# Teldat C/S/G/A Routers Family Installation Manual

## Teldat-Dm 274-I

**Legal Notice**

Warranty

This publication is subject to change.

Teldat S.A. offers no warranty whatsoever for information contained in this manual.

Teldat S.A. is not liable for any direct, indirect, collateral, consequential or any other damage connected to the delivery, supply or use of this manual.

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# 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 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  Router Installation

## 1.1  Introduction

The **Teldat C/S/G/A** is a general purpose IP router family suitable for a wide range of applications (personal, SOHO/ SME and corporate environments). These devices adapt to plenty of IP scenarios: providing simultaneous access to Internet for private LAN users, accommodating teleprocessing networks and supporting both SNA and POS (Point of Sale terminals – dataphones).

The **Teldat C/S/G/A models cover the access needs for ADSL** (both over PSTN and ISDN), SHDSL, GSM/ GPRS/EDGE/CDMA, ISDN, internal dial-up modem and serial line (connected to an external telephone modem, Frame Relay, X.25 etc.).

This manual shows you how to install and connect these routers.



*Fig. 1:* **Teldat C/S/G/A** *routers (except for C6): External aspect*



*Fig. 2: Teldat C6 routers(with rack adaptors): External aspects*

## 1.1.1  Recycling and the Environment

Please do not, under any circumstances, throw away any **Teldat C/S/G/A** routers 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 a **Teldat C/S/G/A** , must be recycled complying with the current applicable law.



The above 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 separate from normal domestic waste.

## 1.2  Connections

> **Note**
>
> BEFORE INSTALLING THE ROUTER, PLEASE READ THE FOLLOWING INSTRUCTIONS CARE-FULLY

**Workplace Conditions. Main Characteristics**

- Excessive cold and heat should be avoided, as should humidity and dust.
- Avoid direct exposure to sunlight and any other heat sources. Do not place the device between papers, magazines or other elements that could hinder natural air circulation.
- Do not place the device near strong electromagnetic fields such as those produced by speakers, motors, etc.
- Avoid knocks and/or strong vibrations during operation, storage and transport.

> ⚠ **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 following the steps set forth in the following section.

| To Connect | To Disconnect |
|---|---|
| Make sure that the power switch is in the OFF position. | Turn the power switch OFF. |
| Check that the power supply is not connected to the mains or to the device. | Disconnect the power supply from the mains. |
| Connect all data cables. | Disconnect the power supply from the device. |
| Connect the power supply to the device. | Disconnect the data cables. |
| Connect the power supply to the mains. | |
| Turn the power switch ON. | |

> **Note**
>
> Some models are equipped with an internal power supply, making the above steps redundant.

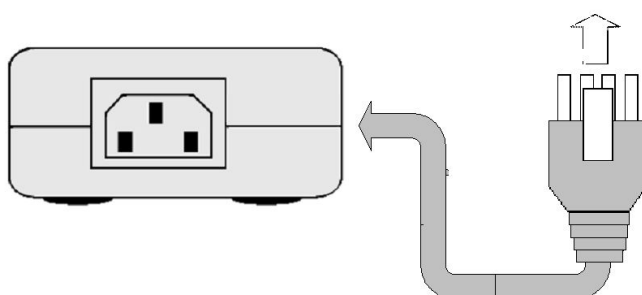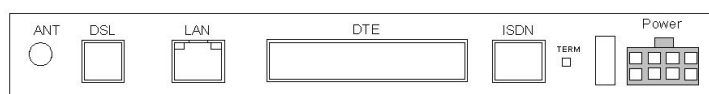### 1.2.1  Power Source Connection



*Fig. 3: Connection to the power supply*

The **Teldat C/S/G/A** models (except for the Teldat C6) are powered through an external AC/DC source. For further details, please see the Appendix.

To connect the power source to the router, follow the steps listed in the earlier table: make sure the switch is OFF (0) and the power supply is **NOT** connected to the mains; find the POWER plug (on the rear panel) and plug it into the power source. Both the connector and the receptacle have grooves that are specifically designed so that the connector can only be installed properly.

Use the grounded cable (supplied) to connect the power source to the mains.

### 1.2.1.1  Devices with internal power supply source

To connect the power source to the device: check that the power switch is in the OFF position (0) and that the device is **NOT** connected to the mains. Find the power connector plug (on the rear panel) and insert the grounded power cable (supplied). The shape of the connector ensures it's correctly inserted.
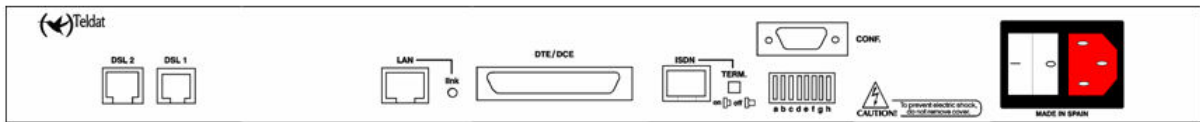


*Fig. 4: Connecting the power with the internal source*

To avoid electric shocks, residual current circulation and any other unwanted effects that may disrupt communication, 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..

## 1.2.2  Data Connections

The Teldat C/S/G/A routers are equipped with the following connectors (some models may not have all):

**LAN**:

Ethernet Interface 10BaseT for LAN connection: the LNK LED indicates when the physical layer is established and the RxD LED signals frame reception (except in the Teldat C6).

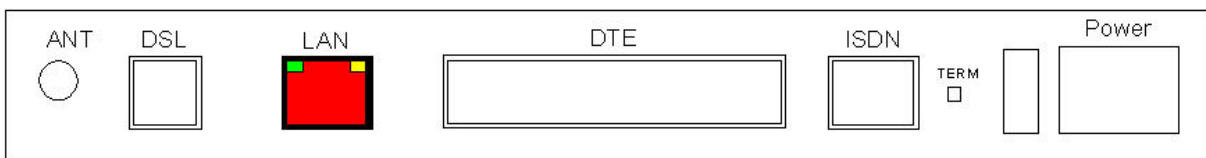Available in all models (except those equipped with a switch).



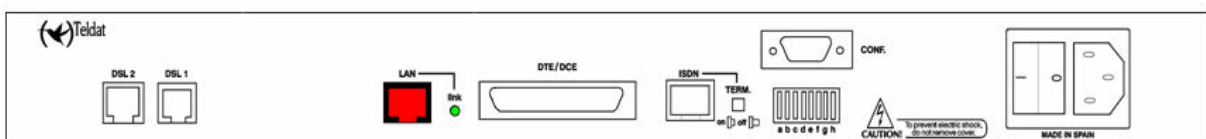*Fig. 5: LAN Connector, LNK LED and RxD LED*



*Fig. 6: LED LINK and LAN connector in the Teldat C6 model*

**SWITCH**:

4 port switch 10/100BaseT with automatic MDI/MDIX to connect to the LAN (local area network). Routers with a switch have two connection LEDs: one for connections at 100 Mbps and the other for connections at 10 Mbps.

Please, pay close attention to the labelling to avoid confusing the switch with the four asynchronous ports.
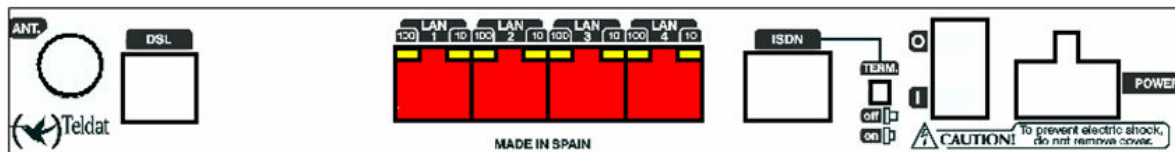
Avalability depends on the model.



Fig. 7: Switch LAN connector: LEDs 100 and 10

**DTE / DCE**:

Multistandard serial interface to connect to an external modem, POS, or X.25 WAN, Frame Relay, PPP, etc.

Requires an insertable driver (V.24, V.35, V.36, X.21, RS-485) and software license for operating purposes.
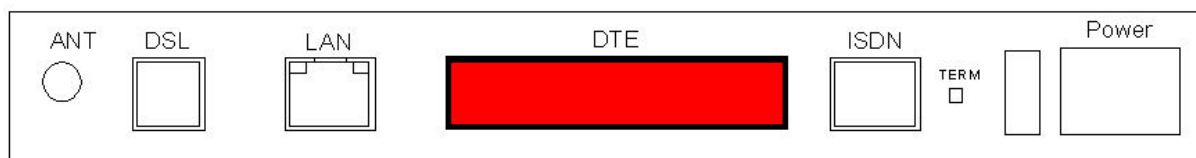


Fig. 8: DTE/DCE connector
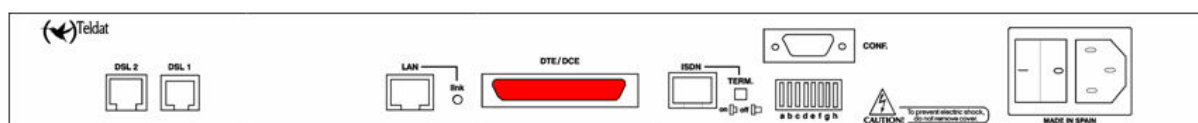


Fig. 9: DTE/DCE connector: Teldat C6

The **Teldat C** and **Teldat S** have an xDSL interface (ADSL over PSTN, ADSL over ISDN, SHDSL, etc.).

Model C6 has ADSL over PSTN.

**Teldat A** is equipped with a dial up modem interface.

Requires an xDSL plug-in card, or dial-up modem, and software license for operating purposes.



Fig. 10: ADSL Connector



Fig. 11: ADSL Connector: Teldat C6

**ISDN**:

Basic ISDN 2B+D interface. A switch (**TERM**.) is available to insert the S bus terminal load.

Requires a software license for operating purposes.
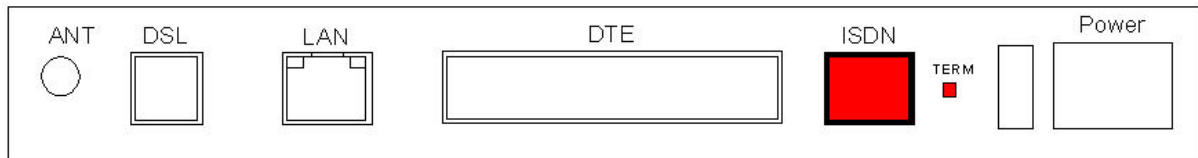


*Fig. 12: ISDN connector and TERM pushbutton*
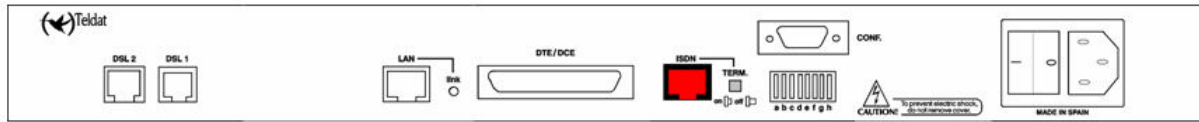


*Fig. 13: ISDN connector and TERM pushbutton: Teldat C6*

PSTN:
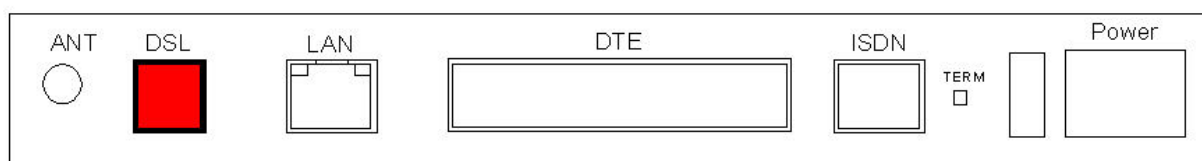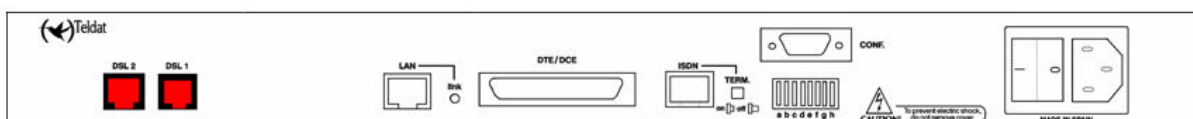
RTC modem interface (V.92 bis or similar).

Available depending on the model.
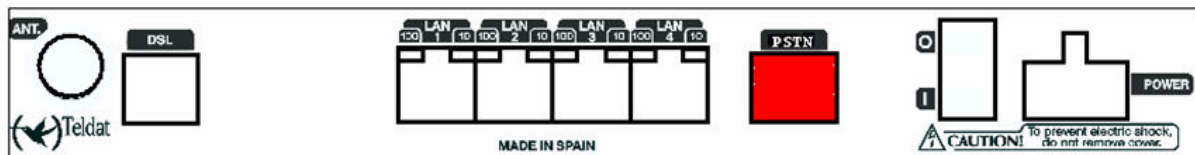


*Fig. 14: PSTN Connector*

**ANT.**:

RF antenna connector.

Requires a GSM/GPRS plug-in card and software license for operating purposes.
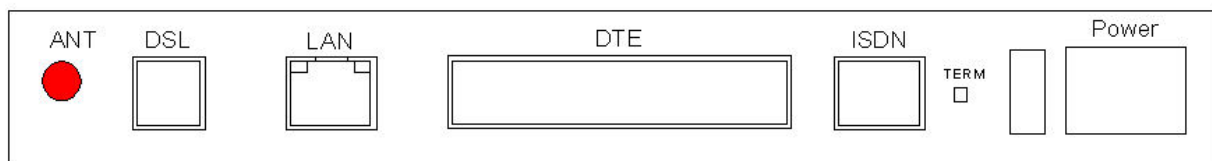


*Fig. 15: RF antenna connector*

ASYNCHRONOUS SERIAL INTERFACES:

Asynchronous serial interfaces to connect POS modems (point of sale) etc.

Available depending on model.
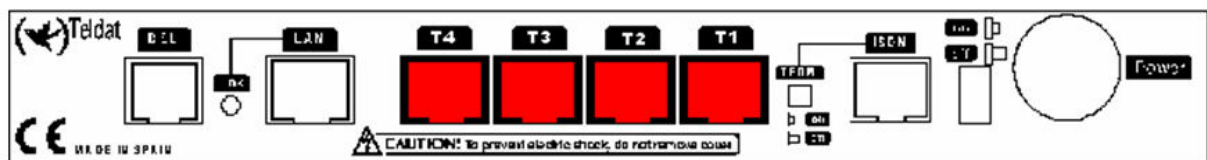


*Fig. 16: Specific asynchronous POS connectors*

### 1.2.2.1  DSL Connection

The DSL interface has a female RJ11 connector with 4 wires. Only the **central pair is used** for data transmission/reception. SHDSL, however, uses 4 wires.

For connection purposes, use the telephone cable with male RJ11connectors (provided with the router).

The Splitter

The Full Rate ADSL (ITU G.dmt or G.922.1) operating mode uses a higher transmission capacity. To use telephones directly connected to the same line, you need to install a mechanism known as **splitter** (which separates the band frequencies for voice telephony from those used for the ADSL connection to transmit data). This prevents interferences between both the telephone and ADSL services.

Figure 1.17 shows a typical installation with a splitter.

The Microfilter

The G. Lite (ITU G.922.2) operating mode uses reduced transmission power, allowing telephones directly connected to the same line to be used with the help of a device known as a **microfilter**. This device ensures that the ADSL signal does not reach the telephone, and that undesired signals, generated by the telephone, do not interfere with the ADSL signal.

Figure 1.18 shows a typical installation with a microfilter.
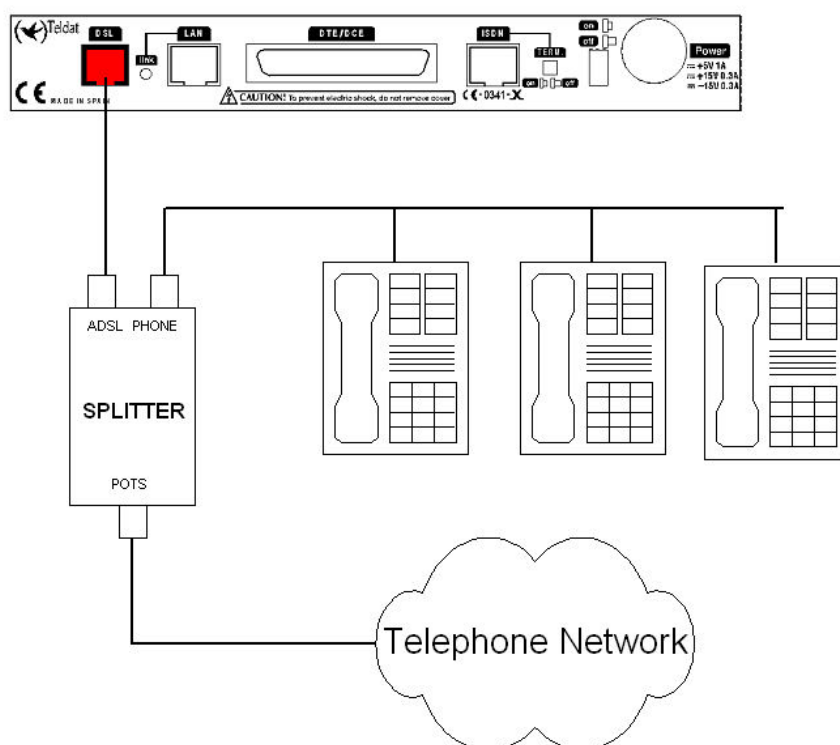


*Fig. 17: ADSL installation with a splitter*
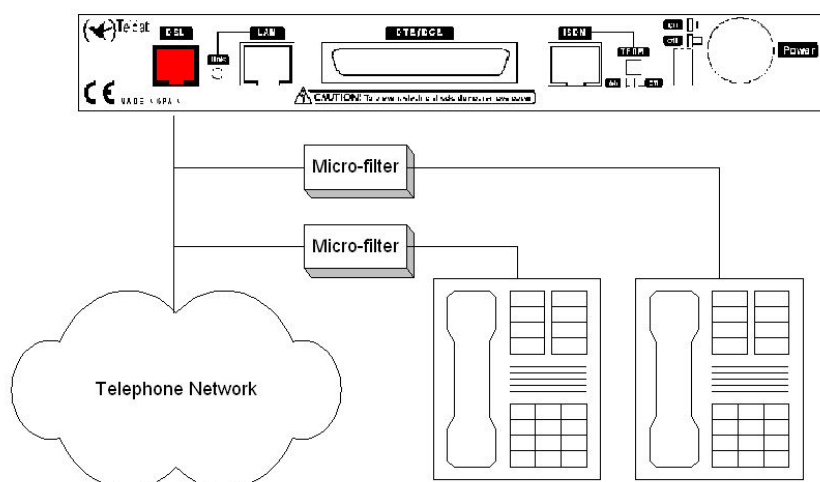


*Fig. 18:* **ADSL installation with microfilter**

For ADSL over ISDN, the above information for PSTN is applicable. However, you must bear in mind that the fre-

quency bands used are different (meaning specific splitters and microfilters for ADSL over ISDN must be used).

### 1.2.2.2  ISDN Connection

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

Use the RJ45 male connector cable proved with the router for this.

Passive-Bus terminal resistors

The **Teldat C/S/G/A** models have a pushbutton (labeled TERM.) where you can connect the S BUS teminal resistors. The terminal resistors must be positioned correctly. If they aren't, errors in data or voice may occur (especially if the S bus is long).

• Single or last terminal on the ISDN S bus

   The TERM. pushbutton must be in the ON position if the router is the only, or last, element connected to the network (NT1, TR1, etc.) terminator on the ISDN S bus. By default, the device is configured in the latter position.
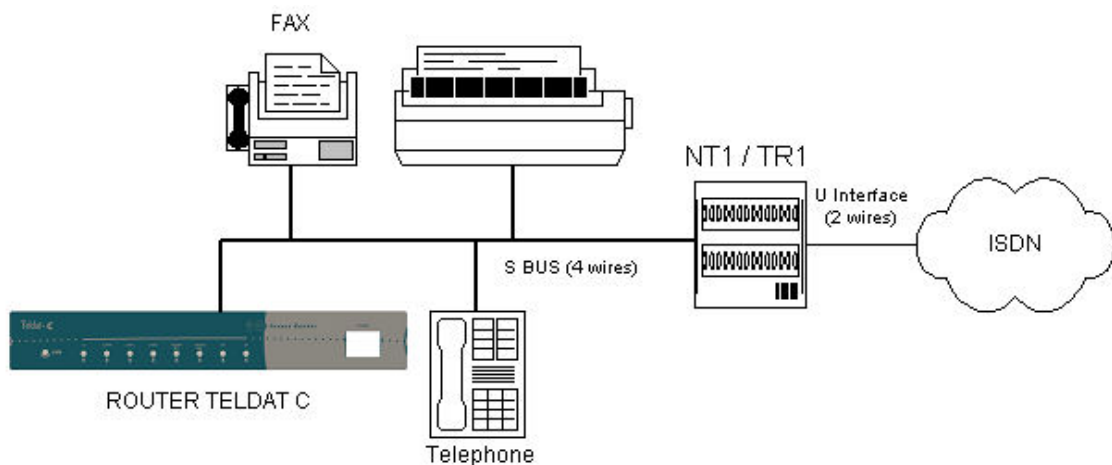


*Fig. 19: Single or last element*

• Intermediate position on the ISDN S bus

   The TERM. pushbutton must be in the OFF position if the router occupies an intermediate position on the ISDN S bus.
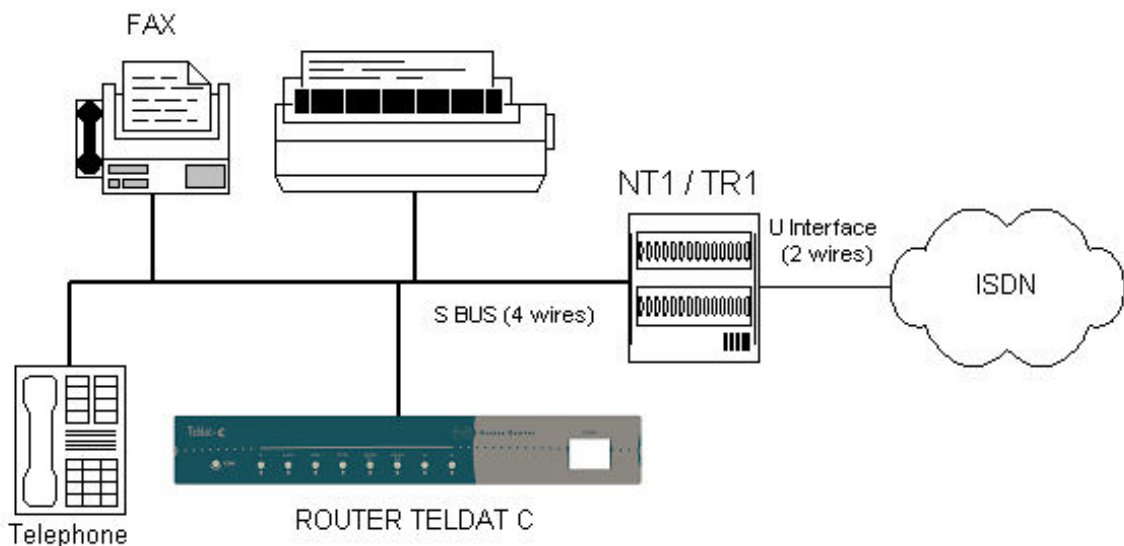


*Fig. 20: Intermediate position on the bus*

### 1.2.2.3  Antenna connection

The **Teldat G** is equipped with an external antenna connector. It can be used to improve the quality of the signal received and transmitted by the GSM/GPRS module.

### 1.2.2.4  POS Specific Interface Connections

In general, (although this depends on the type of POS connector) you need a male-male pin-to-pin RJ45 to RJ45 cable to connect a POS to a router.

The router interfaces behave in DCE mode.
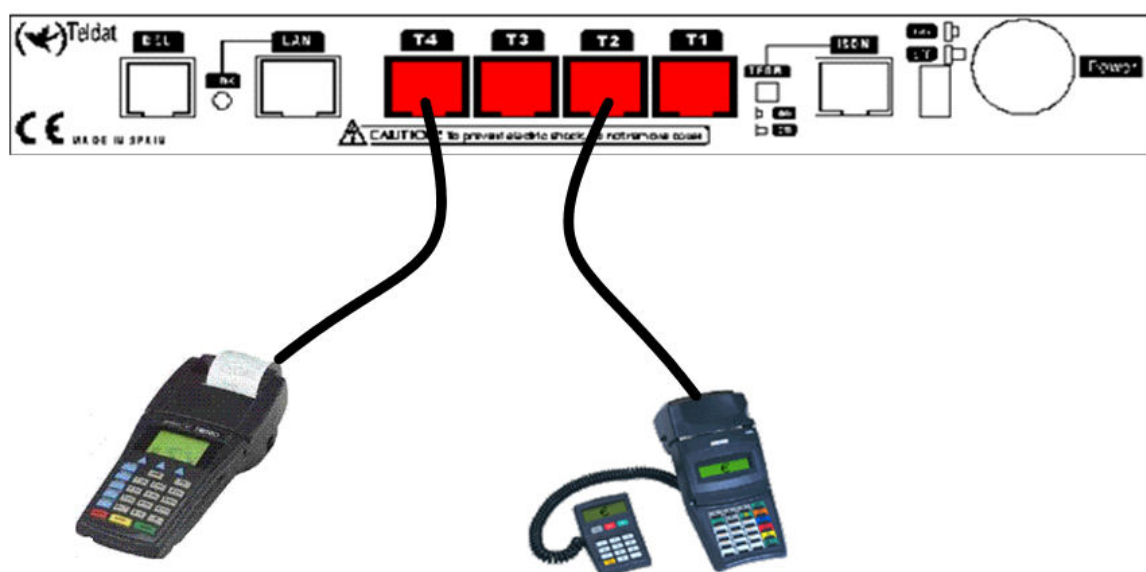


*Fig. 21: POSs Installation*

Depending on who manufactures the sale terminals, you may need specific cables, or use the internal jumpers. These allow you to short circuit the appropriate DSR and DTR signals, where the DTR flow control signal is not provided by the terminal.

The jumpers (inside the router chasis) are located next to the POS connectors, labeled P16, P15, P14 and P13. These correspond respectively to the T1, T2, T3 and T4 connectors.

### 1.2.2.5  PSTN Connection

The Teldat C/S/G models are equipped with a connector for a telephone line to execute connections in V.92bis mode (or similar).

### 1.2.2.6  Configuration connection

The **Teldat C/S/G/A devices have a female RJ45 connector (front panel) labeled** Conf.**, which provides access to the device's local console. For configuration, connect the** Conf. **port to an asynchronous terminal (or to a PC with terminal emulation).**
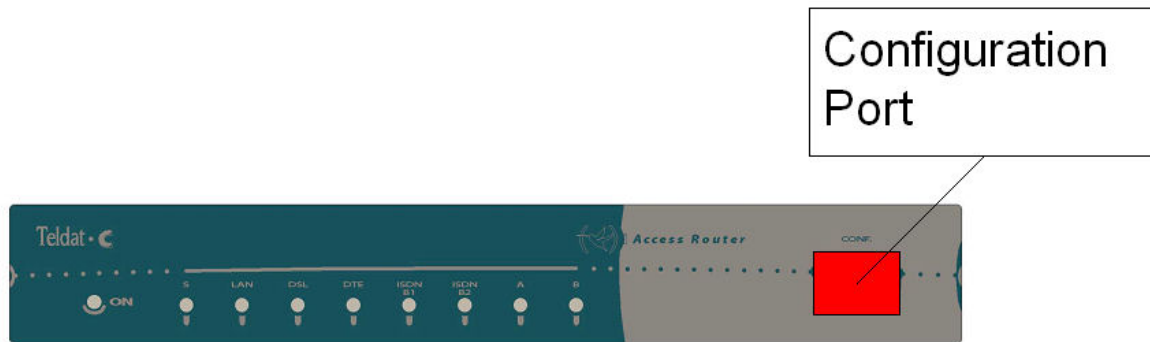
*Fig. 22: Configuration connector*
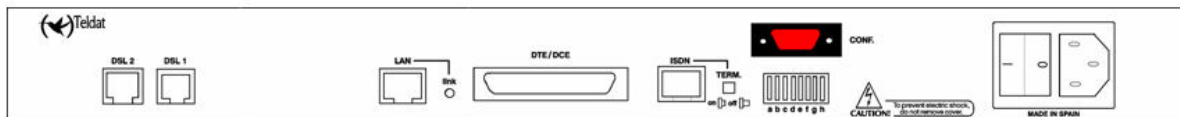


*Fig. 23: Configuration connector in the Teldat C6 model*

Terminal configuration is as follows:

- Speed: 9600 bps

- Eight data bits

- One stop bit

- No bit parity

- No type of flow control

To connect to the configuration port, use the RJ45 cable together with the female RJ45-female DB9 adapter, both provided with the device. If the terminal has DB25 connectors, you must use an additional adapter. The Teldat C6 requires a serial cable with DB9 male/DB9 female connectors with an additional adapter.
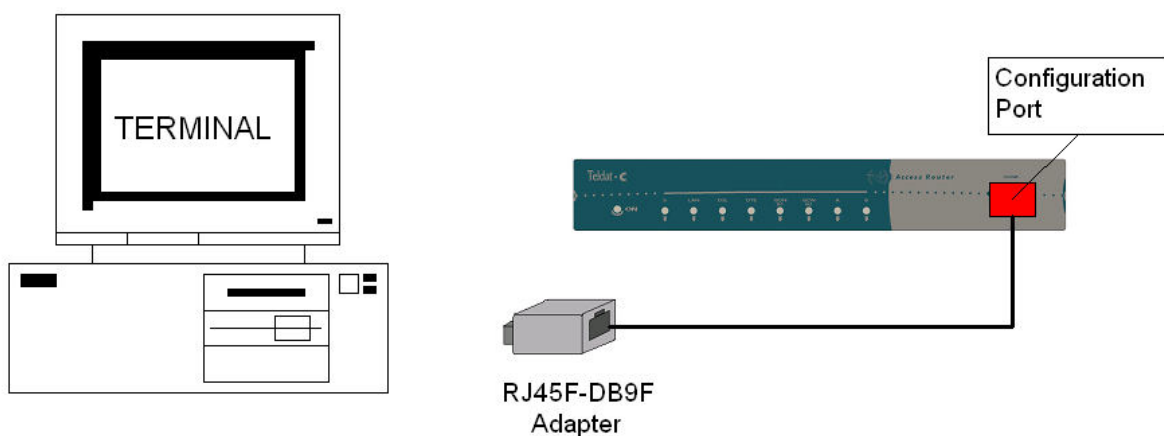


*Fig. 24: Connection for configuration*

## 1.3  Installing the SIM card

The **Teldat G** has a GSM/GPRS interface where at least one SIM card must be inserted so the router can operate.

The **Teldat G** can include one or two SIM trays, depending on the hardware. The SIM trays are located inside the device, so you need to remove the outer casing to install the SIMs.

In devices with two SIM trays, you need to install at least one SIM card. When only one SIM card is being used, it must be inserted in the SK1 tray.

To insert a SIM card in the internal tray, locate the retaining lip (metal fastening labeled OPEN) so you can open the tray and place the SIM card inside. The steps are as follows:

(1)   Using a fingernail, pull the visible flap slightly back (toward the OPEN arrow) to release it from the plastic lip holding it.

(2)   Open the tray.

(3)   Insert the SIM card so that it matches the edges of the tray. If it isn't correctly inserted, the tray won't close.

(4)   Return the tray holding the SIM card to its original position.

(5)   Again, using a fingernail, pull the top flap slightly back (as in step 1) so it gently slides back under the plastic lip without damaging the holder. The card is now securely held.
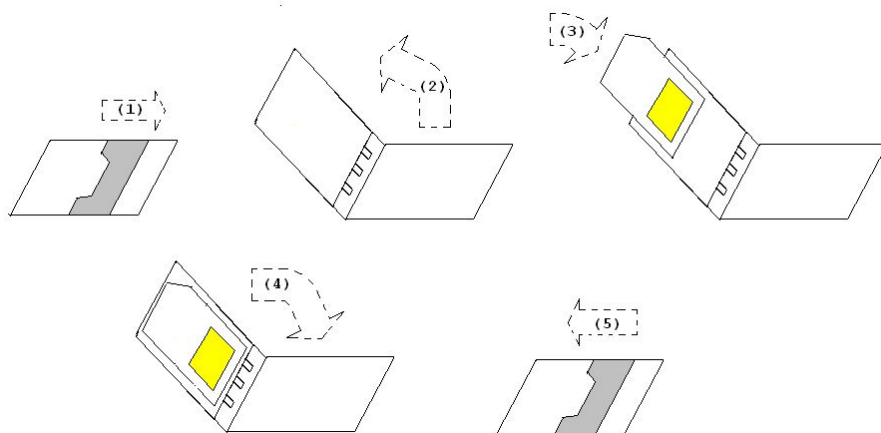
*Fig. 25: Steps to insert the SIM*


## 1.4  Installation in rack

To install the Teldat C6 in a 19-inch rack, you need two plastic strips (see Figure 1.26). The strips and screws are not included in the basic packet and need to be purchased separately.

Both strips are attached to the device through four screws: two on each side. Figure 1.26).
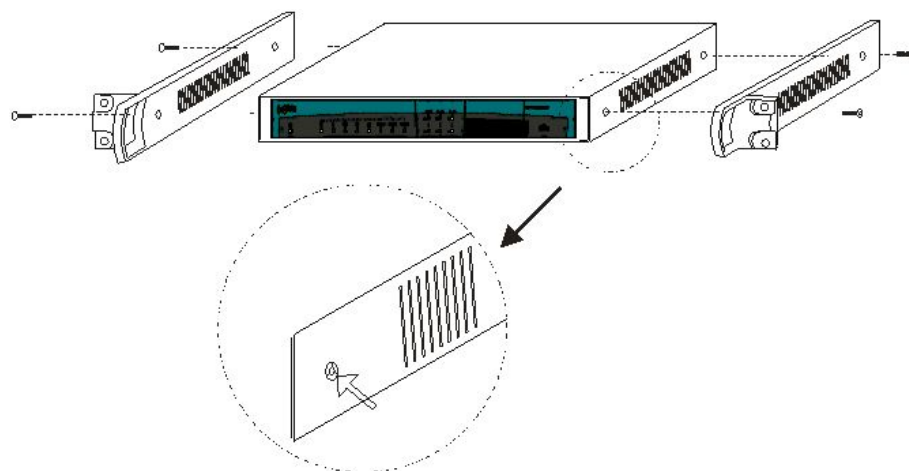
*Fig. 26: Rack adaptation*

By defaulr, the bores where screws must be inserted leave the factory protected by blind covers. The covers can be removed with a sharp tool (such as a small flat screwdriver). The strips are easier to install if you first remove the up-per casing of the router.

## 1.5  Meaning of the LEDs



*Fig. 27: Teldat C/S/G with ISDN (front panel) (without specific POS asynchronous interfaces or switch)*

| | |
|---|---|
| **ON** | Power-on indicator: It lights up when connected to the power. |
| **S** | Router operation:<br><br>**OFF** System off.<br><br>**GREEN** System initialized and operating.<br><br>**YELLOW** System with Telnet session established. |
| **LAN** | Ethernet LAN Interface:<br><br>**OFF** LAN interface does not send data.<br><br>**RED** ERROR: Interface unavailable because it is unsupported or has failed test.<br><br>**YELLOW** Interface initialization in progress.<br><br>**GREEN** Interface available.<br><br>Blinking: heartbeat. |
| **DSL / RF** | DSL or RF Interface or internal dial-up modem:<br><br>**OFF** Interface unavailable (not supported).<br><br>**RED** Interface not established, without data connection.<br><br>**YELLOW** Connecting.<br><br>**GREEN** Communication established.<br><br>Blinking: Traffic through the interface. |
| **DTE** | Multistandard serial interface:<br><br>**OFF** Port not initialized.<br><br>**RE** Port initialized.<br><br>**YELLOW** In process of establishing link.<br><br>**GREEN** Communication established. |
| **ISDN**<br><br>**B1** | ISDN Interface Channel B1:<br><br>**OFF** Physical level unavailable.<br><br>**RED** ERROR: Line errors (physical level) or call in progress.<br><br>**YELLOW** Physical level established.<br><br>**GREEN** Call established through **B1** channel (B1 channel from the network). |

| | Light blinking green / off: Switched channel. |
| --- | --- |
| | Light blinking green / yellow: Permanent channel. |
| **ISDN** **B2** | ISDN Interface Channel B2: **OFF** Physical level unavailable. **RED** ERROR: Line errors (physical level) or call in progress. **YELLOW** Physical level established. **GREEN** Call established through B2 channel (B2 channel from the network). Light blinking green / off: Switched channel. Light blinking green / yellow: Permanent channel. |
| **A** | Reserved. |
| **B** | Reserved. |



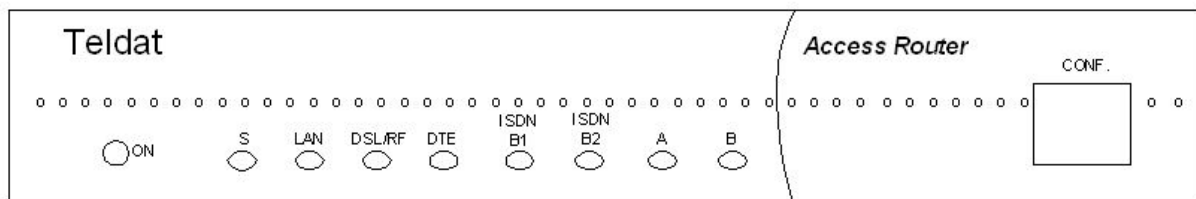*Fig. 28: Teldat C/S/G with PSTN (front panel) (without TPV asynchronous interfaces or switch)*

| **ON** | Power-on indicator: It lights up when connected to the power. |
| --- | --- |
| **S** | Router operations: **OFF** System stopped. **GREEN** System initialized and operating. **YELLOW** System with Telnet session established. |
| **LAN** | Ethernet LAN Interface: **OFF** LAN interface is not sending data. **RED** ERROR: Interface unavailable because it is unsupported or has failed test. **YELLOW** In process of initializing interface. **GREEN** Interface is available. Blinking: heartbeat. |
| **DSL / RF** | DSL or RF interface or internal dial-up modem: **OFF** Interface is unavailable (not supported). **RED** Interface not established, there is no data connection. Blinking: in cases where this is xDSL, there are problems with the interface firmware. **YELLOW** Connecting. **GREEN** Communication established. |

| | Blinking: Traffic over the interface. |
|---|---|
| **DTE** | Multistandard serial interface:<br><br>**OFF** Port not initialized.<br><br>**RED** Port initialized.<br><br>**YELLOW** Establishing the link.<br><br>**GREEN** Communication established. |
| **PSTN** | V.92 bis modem:<br><br>**OFF** Physical level not available.<br><br>**RED** ERROR: Errors on the line (physical level) or call in progress.<br><br>**YELLOW** Establishing connection.<br><br>**GREEN** Call established. |
| **A** | Reserved. |
| **B** | Reserved. |
| **C** | Reserved. |



*Fig. 29: Teldat C/S/G routers with ISDN (front panel) (with specific POS asynchronous interfaces)*

| | |
|---|---|
| **ON** | Power-on indicator: It lights up when connected to the power. |
| **S** | Router operations:<br><br>**OFF** System off.<br><br>**GREEN** System initialized and operating.<br><br>**YELLOW** System with established Telnet session. |
| **LAN** | Ethernet LAN Interface:<br><br>**OFF** LAN interface does not send data.<br><br>**RED** ERROR: Interface unavailable because it is unsupported or has failed test.<br><br>**YELLOW** Interface initialization in process.<br><br>**GREEN** Interface available.<br><br>Blinking: Maintenance frame. |
| **DSL / RF** | DSL or RF interface or internal dial-up modem:<br><br>**OFF** Interface unavailable (not supported).<br><br>**RED** Interface not established, there is no data connection. |

| | |
|---|---|
| | **YELLOW** Connecting. |
| | **GREEN** Communication established. |
| | Blinking: Traffic through the interface. |
| **ISDN** | ISDN Interface: |
| | **OFF** Physical level unavailable. |
| | **RED** ERROR: Errors in line (physical level) or call in progress. |
| | **YELLOW** Physical level established. |
| | **GREEN** Call established. |
| **T1, T2**<br>**T3, T4** | POS Interfaces: |
| | **OF** Port not initialized. |
| | **RED** Port initialized in stand-by. |
| | **YELLOW** In process of establishing link. |
| | **GREEN** Communication established. |
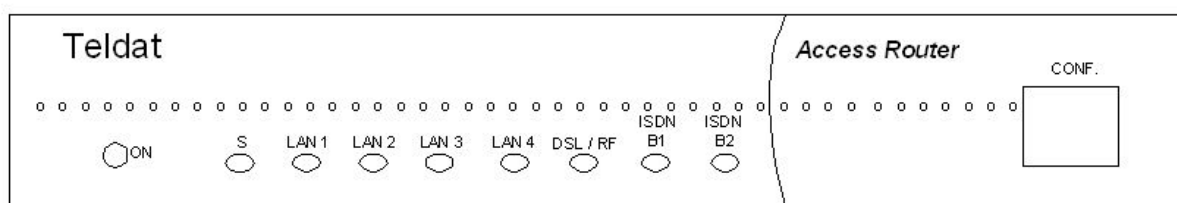


*Fig. 30: Teldat C/S/G with switch and ISDN (front panel)*

| | |
|---|---|
| **ON** | Power-on indicator: This lights up on being connected to the power supply. |
| **S** | Router operation: |
| | **OFF** System stopped. |
| | **GREEN** System up and running. |
| | **YELLOW** System with Telnet session established. |
| **LANx** | Ethernet LAN Interface: |
| | **OFF** LAN interface does not send data. |
| | **RED** ERROR: Interface unavailable because it is unsupported or has failed test. |
| | **YELLOW** Interface initialization process. |
| | **GREEN** Interface available. |
| | Blinking:heartbeat. |
| **DSL / RF** | DSL or RF Interface or internal dial-up modem: |
| | **OFF** Interface unavailable (not supported). |
| | **RED** Interface not established, there is no data connection. |
| | Blinking: xDSL, problems with the interface firmware. |
| | **YELLOW** Connecting. |

| | |
|---|---|
| | **GREEN** Communication established.<br><br>Blinking: Traffic through the interface. |
| **ISDN**<br><br>**B1** | ISDN interface B1 channel:<br><br>**OFF** Physical layer unavailable.<br><br>**RED** ERROR: Line errors (physical layer) or call in progress.<br><br>**YELLOW** Physical layer established.<br><br>**GREE** Call established through **B1** channel (network B1 channel).<br><br>Blinking green/off: Switch channel.<br><br>Blinking green/yellow: Permanent channel. |
| **ISDN**<br><br>**B2** | ISDN interface B2 channel:<br><br>**OFF** Physical layer unavailable.<br><br>**RED** ERROR: Line errors (physical layer) or call in progress.<br><br>**YELLOW** Physical layer established.<br><br>**GREEN** Call established through **B2** channel (network B2 channel).<br><br>Blinking green/off: Switch channel.<br><br>Blinking green/yellow: Permanent channel. |
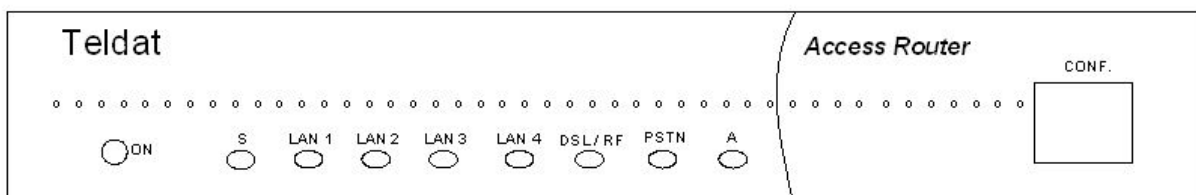


*Fig. 31: Teldat C/S/G with PSTN and switch (front panel)*

| | |
|---|---|
| **ON** | Power-on indicator. This lights up on being connected to the power supply. |
| **S** | Router operation:<br><br>**OFF** System stopped.<br><br>**GREEN** System up and running.<br><br>**YELLOW** System with Telnet session established. |
| **LANx** | Ethernet LAN Interface:<br><br>**OFF** LAN interface does not send data.<br><br>**RED** ERROR: Interface unavailable because it is unsupported or has failed test.<br><br>**YELLOW** Interface initialization process.<br><br>**GREEN** Interface available.<br><br>Blinking:heartbeat. |
| **DSL / RF** | DSL or RF Interface or internal dial-up modem:<br><br>**OFF** Interface unavailable (not supported). |

| | |
|---|---|
| | **RED** Interface not established, without data connection. |
| | Intermittent: in cases of xDSL, problems with the interface firmware. |
| | **YELLOW** Connecting. |
| | **GREEN** Communication established. |
| | Blinking: Traffic through the interface. |
| **PSTN** | V.92 bis modem: |
| | **OFF** Physical layer not available. |
| | **RED** ERROR: Errors on the line (physical layer) or call in progress. |
| | **YELLOW** Establishing connection. |
| | **GREEN** Call established. |
| **A** | Reserved. |

In the case of the Teldat C6 model, the meaning of the LEDs coincides with that described for the Teldat C routers without specific asynchronous interfaces (except that this has two DSL LEDs and does not have the B LED).

## 1.6 Microswitches programming

The Teldat c/S/G/A devices have a block of 8 microswitches (located on the bottom) used for testing, software loading functions, etc. **These should not be handled by the user unless it is necessary to re-establish the default configuration**.

> ☞ **Note**
>
> All microswitches must be in the OFF position to ensure the router is operating correctly.

### 1.6.1 Procedure for ignoring the configuration

Follow these steps when you have to reject the whole router configuration (for instance, if you cannot remember the password):

• Turn off the device by means of 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:

```
****************************************************
****************** Router Teldat ****************
****************************************************
BOOT CODE VERSION: 1.1.0B
STARTING FROM FLASH
BOOT 22/02/00 11:51
GZIP 18/02/00 19:02
BIOS CODE DUMP.........
BIOS DATA DUMP..
End of BIOS dump
==================================================
     ROUTER TELDAT C                    (c)Teldat
==================================================
Bios's version: 1.1.0B
CPU: MPC860   CLK=49152 KHz   BUSCLK=49152 KHz
Date: 29/02/00, Wednesday      Time: 15:34:34
```

```
SDRAM size: 16 Megabytes
   SIMM 0: 16 Megabytes (detected)
Caches: ON    Write-Back
FLASH: 8 Mb.
NVRAM: 128 Kb.
EEPROM: 2048 Bytes.
WAN: DTE
ADSL
UTOPIA
LAN SCC1
Current production date: 00 06
Current software license: 20 4
Current serial number: 359/00011
........
TRYING APP CODE DUMP
   (CONFIGURED) B0080000............................................
APP DATA DUMP...................
Running application
Default configuration used
Initializing
Teldat                (c)1996-2000
Modem model TELDAT C 20 4 CPU M80860      S/N: 359/00011
1 LAN, 1 WAN Line , 0 ISDN Lines, 1 ADSL Line
*
```

At this point, reset microswitch **5** to the OFF position (you don't have to turn the device off). The next time you restart the router, the saved configuration will run.

# Chapter 2  Appendix

## 2.1  Troubleshooting

The following table can help you solve problems when installing the router. If you cannot solve the problem, contact your dealer for more information.

| Problem | Solution |
|---|---|
| None of the LEDs light 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 microswitches are in the OFF position. |
| The LAN LED never lights up in green. | Check the LED, after the LINK, is ON. If it isn't, check the Ethernet cable and the network connection (you may need a crossover cable). |
| The DSL LED never lights up in green. | If the device has an xDSL interface, check the connection to the telephone network, or the splitter, and make sure that the telephone line you are connected to supports xDSL. |
| The DSL LED persistently flashes in red. | If your device has an xDSL interface, check the necessary firmware has been loaded for said interface. |
| The DTE LED never lights up green. | If the device has a DTE/DCE interface, check that the cable is suitable, the driver is inserted in the correct position (DTE or DCE), and the configuration is correct (speed, protocol, etc). |
| The ISDN LEDS never light up in yellow or green. | If the device has an ISDN interface, check that the connection to the bus is correct and that the terminal switch from the S bus is in the right position. |
| The LEDS indicate the interfaces are established, but there is no connectivity at data levels. | Check the configuration (routes, IP addresses, ATM VPIs/VCIs, encapsulated ATM, serial interface speed, etc). |
| The **Ti** LED glows in red after an attempt to transfer data. | The device is not receiving data from the POS connected to the **i** port. Check the speed configured in the interface and the cable connecting the device to the POS. |
| The **Ti** LED glows in yellow after an attempt to transfer data and does not switch to green. | IP connectivity has not been achieved between the router and the host. Check the configuration and, if the problem persists, contact your supplier. |

## 2.2  Software updating
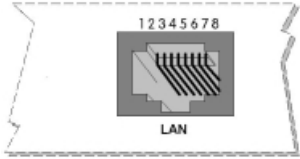
The **Teldat C/S/G/A** routers can be updated to newer versions. Please contact your dealer for further details on new releases.

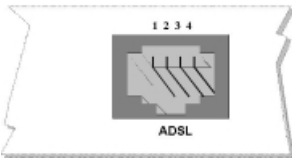There are several ways to update a Teldat router.

The software required to update the Teldat routers is supplied in a format known as  **distribution**. This consists of a single file that contains all the files needed to update your device, as well as detailed information on the content.

## 2.3  Connectors
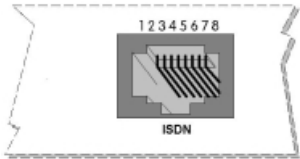
### 2.3.1  LAN Connector

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

### 2.3.2  DSL Connector

| RJ11 ADSL | RJ11 PIN | DSL |
|---|---|---|
|  | 1 | Joined to 2 |
| | 2 | Line |
| | 3 | Line |
| | 4 | Joined to 3 |

### 2.3.3  ISDN Connector

| RJ45 ISDN | RJ45 PIN | ISDN |
|---|---|---|
|  | 1 | -- |
| | 2 | -- |
| | 3 | Tx+ (output) |
| | 4 | Rx+(input) |
| | 5 | Rx-(input) |
| | 6 | Tx-(output) |
| | 7 | -- |
| | 8 | -- |
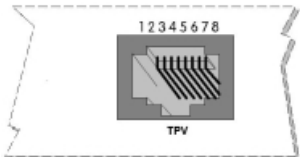
### 2.3.4  DTE/DCE Connector

DB25 DTE/DCE
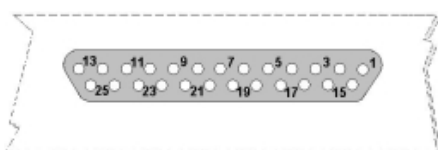
| DB25 Connector | STANDARD | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | V.24 | | V.35 | | X.21 | | RS-485 2H | RS-485 4H |
| Pin | Signal | UIT | Signal | V.35 | Signal | DB15 | Signal | Signal |
| 1 | Ground | 101 | Ground | A | Ground | 1 | Ground | Ground |
| 2 | TxD | 103 | TxD (A) | P | TxD (A) | 2 | D (-) | TxD (-) |
| 3 | RxD | 104 | RxD (A) | R | RxD (A) | 4 | | RxD (-) |
| 4 | RTS | 105 | RTS | C | CONT(B) | 10 | | |
| 5 | CTS | 106 | CTS | D | | | | |
| 6 | DSR | 107 | DSR | E | | | | |
| 7 | GND | 102 | GND | B | GND | 8 | GND | GND |
| 8 | DCD | 109 | DCD | F | | | | |
| 9 | | | ExTxC (B) | W | | | | |
| 14 | | | TxD (B) | S | TxD (B) | 9 | D(+) | TxD (+) |
| 15 | TxC | 114 | TxC (A) | Y | IND(A) | 5 | | |
| 16 | | | RxD (B) | T | RxD (B) | 11 | | RxD (+) |
| 17 | RxC | 115 | RxC (A) | V | CLK(A) | 6 | | |
| 18 | | | TxC (B) | AA | IND(B) | 12 | | |
| 19 | | | RxC (B) | X | CLK(B) | 13 | | |
| 20 | DTR | 108 | DTR | H | CONT(A) | 3 | | |
| 24 | ExTxC | 113 | ExTxC (A) | U | | | | |
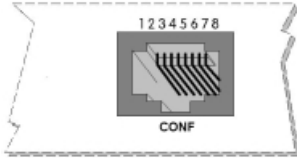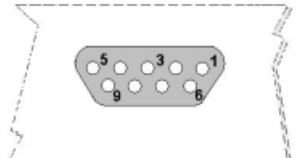
## 2.3.5  POS Connector

| RJ45 POS | RJ45 PIN | POS $_{DCE}$ |
|---|---|---|
|  | **1** | TxD (input) |
| | **2** | CTS (output) |
| | **3** | RTS(input) |
| | **4** | GND |
| | **5** | DTR (input) |
| | **6** | DSR (output) |
| | **7** | -- |
| | **8** | RxD (output) |
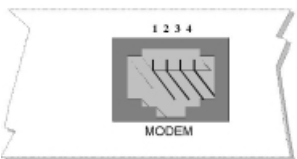
## 2.3.6  ANT Connector

| | PIN | ANT |
|---|---|---|
|  | **Internal** | RF in/out |
| | **External** | GND |

### 2.3.7  Configuration Connector

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

| DB9 CONFIGURATION | RJ45 PIN | CONF |
|---|---|---|
| | **1** | -- |
| | **2** | RxD |
| | **3** | TxD |
| | **4** | -- |
| | **5** | GND |
| | **6** | -- |
| | **7** | -- |
| | **8** | -- |

### 2.3.8  PSTN Connector

| RJ11 PSTN | RJ11 PIN | DSL |
|---|---|---|
| | **1** | Not connected |
| | **2** | Line |
| | **3** | Line |
| | **4** | Not connected |

## 2.4  Technical Specifications

Hardware Architecture

| PROCESSORS | Motorola MPC8xx (Different versions: SAR, T, EN...) 50 MHz |
|---|---|
| MEMORY | 32/64 Mbytes in SDRAM. |
| STORAGE UNIT | FLASH Memory (4 Mbytes / 8 Mbytes) <br> EEPROM 2 Kbytes, NVRAM 128 Kbytes. |

LAN Interface

| | |
|---|---|
| PROTOCOLS | Ethernet (802.3). |
| SPEED | 10 Mbps (10BaseT) or SWITCH* 10/100 Mbps (BaseT). |
| CONNECTOR | RJ45 female. |

DTE/DCE* Interface

| | |
|---|---|
| PROTOCOLS | FRAME RELAY, X.25, PPP, SDLC, X.28, POS-DATAPHONE, SCADA. |
| INTERFACES | Insertable drivers V.24 / V.35 / V.36 / X.21 DTE/DCE, and 2- 4 wire RS-485 |
| SPEED | 200 to 2048 Kbps. |
| CONNECTOR | DB25 Female |

DSL* Interface

| | |
|---|---|
| STANDARDS | Please see our manual on plug-in cards. |
| SPEED | Please see our manual on plug-in cards. |
| CONNECTOR | RJ11 female. |

RF Interface*

| | |
|---|---|
| STANDARDS | Please see our manual on plug-in cards |
| SPEED | Please see our manual on plug-in cards |
| CONECTOR | Please see our manual on plug-in cards |

ISDN* Interface

| | |
|---|---|
| ACCESS | Basic 2B+D |
| SPEED | 2 x 64 Kbps (B channels) |
| CONNECTOR | RJ45 female |

PSTN* Interface

| | |
|---|---|
| ACCESS | V.92 Bis |
| SPEED | 56 Kbps |
| CONNECTOR | RJ11 female. |

POS* Interface

| | |
|---|---|
| CONNECTOR | RJ45 female |
| INTERFACES | V.24 (RS232-C) DCE |
| SPEED | 300 to 64000 bps |
| PROTOCOLS | Dataphone DOV, PPP |

* According to the version

Config Interface

| LOCAL TERMINAL | V.24 9.600-8-N-1- without flow control. |
|---|---|
| CONNECTOR | RJ45 female, located on the front panel of the device.<br><br>DB9 female on the rear part of the C6 model. |

Power Source

| INPUT VOLTAGE | +5V,+15V,-15V DC. |
|---|---|
| OUTPUT VOLTAGE | 2000 mA (to +5V DC) and 200 mA (to +15V, -15V DC). |
| MAXIMUM POWER | 20 W. |

External power supply

| INPUT VOLTAGE | 100-240V AC |
|---|---|
| INPUT CURRENT | 600 mA |
| INPUT FREQUENCY | 50-60 Hz |
| MAXIMUM POWER | 45 VA |

Teldat C6 model Power Source

| INPUT VOLTAGE | 100-240V AC |
|---|---|
| INPUT CURRENT | 1400 mA |
| INPUT FREQUENCY | 47-63 Hz |
| MAXIMUM POWER | 45 W |

Dimensions and weight

| TYPE | Desktop |
|---|---|
| LENGTH x WIDTH x HEIGHT | 220 x 220 x 30 mm. |
| WEIGHT | 0.9 Kg. |

Teldat C6 model dimensions and weight

| TYPE | Desktop box. |
|---|---|
| LENGTH x WIDTH x HEIGHT | 310 x 415 x 43 mm |
| WEIGHT | 3.25 Kg. |

Environmental Specifications

| AMBIENT TEMPERATURE | On: 5º to 45ºC. Off: -20º to 60ºC. |
|---|---|
| RELATIVE HUMDITY | On: 8% to 85%. Off: 5% to 90%. |

## 2.5  Translated safety warnings

| | |
|---|---|
| ⚠️ | 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. |
| | 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. 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. |
| | 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. |
| ⚠️ | 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 following the steps set forth in the relevant section. |
| | 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 correspondiente. |
| ⚠️ | 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).<br><br>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. |
| | 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).<br><br>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 problemas de funcionamiento y envejecimiento prematuro de drivers y demás componentes. |