Tiesse

Innovation made in Italy

Lipari 5100

4G cellular router

Datasheet

www.tiesse.com

Tiesse
innovation made in Italy®

Lipari 5100

LAN/Serial connectivity towards 4G (LTE) networks

Lipari is an innovative line of routers that provides LTE connectivity to the user who accesses the public or private data network (Internet / Intranet) with the appropriate level of security. Using the operator with the best network coverage, depending on the installation site, also increases the reliability of the end-to-end solution.

KEY BENEFITS

- ⇒ Always-on connections and service continuity
- ⇒ Safety
- ⇒ Ease of installation and factory pre-configurations
- ⇒ SIMs are installed and tested in the factory for each single device
- ⇒ Remote management and provisioning
- ⇒ Scalability
- ⇒ Multiple backup
- ⇒ Zero touch provisioning

APPLICATIONS

Lipari 5100 is particularly suitable to be used in:

- Temporary installations
- Outdoor installations
- Disadvantaged locations not reached by landlines
- Backup to the main network
- Totems, Vending Machines, ATMs
- Digital Signage
- Video surveillance
- Remote control/Telemetry/Remote monitoring
- M2M / IoT applications in industrial environments

IEC 61850-3

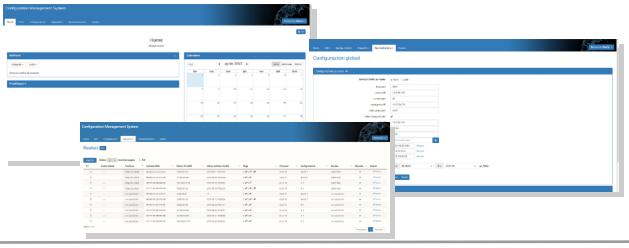
Lipari 5100 is compliant with the IEC 61850-3 standard, relating to the functions for communication and automation of the equipment that can be installed within power systems and electricity substations (and similar environments).

M2M / IoT

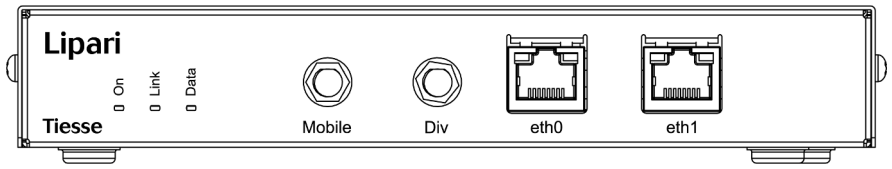
The reliability and power options features provided by **Lipari 5100** make the router particularly suitable for installation and use in industrial environments, as well as in machine to machine application scenarios.

Zero Touch Provisioning

Lipari 5100 routers 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.



INTERFACES



HARDWARE INTERFACES - LIPARI 5100 MODEL			Lipari 5100
LAN	**FE**	10/100 Mbps ports - RJ45 connector, with or without auto-negotiation and configurable	2
RADIO CELLULAR	**GSM /GPRS / EDGE**	GSM 850 (850 MHz) EGSM 900 (900 MHz) DCS 1800 (1800 MHz) PCS 1900 (1900 MHz) EDGE throughput up to 236 kbps	•
	UMTS (WCDMA) / HSDPA / HSUPA / HSPA+ / DC-HSPA+	– Band 1 (2100 MHz) – Band 2 (1900 MHz) – Band 5 (850 MHz) – Band 6 (800 MHz) – Band 8 (900 MHz) **HSPA+:** rates Downlink: Up to 42 Mbps (category 24), Uplink: Up to 5.76 Mbps	•
	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		Connettore DB9 Asincrono fino a 115.2 Kbps	1

4G

Frequency

- 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 APN simultaneously

4G ANTENNAS

- 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

Digital Divide AND Mobilità

... wherever you are...

Access

- It is possible to access company data from any external location even on the move (agents, branch offices, temporary offices in fairs or construction sites).
- It is possible to grant immediate access to the network without waiting for the activation of the fixed line
- In case of temporary or itinerant installations (fairs, events, events, seasonal services)
- Access to the network is immediate and does not require special facilities.
- It is the ideal and optimized solution for single unattended workstations (Kioski) for payment services, advertising, information points, gaming.

Security

Guaranteed secure VPN communication even on the public network. IPSEC with 3DES - Data protection

Installation

Easy and immediate installation, possibility of ex-factory configuration

Performances

Optimization of the use of the mobile radio channel to control traffic costs and improve transmission quality: asynchronous notifications, control messages, inactivity time, removable antenna to allow the use of high gain or outdoor ones

* category 6 and 12 available on request

Compliance to EMC (Electromagnetic Compatibility) IEC 61850-3:2014-12		
IEC Standard	**Description**	**Ports**
IEC 61000-4-8	Magnetic Field	Enclosure Ports
IEC 61000-4-3	Radiated RFI	Enclosure Ports
IEC 61000-4-2	ESD	Enclosure Ports
IEC 61000-4-4	Burst (Fast Transient)	Signals Ports Low voltage D.C power ports Low voltage A.C power ports
IEC 61000-4-5	Surge	Signals Ports Low voltage D.C power ports Low voltage A.C power ports
IEC 61000-4-6	Induced (Conducted) RFI	Signals Ports Low voltage D.C power ports Low voltage A.C power ports
IEC 61000-4-16	Mains Frequency Voltage	Signals Ports Low voltage D.C power ports
IEC 61000-4-17	Ripple on D.C Power Supply	Low voltage D.C power ports
IEC 61000-4-18	Dumped oscillatory	Signals Ports Low voltage D.C power ports Low voltage A.C power ports
IEC 61000-4-29	Voltage Dips and Interrupts	Low voltage D.C power ports
IEC 61000-4-11	Voltage Dips and Interrupts	Low voltage A.C power ports

SOFTWARE

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

NETWORKING

- TCP-UDP IPv4
- QoS

LAYER 2 features

- Layer 2 Protocol Tunneling (L2PT) v3
- VLAN 802.1q over Ethernet
- Pseudowire Ethernet to extend layer-2 circuits over IP networks

ROUTING & MULTICAST

- Static, RIPv1, RIPv2
- BGP-4, BGP-4+
- OSPFv2
- VRRP (Virtual Routing Redundancy Protocol)
- IGMP proxying
- Multicast routing with PIMv2 sparse-mode and PIMv2 dense-mode

SICUREZZA

- NAT/PAT
- ACLs, Stateful Firewall
- GRE Tunnelling with keep alive and key sequence numbering (cellular network optimization)
- VPN with IPSEC
- Easy VPN, DMVPN, Open VPN
- 3 DES Encryption

SERVIZI

- DHCP client, DHCP server and relay
- Traceroute
- DDns

GESTIONE E CONFIGURAZIONE

- SNMP v1, SNMPv2, SNMPv3
- Telnet server
- SSH server with multiple simultaneous sessions (SSHv2)
- Fault management Syslog local and remote
- Radius Support, TACACS+
- SAA (service Assurance Agent)
- SMS
- Configuration via command Line Interface (CLI), Text/Menu oriented and Telnet
- Configuration via web interface on HTTP protocol
- TNA (Tiesse Network Architecture) suite for auto-provisioning and remote automated management

SYSTEM FEATURES

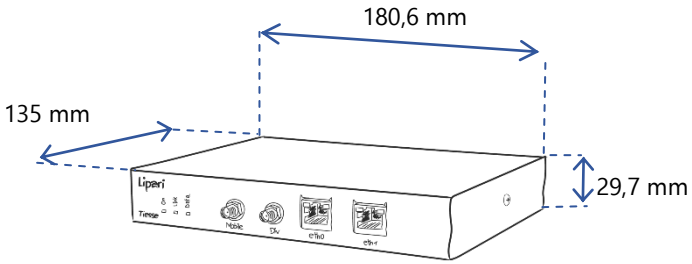
POWER	5 V Optional: 9-36 VDC
CONSUMPTION	< 3 W
ENVIRONMENT	**Operating temperature**: –25° C / +55° C –40° C / +70° C - limit range of operation **Storage temperature**: –40° C / +70° C **Max operating humidity**: 95% (non condensing)

PROCESSOR	Network processor @400 Mhz
MEMORY	Default 128 MB
FLASH MEMORY	256 MB

EXTERNAL FEATURES

Material	Metal black
Antennas	**Radio cellular** 2 x external removable 4G antennas. SMA male connectors
Mounting	On horizontal plane or 1U rack (optional rack mounting kit)

SIZE



LED INDICATORS

Status LED	1 x power / operative status
Ethernet	2 x operative status - for each port
Radio cellular	1 x status/activity radio cellular connection 1 x SIM operative status

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

Lipari 5100 models are provided with optional add-ons like omnidirectional outdoor antennas and brackets for mounting on a 1U rack.

Refer to the specific documentation on both add-ons and supported SFP transceiver for more information.

Tiesse
innovation made in Italy®

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.

Web site: www.tiesse.com
Information: mail@tiesse.com | **Marketing & Sales:** marketing@tiesse.com

Ivrea – Headquarter - Sales offices, Manufacturing facility and R&D: Via Asti 4, 10015 Ivrea (TO) - Tel +39.0125230544 - Fax +39.0125631923
Rome – Sales offices and R&D: Viale L. Gaurico 9/11, 00143 Roma EUR - Tel +39.0654832203 - Fax +39.0654834000
Turin - R&D: Via Livorno 60, 10144 Torino (TO) | **Avezzano** - R&D: Via C. Corradini 80, 67051 Avezzano (AQ)