Teldat

VYDA 2M

Installation Manual

Legal Notice

Warranty

This publication is subject to change.

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Table of Contents

I Important Information

⚠️ **Caution**

The manufacturer reserves the right to make changes and improvements to the appropriate features in both the software and hardware of this product, modifying the specifications of this manual without prior notice.

The images presented on the front and back panels of the devices are provided as an information guideline only. Some small modifications may exist in the actual device.

⚠️ **Warning**

The equipment is intended to be installed by Service Personnel and only handled by qualified personnel. If not, the device may be damaged and malfunction.

This device contains elements that are sensitive to electrostatic surges and shocks. Therefore, it is essential when handling the equipment that an antistatic wriststrap is connected to the device chassis and that this is placed on an antistatic mat. Furthermore, it is crucial to avoid any kind of contact between the device components and necklaces, bracelets, rings, ties etc.

Chapter 1 Installing the Media Gateway

1.1 Introduction

The **VYDA 2M** is a modular device designed to operate as an IP Telephony Media gateway.

The **VYDA 2M** executes the Teldat CIT (Teldat Internetworking Code - Código de Internetworking de Teldat), which runs over all the Teldat router families and is characterized by the wide variety of functionalities it supports.

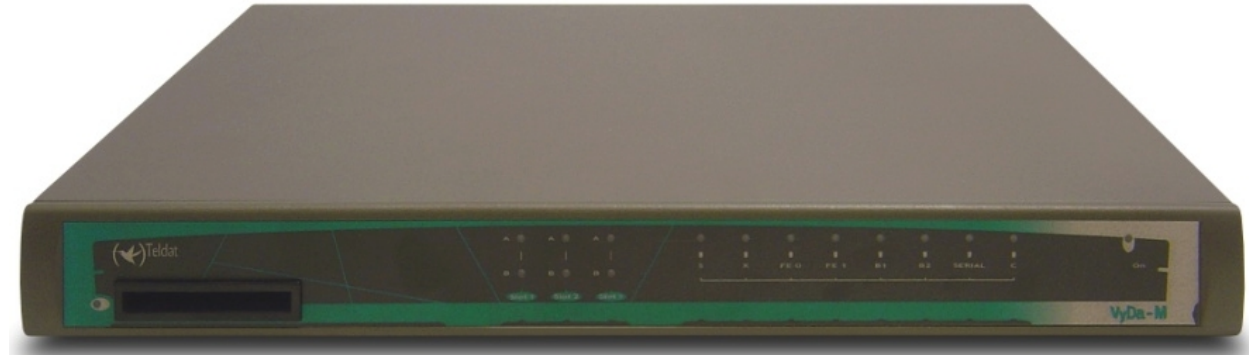This manual shows you how you need to install and connect this device.

Fig. 1: **VYDA 2M Media Gateway Front Panel**

Fig. 2: **VYDA 2M Media Gateway Rear Panel**

1.2 General Installation Conditions

⚠ **Caution**

Before connecting the media gateway, please read the following instructions carefully.

Workplace Conditions. Main Characteristics

- Areas with excessive humidity and dust should be avoided.
- Direct exposure to sunlight should be avoided as well as other heat sources. The device should not be placed amongst books, papers, magazines or other element that could hinder natural air circulation.
- The device should not be placed very close to strong electromagnetic fields such as speakers, engines, etc.
- Knocks and/or strong vibrations should be avoided during transport, operation and storage.

Power Supply

The **VYDA 2M** media gateway is directly connected to the electricity network (220 V/50 Hz).

To avoid electric shocks, residual current circulation and other unwanted effects, also affecting communications, the following is recommended:

> ⚠️ **Warning**
>
> All interconnected communication devices should be plugged to THE SAME GROUNDED POWER OUTLET, which should at the same time be of good quality (lower than 10 ohms).
>
> Whether the workplace is provided with an uninterrupted power supply system (UPS), regulated supply or it is independent from the rest (such as lighting, etc.); it is highly recommended that all data devices should be connected to the same power source. This will avoid operating and premature aging problems of drivers and other components.

> ⚠️ **Warning**
>
> The electric current in power cables, telephone lines and communication cables is dangerous. To prevent electric shocks, before installing, handling or opening the equipment covers, connect and disconnect the cables as follows:

To Connect	To Disconnect
Ensure that the on/off power supply switch is in the OFF position.	Place the on/off power supply switch in the OFF position.
Connect all data cables.	Disconnect the power supply from the device.
Connect the power supply to the device.	Disconnect the data cables.
Place the device's on/off power supply switch in the ON position.	

1.3 Connections

1.3.1 Data Connection

The **VYDA 2M** media gateway has the following available connectors. Depending on the model, some of these connectors may not be available:

FE 0, FE 1:

The **VYDA 2M** media gateway has two female RJ45 connectors in order to connect to the Ethernet 10BaseT / 100BaseT networks through shielded twisted pairs (STP) or unshielded (UTP) cables.

Depending on the design of the network, the connection is carried out through a HUB or directly to another terminal device Ethernet interface through a crossover cable (please ask your supplier for information on crossover Ethernet cables).
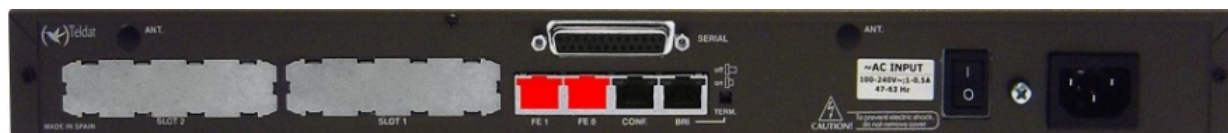

Fig. 3: **FE 0, FE 1**

BRI:

ISDN 2B-D basic interface; this has an activation mechanism, through 2 jumpers, for the S bus terminal load.

This requires a software license in order to operate.

Fig. 4: **BRI**

1.3.1.1 BRI Connection

The BRI interface has a 4 wire RJ45 female connector in order to connect to the S bus coming from the ISDN network terminator (NT1 or TR1).

In order to connect, use the cable with RJ45 male connections provided with the device.

Passive-Bus terminal resistances

The **VYDA 2M** media gateway has a pushbutton (labeled as "**TERM**") in order to connect the BUS-S termination resistances. The placing of these terminal resistances in the correct position is important. Otherwise, this can lead to errors in data (or voice), particularly if the "S" bus line is long. On leaving the factory, the pushbutton, is in the "ON" position by default.

The only or last terminal on the ISDN "S" bus

The "TERM" pushbutton must be in the ON position if the media gateway is the only element connected to the network terminal (NT1, TR1, etc) or is in the last position on the ISDN "S" bus.
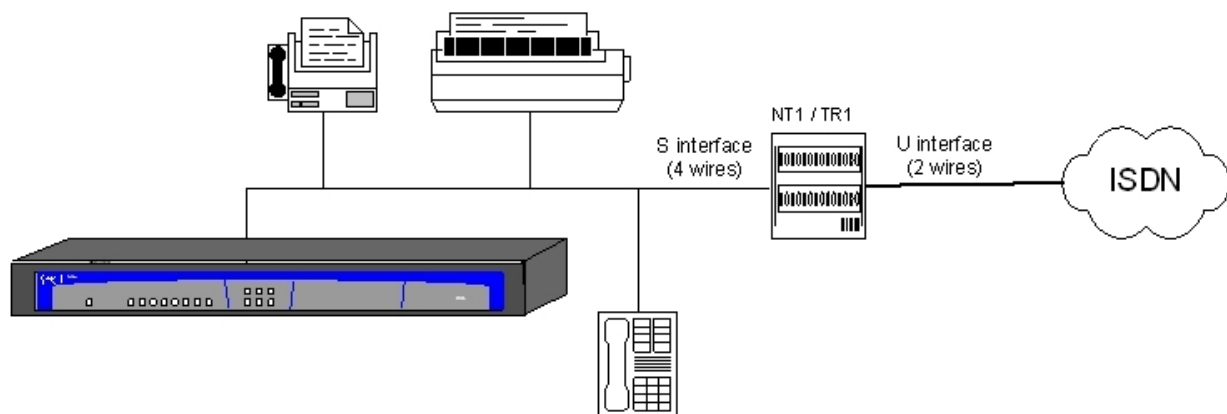

Fig. 5: **Location as the only or last terminal**

Intermediate position in the ISDN "S" bus

The "TERM" pushbutton must be in the OFF position if the media gateway occupies an intermediate position in the ISDN "S" bus.
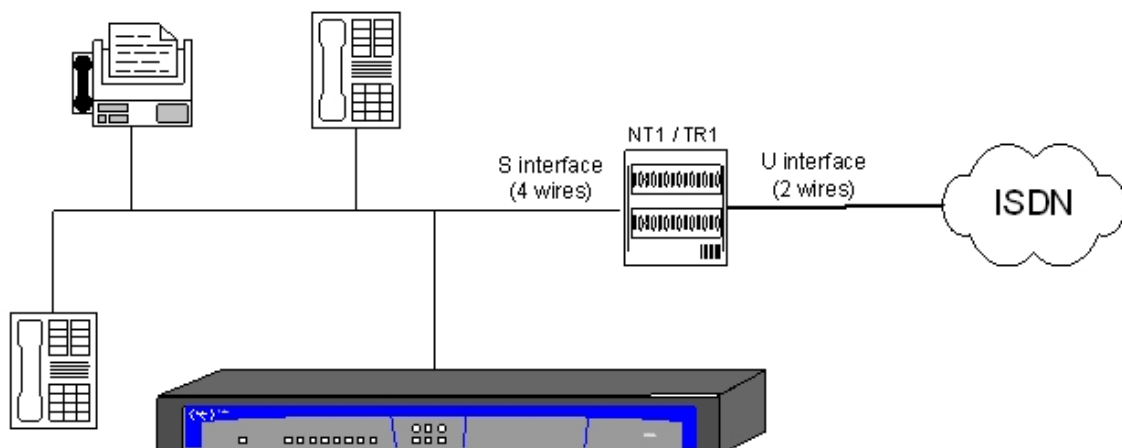

Fig. 6: **Location in an intermediate position in the bus**

1.3.1.2 Connecting for configuration

The **VYDA 2M** media gateway has a RJ45 female connector on the rear panel referred to as " **CONF.** " which provides access to the device's local console. In order to configure this, you must connect the " **CONF.** " port to an asynchronous terminal (or to a PC with terminal emulation).

> **Note**
>
> Configuration for the terminal must be:
>
> - Speed: 9600 bps.
>
> - Eight data bits.
>
> - One stop bit.
>
> - No parity bit.
>
> - No type of flow control.

Connection to the configuration port can be carried out using the RJ45 connectors cable, provided with the device, together with the RJ45 Female-DB9 Female adapter also provided with the device.
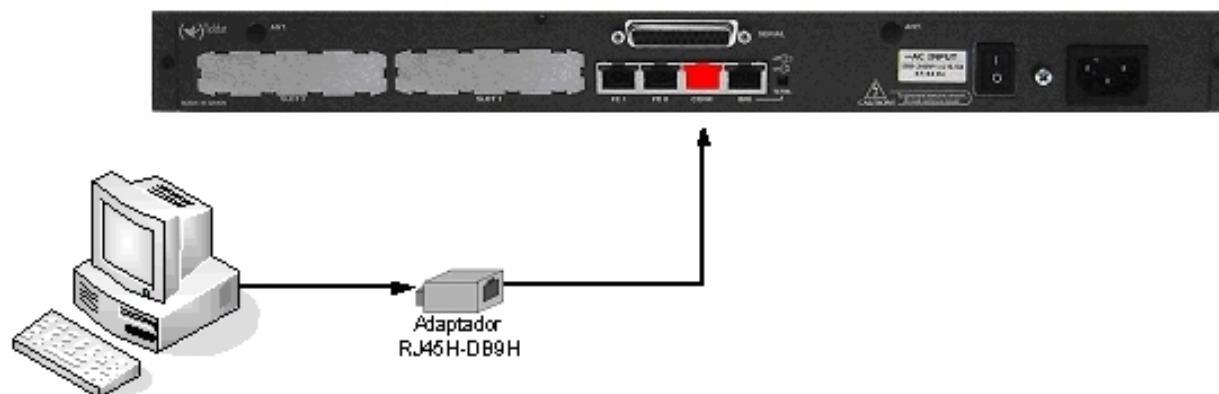

Fig. 7: **Connecting for configuration**
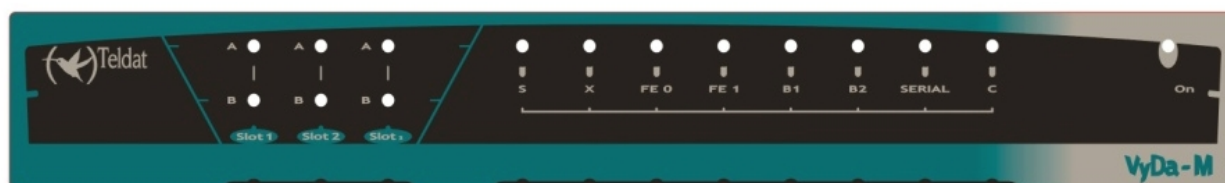
1.4 Meaning of the LEDs

Fig. 8: **VYDA 2M Media Gateway Front Panel**

ON	Power-on indicator. It lights up when connected to the power.
S	DEVICE OPERATION: **OFF:** System off. **RED:** ERROR: Component operating incorrectly. **YELLOW:** The device has a telnet connection activated and is being remotely accessed. **GREEN:** System initialized and operating. The device can be accessed via the local console.
X	Not used in the current version.
FE0-FE1	**OFF:** Interface not supported or is not available. **RED:** Interface is not available either because it is not enabled or there is a malfunction in the auto-test. **YELLOW:** Interface initialization in process. **GREEN:** Interface available. Flashing: Maintenance frame being sent.
B1 – B2	**OFF:** Physical layer not available, either due to cabling problems or to energy saving procedures. **RED:** Temporary, in process of establishing a call. Permanent, ERROR: errors have been detected in the line or in the call process. **YELLOW:** ISDN physical layer is established. **GREEN:** Flashing. Call is established. **GREEN-YELLOW:** Channel configured in permanent mode, i.e. not switched.
SERIAL	Not used in the device current version.
SLOT 1-2 — A	**OFF:** Slot is empty. There is no card. **RED:** ERROR: a card has been detected in the slot but operating incorrectly. **YELLOW:** Initialization/configuration in process. **GREEN:** Card initialized and operating correctly.
SLOT 1-2 — B	**OFF:** The card is not executing any operations. **RED:** Depending on the type of card. **YELLOW:** Depending on the type of card. **GREEN:** Depending on the type of card.
SLOT 3 A-B	Not used in the device current version.

1.5 Programming the Microswitches

The **VYDA 2M** media gateway has a block of 8 available microswitches, **located on the underside of the device**, which are used for maintenance and test tasks. In this case, they are only used to load the default configuration.

These switches should not be handled by the user other than to establish the default configurations.

> **Note**
>
> So the device operates correctly, all the microswitches must be in the OFF position.

1.5.1 Procedure to ignore the configuration

This procedure is applied if you have to discard the whole configuration of the device, for example, if you cannot remember the password.

The procedure is as follows:

- Turn off the device through the ON/OFF switch.
- Using a screwdriver move microswitch '5' to the ON position.
- Turn the device on with the ON/OFF switch.

When the device is switched on, a message similar to the one shown below will appear on the configuration console:

```
**************************************************
**************************************************
**************************************************


BOOT CODE VERSION: 01.06  Jan  2 2006 10:22:22
  gzip  Dec 28 2005 09:54:11
P.C.B.: A0  MASK:0C10  Microcode:00E1
START FROM FLASH
BIOS CODE DUMP....................
BIOS DATA DUMP...
End of BIOS dump
 Boot-stack used: 0x00000C38
 Boot-stack free: 0x000013C8




============================================================
    BIOS TELDAT                             (c)Teldat
============================================================
BIOS CODE VERSION: 01.06
CLK=262144 KHz    BUSCLK=65536 KHz    PCICLK=65536 KHz    L0
Date: 01/12/06, Thursday         Time: 12:40:13


SDRAM size: 32 Megabytes
   BANK 0: 32 Megabytes (detected)
Caches: ON    Write-Back
FLASH: 64 Mb.
NVRAM: 128 Kb.
EEPROM: 2048 Bytes.
DPRAM: 8192 Bytes.
ISAC
RDSI_B
RDSI_B
SECURITY ENGINE
PCI device: Host bridge
  (Bus: 0, Device: 0, Function: 0)
  (Subs. Vendor: 0x0000, Subs. Device: 0x0000)
Current production date: 00 00
Current software license: 12 15
Current serial number: 550/05646
BIOS MAC Add: 00-a0-26-a0-16-0e
>>
```

```
........
TRYING APP CODE DUMP
    (CONFIGURED) ATLAS2G.BIN ver.: 0.10.6.12 0.0.0.0........
.........................................................
.........................................................
.........................................................
.........................................................
...................
APP DATA DUMP.....................................................
 Bios-stack used: 0x1490
 Bios-stack free: 0x2B70
 Aux-stack used: 0x124
 Aux-stack free: 0x1EDC
Running application
Default configuration used
Parsing text mode configuration ...
Configuration parsed
Initializing


Press any key to get started
```

On reaching this point, you can reset microswitch '5' in the OFF position (it is not necessary to turn off the device) This way, the next time you restart the device, the saved configuration will be adhered to.

1.6 PMC-PCI Cards

The **VYDA 2M** features and interfaces can be amplified by inserting PMC boards (PCI Mezzanine Card) (please see our catalog containing all of our available and compatible cards). In order to correctly insert the card, please follow the steps given below.

1.6.1 Procedure to install PMC Cards

(1)   Switch off the device and remove the cables as described in the section on connection in this manual.

(2)   Remove the device from the workplace and place it in a stable, safe place where it can be easily accessed and handled. Open up the device. To do this you need to remove the upper cover, which is secured through four screws located on the underside of the device.

(3)   Once the screws have been removed, in order to remove the cover, slide it towards the front panel and then remove it by lifting it. Place it in a safe place.

(4)   Find the place where the PMC board needs to be located. This slot has a set of elevated connectors with gold contacts and a pair of securing screws.

(5)   Remove the blind cover from the spot. This cover is located on the rear panel. Push this out.

(6)   Place PMC board securing posts over the securing screws. Secure these firmly.

(7)   Place the PMC card in the slot so that this firstly adjusts to the space on the device rear panel and subsequently to the two PMC connections. This operation must be carefully carried out without forcing any piece or part of the device. Check that the board is clearly settled over the PMC connectors.

(8)   Screw the PMC board to the posts. For this, use two screws with their corresponding washers. Firmly tighten the screws without damaging the board.

(9)   Close the device with the cover. To do this, place the device upside down adjusting the three slots on the underside in the device's front panel and subsequently adjust the cover. Secure the cover with the screws.

(10) Connect and switch on the device as explained in the connection section. Should you detect any problems, switch off the device and make sure that the above steps have been carried out correctly. If the problem persists, please contact your usual supplier.

(11) Connect a terminal to the console and check that the device detects the PMC board.

```
**************************************************
**************************************************
```

```
****************************************************

BOOT CODE VERSION: 01.06   Jan  2 2006 10:22:22
  gzip  Dec 28 2005 09:54:11
P.C.B.: A0  MASK:0C10  Microcode:00E1
START FROM FLASH
BIOS CODE DUMP....................
BIOS DATA DUMP...
End of BIOS dump
 Boot-stack used: 0x00000C38
 Boot-stack free: 0x000013C8


===========================================================
    BIOS TELDAT                         (c)Teldat
===========================================================
BIOS CODE VERSION: 01.06
CLK=262144 KHz   BUSCLK=65536 KHz   PCICLK=65536 KHz   L0
Date: 01/12/06, Thursday        Time: 12:40:13


SDRAM size: 32 Megabytes
   BANK 0: 32 Megabytes (detected)
Caches: ON    Write-Back
FLASH: 64 Mb.
NVRAM: 128 Kb.
EEPROM: 2048 Bytes.
DPRAM: 8192 Bytes.
ISAC
RDSI_B
RDSI_B
SECURITY ENGINE
PCI device: Host bridge
  (Bus: 0, Device: 0, Function: 0)
  (Subs. Vendor: 0x0000, Subs. Device: 0x0000)
Slot 1 - PCI device: CardBus bridge
  (Bus: 0, Device: 10, Function: 0)
  (Subs. Vendor: 0x0000, Subs. Device: 0x0000)
Current production date: 00 00
Current software license: 12 15
Current serial number: 550/05646
BIOS MAC Add: 00-a0-26-a0-16-0e
```

1.7 Installation in a rack

In order to install the **VYDA 2M** media gateway in a 19-inch rack, you will need two plastic strips like the ones seen in the figure. The strips and the associated screws are not included in the basic packet and need to be acquired separately.

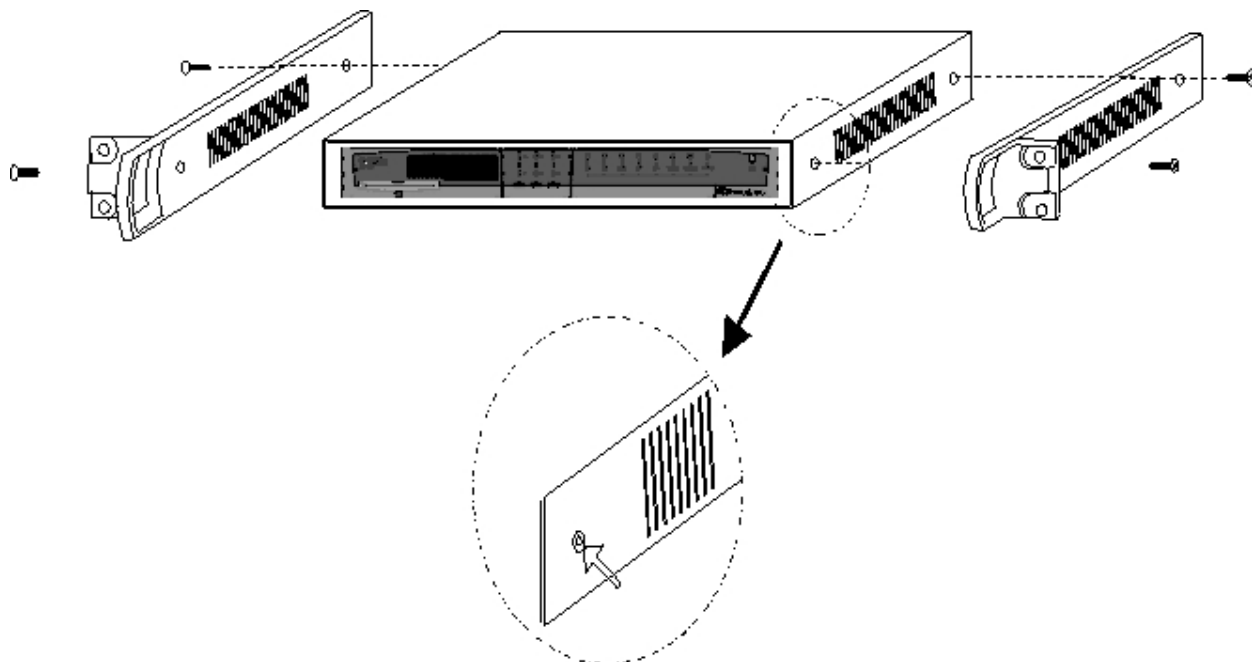Both strips are attached to the device through four screws, two at each side as shown in the figure.

Fig. 9: **Attaching of the strips**

The spaces for the screws in the **VYDA 2M** gateway leave the factory protected by covers. These can be removed by using a sharp tool (such as a small flat screwdriver). We recommend removing the upper cover in order to carry this out more easily.

Fig. 10: **Device with the strips**

Appendix A Technical Information

A.1 Troubleshooting

Below, you will find a table that can help you solve problems during the installation of the device. If you cannot solve the problem, please ask your distributor for additional information.

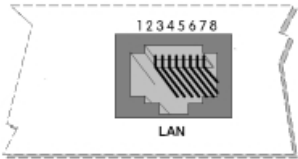| Symptom	Solution
None of the LEDs lights up on the device.	Check the power supply to the device (power source, ON/OFF switch, main power outlet).
The S LED does not light up.	Check that all the microswitches are in the OFF position.
The local console does not respond.	Check that you are using the correct console cable and that this is connected to the device and the asynchronous terminal.
	Check that the terminal has the correct port configured.
	Check that the terminal configuration is 9600 8N1. Check that the console is not in an events process. Check that the device is not being remotely accessed via telnet.
The local console is only displaying garbage.	Check that the terminal has the correct port configured.
	Check that the terminal configuration is 9600 8N1
The device does not initialize and the console displays the WARM-UP text.	Check that microswitch '1' is in the OFF position. In this situation, you may have to reload the device BIOS and the routing application.
The device is very slow in displaying the application prompt.	Check that microswitch '3' is in the OFF position.
You have forgotten the password to access the device.	Ignore the configuration through microswitch '5' as explained in the section on microswitches.
The LANx LED never lights up in green.	Check that the rear corresponding LINK LED is ON; contrariwise check the Ethernet cable and the connection to the network (you may need a crossover cable).
The BRI LED never lights up in either yellow or green.	If your device has an ISDN interface, check that the connection to the bus is correct and that the S bus terminal switch is in the correct position.
The LEDS indicate the FE interfaces are established but there is no connectivity at the data layer.	Check the configuration (routes, IP addresses, etc).

A.2 Updating the Software

The **VYDA 2M** media gateway can be updated to new releases. Please consult your distributor for further details on new releases.
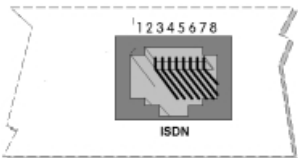
The software required to update Teldat devices is supplied in a format known as **distribution**. This consists of a single file which contains all the files needed to update your device as well as in-depth information on the contents of the files.
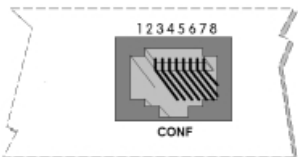
A.3 Connectors

A.3.1 LAN Connector (FE x)

RJ45 LAN	RJ45 PIN	LAN
	1	(input)
	2	(input)
	3	Rx+(output)
	4	--
	5	--
	6	Rx-(output)
	7	--
	8	--

A.3.2 BRI Connector

RJ45 ISDN	RJ45 PIN	ISDN
	1	--
	2	--
	3	(output)
	4	Rx+(input)
	5	Rx-(input)
	6	Tx-(output)
	7	--
	8	--

A.3.3 Configuration Connectors

RJ45 CONFIGURATION	RJ45 PIN	CONF
	1	--
	2	RxD
	3	GND
	4	--
	5	--
	6	GND
	7	TxD
	8	--

A.4 Technical Specifications

Hardware Architecture

PROCESSORS	Motorola PowerPC MPC8272

MEMORY	128/640 Mbytes in SDRAM
STORAGE UNIT	FLASH Memory (16/64 Mbytes) EEPROM 2 Kbytes, NVRAM 128 Kbytes

LAN Interface

PROTOCOLS	Ethernet (802.3)
Nº OF PORTS	2
SPEED	10/100 Mbps (BaseT)
CONNECTOR	RJ45 female
CABLE	STP (Length < 3m)

ISDN Interface

ACCESS	Basic 2B+D
SPEED	2 x 64 Kbps (B Channels)
CONNECTOR	RJ45 female
CABLE	Length < 3m

Configuration Interface

LOCAL TERMINAL	V.24 9.600-8-N-1- without flow control
CONNECTOR	RJ45 female, on the rear panel of the device

Power Supply

INPUT VOLTAGE	100-240 V AC
INPUT CURRENT	5 A (a +5 V DC), A (a +12 V DC) and 0.1 A (a -12 V DC)
INPUT FREQUENCY	47-63 Hz

Dimensions and Weight

TYPE	Desktop
LENGTH x WIDTH x HEIGHT	309 x 270 x 44 mm
WEIGHT	1.5 kg

Environmental Specifications

AMBIENT TEMPERATURE	ON: 5 °C to 45 °C OFF: -20 °C to 60 °C
RELATIVE HUMIDITY	ON: 8 % to 85 % OFF: 5 % to 90 %

Appendix B Safety information

B.1 Recycling and the Environment

Please do not, under any circumstances, throw away any **VYDA 2M** with normal domestic waste. Ask your local town hall for information on how to correctly dispose of them in order to protect the environment against e-waste. Always respect the current laws regarding waste material. Anyone found violating the environmental laws will be subject to fines and any additional steps established by law.

All the packing materials i.e. the cardboard box, plastic and any other packaging together with the pieces making up an **VYDA 2M** must be recycled complying with the current active laws regarding recycling materials.

The below symbol with a cross over the rubbish container can be seen on the device. This means that when a device reaches the end of its life, it must be taken to the official recycling/disposal centers where it must be disposed of in an environmentally responsible manner and separately from normal domestic waste.

B.2 Translated Safety Warnings

⚠	The equipment is intended to be installed by Service Personnel and only handled by quali-fied personnel. If not, the device may be damaged and malfunction.
	El equipo está diseñado para ser instalado por personal del servicio técnico y su manejo debe realizarlo personal cualificado. De lo contrario, el equipo puede resultar dañado y quedar inservible.
⚠	This device contains elements that are sensitive to electrostatic surges and shocks. There-fore, it is essential when handling the equipment that an antistatic wriststrap is connected to the device chassis and that this is placed on an antistatic mat. Furthermore, it is crucial to avoid any kind of contact between the device components and necklaces, bracelets, rings, ties, etc.
	Este equipo contiene componentes sensibles a las sobrecargas y descargas electroestáticas. Por eso, durante la manipulación del equipo, utilice una pulsera antiestática conectada al chasis del equipo y colóquelo sobre una esterilla antiestática. Evite también el contacto de colgantes, pulseras, anillos, corbatas, etc.con cualquier componente del equipo.
⚠	All interconnected communication devices should be plugged to THE SAME GROUNDED POWER OUTLET, which should at the same time be of good quality (lower than 10 ohms). Whether the workplace is provided with an uninterrupted power supply system (UPS), regu-lated supply or it is independent from the rest (such as lighting, etc.); it is highly recommen-ded that all data devices should be connected to the same power source. This will avoid op-erating and premature aging problems of drivers and other components.
	Todos los equipos de comunicaciones interconectados deberán estar unidos a UNA MISMA TOMA DE TIERRA, a ser posible de buena calidad (inferior a 10 ohmios). Si la instalación está dotada de un Sistema de Alimentación Ininterrumpida (SAI), alimentación estabilizada, o bien es independiente del resto (alumbrado, etc.), conecte todos los equipos de comunicaciones a la misma fuente de alimentación. Así, se ahorrará prob-lemas de funcionamiento y envejecimiento prematuro de drivers y demás componentes.
⚠	The electric current in power cables, telephone lines and communication cables is danger-ous. To prevent electric shocks, before installing, handling or opening the equipment covers, connect and disconnect the cables following the steps set forth in *General Installation Conditions* on page 2.
	La tensión eléctrica de los cables de alimentación, de los cables de la línea telefónica y de los cables de comunicación es peligrosa. Para evitar descargas, antes de instalar, mover o abrir las cubiertas de este equipo, conecte y desconecte los cables siguiendo el orden que se detalla en el apartado "Condiciones generales de instalación".