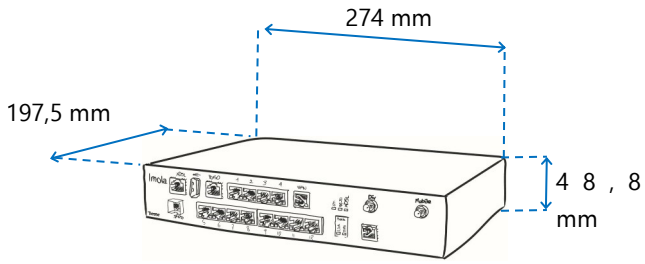
POWER	AC/DC adapter (internal Universal 100-240 VAC) Power Switch ON/OFF Optional: DC/DC 12V or DC/DC 24V-48V version
CONSUMPTION	<= 12 W (full configuration)
ENVIRONMENT	**Operating temperature**: –25° C / +70° C (96 hours) **Storage temperature**: –40° C / +70° C **Max operating humidity**: 93% (non condensing)

PROCESSOR	RISC Network processor
MEMORY	DRAM 256 MB
FLASH MEMORY	256 MB

EXTERNAL HARDWARE FEATURES

Material	Metal - black color
Antennas	**Radio WLAN** 2 external removable antennas for IKW models 5 external removable antennas for IK2W models SMA male connectors **4G Radio cellular** (5872 model) 2 x external removable antennas SMA male connectors
Mounting	Desktop / horizontal plane

SIZE

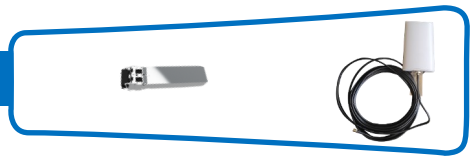


STANDARD WEIGHT	1950 gr ±10%

LED INDICATORS

Status LED	1 x power / operative status
Ethernet	2 x operative status - for each port
xDSL	1 x connection status
Wi-Fi	1 x radio signal activity
Radio cellular (5872 model)	1 x radio-cellular connection status
	1 x radio-cellular data activity

ADD-ONs



Various accessories are available for the Imola series, such as rack mounting kits, SFP transceiver modules and omnidirectional and directional antennas, which can also be used outdoors (for models with cellular connectivity).

Refer to the specific documentation, available on the company website www.tiesse.com

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

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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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