ATLAS Installation Manual

Teldat-Dm 700-I

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I Important Information

> **Note**
>
> The manufacturer reserves the right to make changes and improvements to the software and hardware of this product, modifying the specifications of this manual without prior notice.

Chapter 1 Introduction

The **ATLAS** , developed by TELDAT, is designed to operate in a wide range of scenarios present in the most common teleprocessing networks: corporate, SME and SOHO.

Through its LAN/WAN connections, this device offers IP router functionality, supporting OSPF and other dynamic routing protocols. The **ATLAS** also offers a variety of connection possibilities in SNA environments: from LLC2 and SDLC to QLLC conversion, which allows direct LAN interconnection to the **ATLAS** (without a communications card in the server), to the SNA over IP function using Data Link Switching (DLSw). This option has enabled all transport network architecture to be standardized on TCP/IP.

With regard to public or private Wide Area Network (WAN) interfaces, the **ATLAS** allows basic access to the Integrated Service Digital Network (ISDN) over D and/or B channels. Besides the direct X.25 option, there is also the possibility of FRAME-RELAY or PPP connections at speeds of up to 2 Mbps.

In its basic configuration, the **ATLAS** is equipped with one LAN interface, three serial WAN interfaces and one ISDN access. Teldat and PCI Mezzanine Cards (PMC), capable of supporting encryption, voice over IP (VoIP), Token Ring, xDSL, etc., can be inserted to expand the configuration.
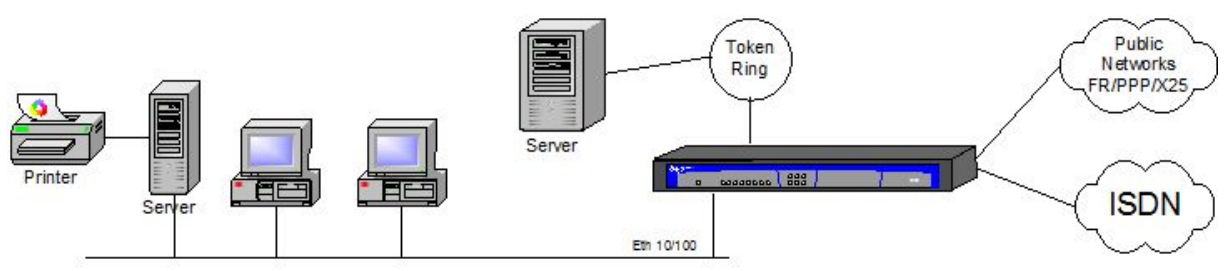
Fig. 2: User scenario: Teleprocess tasks
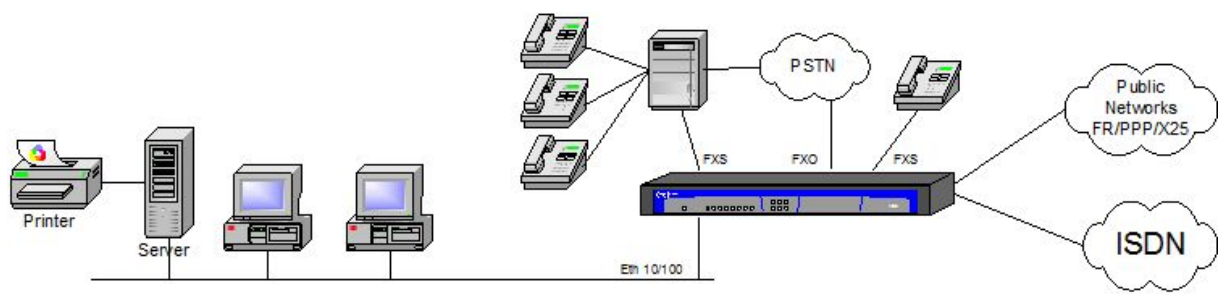
Fig. 3: User scenario: VoIP

1.1 Recycling and the environment

The **ATLAS** should never be disposed of with normal household waste. Please check with your town or city hall about proper disposal that does not ruin the environment. Always comply with the current regulations on waste disposal.

Conviction of environmental law violation can result in fines and other legal penalties.

The cardboard box, the plastic packaging and the components that make up the **ATLAS** , may be recycled in accordance with the current recycling regulations in force in your country.

The device is labeled with a crossed-out bin symbol. This means that, when the device reaches the end of its useful life, it must be taken to a waste collection point and disposed of separately from other urban waste.

Chapter 2 Installation

The **ATLAS** multimedia router can be a desktop or a rack-mounted device. In both cases, please be sure to follow the recommendations given below to ensure correct installation:

> ⚠️ **Important**
>
> BEFORE CONNECTING THE DEVICE, PLEASE READ THE FOLLOWING INSTRUCTIONS CARE-
> FULLY.

2.1 General installation

Workplace conditions

The following recommendations should be noted:

(1) Do not expose the device to direct sunlight, extreme heat, dampness or dusty conditions. Do not place the device among books, papers or other elements that could hinder natural air circulation.

(2) Do not place the device near strong electromagnetic fields, such as those produced by speakers, motors, etc.

(3) Avoid knocks and/or strong vibrations during transport, operation and storage.

Power supply

The **ATLAS** device does not require any special conditions in terms of voltage stability or protection against power malfunctions, as it is already protected.

To avoid electric shocks, residual current circulation and 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.**

> ⚠️ **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, con-nect and disconnect the cables following the steps set forth in the following section.**

To connect the **ATLAS**	To disconnect the **ATLAS**
Make sure the power switch is OFF	Switch off the device.
Connect all the data cables.	Disconnect the power supply cable.
Connect the power cord.	Disconnect the data cables.
Switch on the device.	

2.2 Connections

2.2.1 LAN Ethernet connection

The LAN interface has a female RJ45 connector to connect to the Ethernet 10BaseT networks. Connect them through shielded (STP) or unshielded (UTP) twisted pair cables. Since these cables are not supplied with the equipment and must be purchased separately, please contact your supplier.

Depending on the design of the network, the connection is done through a HUB or straight to the Ethernet interface of another device by means of a crossover cable (please contact your supplier for information on Ethernet crossover cables).

2.2.2 WAN or external modem connection

DTE/DCE multi-standard serial interfaces have a female DB25 connector to connect to an external modem or to networks such as X.25, Frame Relay, etc.

The type of cable required will depend on the type of connection. This cable can be supplied by Teldat.

A flap on the underside of the device provides access to the sockets where the V.24 DTE/DCE, V.35 DTE/DCE, X.21 DTE/DCE and RS-485 2/4 wire drivers can be inserted. **The drivers are not multipurpose** and have a **T** and an **M** stenciled at either end. Define the mode you want by simply inserting the **T** end of the driver into the connector (if you want terminal mode) or the **M** end (if you want modem). Bear in mind that RS-485 drivers cannot change the behavior from modem to terminal. Setting 2-wire or 4-wire operation is done via the router's application software, using the associated interface's configuration commands. This driver must always be connected to the 2H/4H marking, with the arrow pointing towards the rear of the device (closest to the external connector).

> **Note**
>
> The default configuration for the drivers is shown on a label at the bottom panel of the device, close to the flap used to access the drivers.

The configuration of the drivers included in Figure 3 shows WAN 3 operating in DCE mode and WAN 2 in DTE mode. No driver is inserted in WAN 1 and the connectors are shown for didactic purposes.
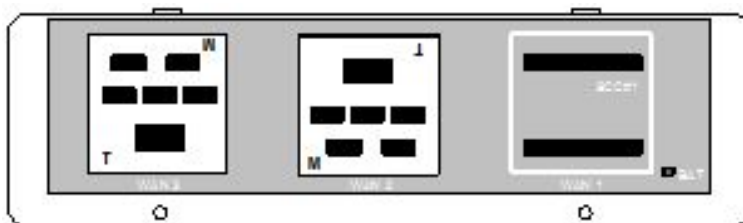
Fig. 4: Driver insertion, depending on the operating mode

2.2.3 ISDN connections

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

For this connection, you can use the flat cable with male RJ45 connectors (provided with the equipment).

Passive-bus terminating resistors

ATLAS routers have a push button (labeled *TERM***) to connect the S-BUS terminating resistors. Inserting the terminating resistors in the wrong place can lead to errors in data (or voice), especially if the S bus is long. The router comes with the push button in the ON position.**

• **Sole or last terminal on the ISDN S bus**

The TERM push button must be in the ON position if the router is the only element connected to the network terminator (NT1, TR1, etc.) or the last element on the ISDN S bus.
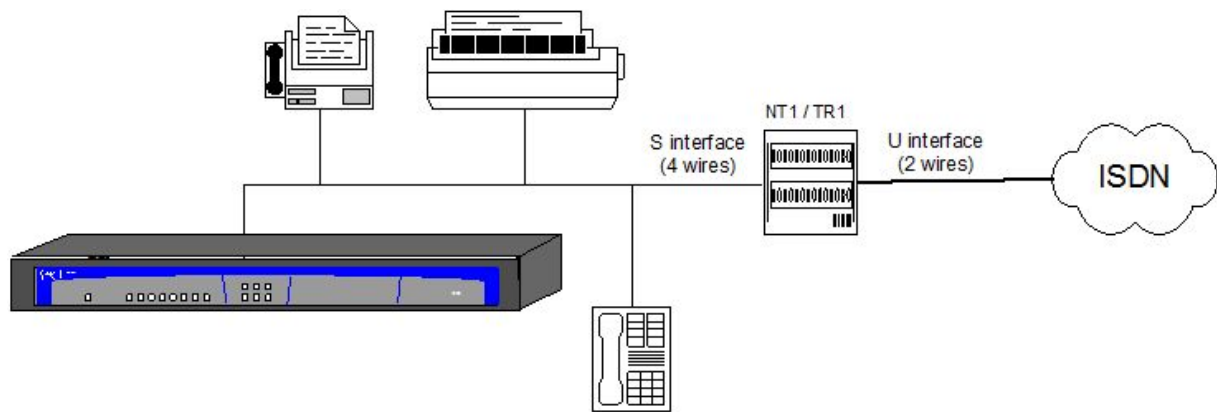
Fig. 5: Sole terminal or last terminal position

- Intermediate position on the ISDN S bus

  The TERM push button must be in the OFF position if the router occupies an intermediate position on the ISDN S bus.
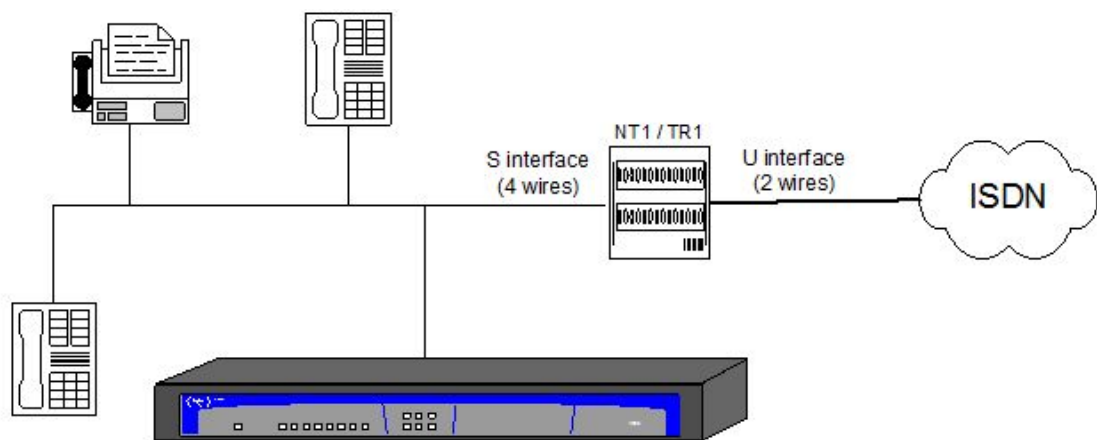
Fig. 6: Intermediate position on the bus

2.2.4 Connection for configuration

A female DB-9 connector on the rear panel of the **ATLAS** routers, referred to as *AUX***, provides access to the device's local console for configuration and monitoring purposes. To use this you must connect the** *AUX* **port to an asynchronous terminal (or to a PC with terminal emulation).**
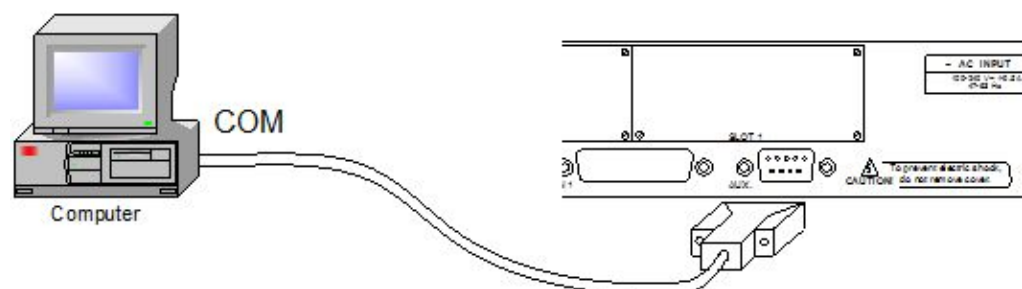
Fig. 7: Connection for configuring/monitoring from the console

Terminal configuration is as follows:

- Speed: 9600 bps

- Eight data bits

- No parity bit

- One stop bit

- No flow control

Also expressed as 9600 8N1. The DB-9 female to DB-9 male cable supplied with the device can be used to connect to the configuration port. If the asynchronous terminal is equipped with DB25 connectors, you should use an additional DB9F to DB25F adapter (not included with the device).

This assembly can also be used to update codes. For further information, please see *Updating the software and configurations* on page 17.

2.3 Rack installation

To install the **ATLAS** router in a 19-inch rack you will need two plastic mounting brackets, as shown in Figure 7. Mounting brackets and screws are not included with the device and must be purchased separately.

Each mounting bracket is attached to the device using two screws, as shown in Figure 7.
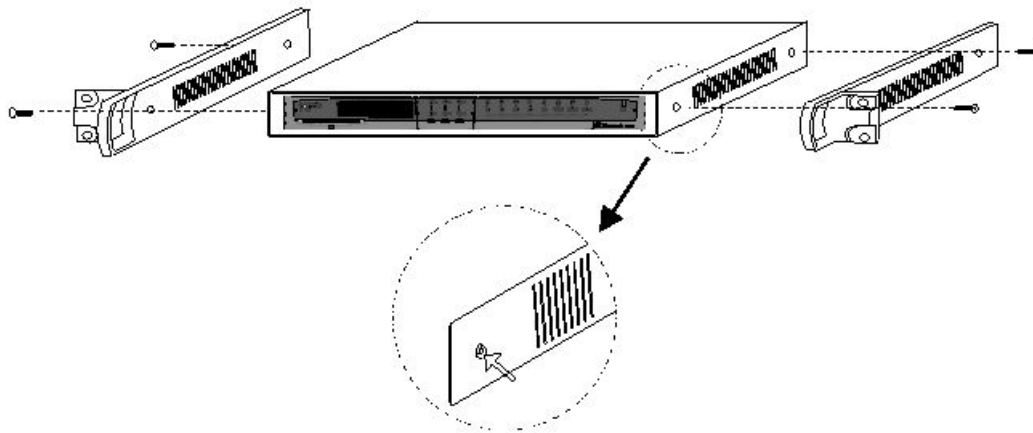
Fig. 8: Attaching the mounting brackets

The **ATLAS** router comes with caps covering the screw holes. Remove these using a sharp tool (such as a small flat screwdriver). We recommend removing the upper cover to do this.

Fig. 9: Device with mounting brackets

2.4 Switching the router on

Once the device has been installed in the workplace (according to the foregoing instructions), it is time to switch it on. When the device is switched on, the auto-test and initialization begin (as explained below).

First, the device carries out a brief auto-test to check that the startup program is correct and to detect and activate the SDRAM present in the device. At each stage of the process, a LED lights up yellow (starting with the *S* LED). If a problem is detected, the process ends and the *S* LED flashes red. Once the process has finished, the console is available and starts showing data.

Once the device has finished booting up, it performs an auto-test and auto-detection test on the motherboard hardware. The device LEDs first light up in yellow, then red and finally green, thus serving as a visual operational check. Then, for each internal element checked, a LED lights up in yellow (starting with the *S* LED). If the test is successful, the LED stays green. If a fault is detected, the corresponding LED stays red and, once the auto-test has finished, depending on the problem, the device resets and repeats the process or lets you use the console to resolve the problem.

Once the device has been initialized, all the LEDs turn off and the routing application code is decompressed. During this process, the *B2* LED flashes green and the console displays both dots and blocks of the decompressed code.

The application runs once the decompression process has finished. The configuration, if found, is read and the device prompt or an access login is displayed. At this point, if everything went smoothly, the *S* LED lights up in green. You will find an example of what is showing on the console in section 3.2.a.

Chapter 3 Description of the device

Both the front and rear panels of the device (depending on the version) can be seen in Figure 9.

The front panel is equipped with LEDs that show the state of the various interfaces and devices belonging to the **AT-LAS** router.

The following can be found on the rear panel: The power point, the AUX console connection (in DB-9 format) for local configuration and monitoring and the microswitches. From the point of view of communications, there is the LAN connection (in RJ45 format) with the link LED (in yellow), the ISDN connection (in RJ45 format) with the TERM push button that allows for ISDN bus termination resistance control, and the WAN connectors (in DB-25 format). Finally, depending on the version, there are a number of different slots allowing expansion cards to be placed inside the device. These slots come with blind covers which, once removed, allow access to the various connectors that support expansion cards.
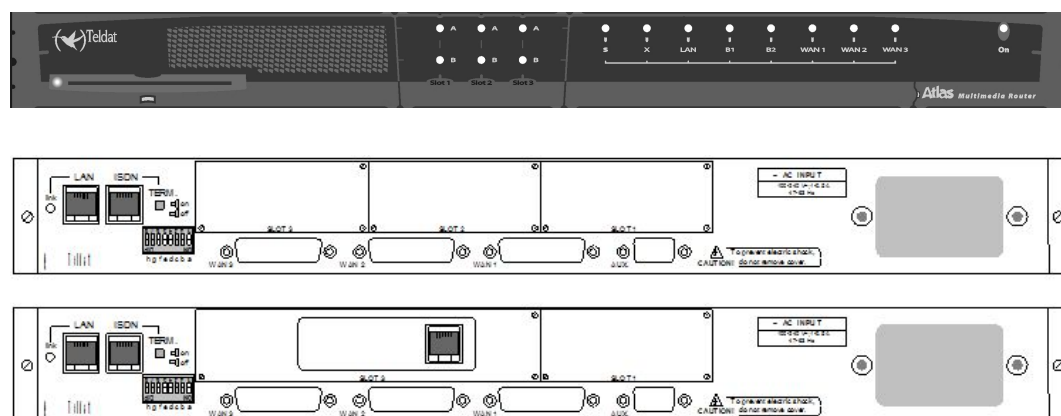
Fig. 11: Front and rear panels of the device

There is a flap on the bottom of the device that provides access to the serial line drivers. Here you can select the operation mode (DTE/DCE) and change from one to the other depending on the standard you are going to use.
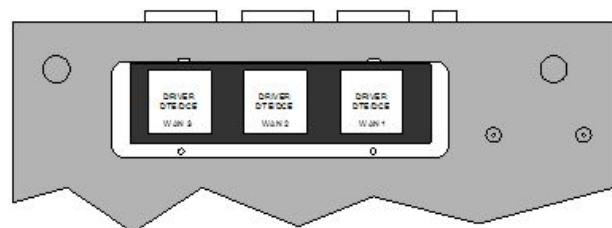
Fig. 12: Driver access flap

3.1 Description of the LEDs
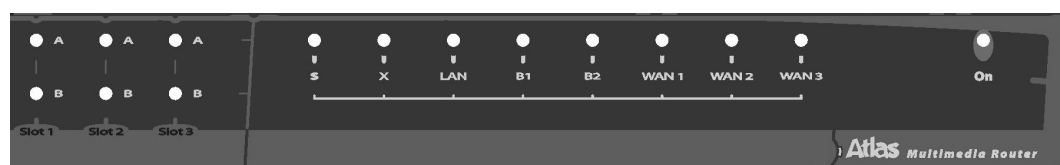
Fig. 13: LEDs on the front panel

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 an active telnet connection and is being remotely accessed. **GREEN:** System initialized and operating. The local console can be used to access the device.
X	Not used in the current version.
LAN	**OFF:** Interface not supported or unavailable. **RED:** Interface unavailable because it has not been enabled or due to a fault in the auto-test. **YELLOW:** Interface initialization in progress. **GREEN:** Interface available. Flashing: maintenance frame being sent.
ISDN B1 – B2	**OFF:** Physical level is unavailable, due to a wiring fault or energy saving issues. **RED:** Transitory, in the process of establishing the call. Permanent, ERROR: errors detected on the line or in the call process. **YELLOW:** ISDN physical level established. **GREEN:** Flashing. Call is established. **GREEN-YELLOW:** Channel configured in permanent mode, i.e., not switch.
WAN 1 – 3	**OFF:** Interface not supported or not available. **RED:** ERROR: A component is malfunctioning. **YELLOW:** Interface initialization in progress. **GREEN:** Flashing. System initialized and operating. **GREEN-YELLOW:** Depends on the type of interface. The interface is down and the backup mechanism is active.
SLOT 1 - 3	**A** **OFF:** Slot is empty. There is no card. **RED:** ERROR: a card has been detected in the slot but it is not working properly. **YELLOW:** Initialization/configuration in progress. **GREEN:** Card initialized and working correctly. **B** **OFF:** The card is not performing any operation. **RED:** Depends on the type of card. **YELLOW:** Depends on the type of card. **GREEN:** Depends on the type of card.

3.2 Description of the microswitches

On the rear of the **ATLAS** routers, you will find a group of microswitches labeled **a** to **h** (see Figure 12). These activate test functions, software loading etc. All microswitches come in the OFF position. They should only be touched when you want to restore the device to its default settings as described below.
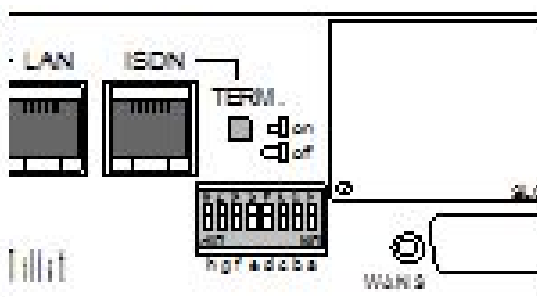
Fig. 14: Location of the microswitches

> **Note**
>
> All microswitches must be in the OFF position to ensure correct operation.

3.2.1 Procedure to ignore the configuration

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

- Use the ON/OFF switch to turn the device off.
- Using a screwdriver or another sharp instrument, move the **e** microswitch to the ON position.
- Use the ON/OFF switch to turn the device on.

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: 01.04.00B  Nov 27 2001 08:19:53
  gzip  Nov 23 2001 16:27:21
P.C.B.: 41  MASK:0501  Microcode:0000
START FROM FLASH
BIOS CODE DUMP.................
BIOS DATA DUMP....
End of BIOS dump
================================================================
      BIOS TELDAT                                    (c)Teldat
================================================================
BIOS CODE VERSION: 01.04.00B
CPU: MPC860   CLK=49152 KHz   BUSCLK=49152 KHz
Date: 12/10/01, Monday          Time: 14:45:13


SDRAM size: 32 Megabytes
   BANK 0: 16 Megabytes (detected)
   BANK 1: 16 Megabytes (detected)
Caches: ON    Write-Back
FLASH: 8 Mb.
NVRAM: 512 Kb.
EEPROM: 2048 Bytes.
WAN1: DCE
WAN2: DTE
WAN3: DTE
ISAC
RDSI_B
RDSI_B
FAST ETHERNET
IDMA2
EXP1: TS-228 DES CARD
PCI BRIDGE
Current production date: 01 28
Current software license: 2 4
Current serial number: 0403/00107
>>
........
TRYING APP CODE DUMP
   (CONFIGURED) APPCODE1.BIN
   (BY SEARCHING APP CODE FILES ON FLASH)
   TRYING: ATLAS.BIN........................................................
......................................................................
......................................................................
.................
APP DATA DUMP..............................................
Running application
Configuration read
Default configuration used
Initializing

Teldat            (c)2001
```

```
Router model Atlas 2 8 CPU MPC860      S/N: 0403/00107
1 LAN, 3 WAN Lines, 1 ISDN Line


*
```

As you can see, the text **Default configuration used** appears in the box. At this point, you can switch the **e** microswitch to OFF (you do not need to turn the device off). The next time you restart the router, the saved configuration will run.

Chapter 4 Appendices

4.1 Smart card

The configuration is stored in a file within the device and is read each time the device is started. It is usually stored in the flash memory. In some models, however, an external device such as a smart card can be used to store the configuration, thus facilitating its transfer from one device to another. The information is compressed to make better use of the space available on the smart card. Console commands are used to choose the means of active storage from which the configuration is read and stored. These commands are explained in the *Dm704-I Configuration and Monitoring* manual.

4.1.1 Description and insertion

The smart card is a card with an integrated circuit where you can store and process information. The amount of space on the card varies, but is always in the order of kilobytes. Figure 13 shows the external appearance of the card: on one side of the card you can see the integrated circuit, and on the other there is an arrow indicating which way to insert it.
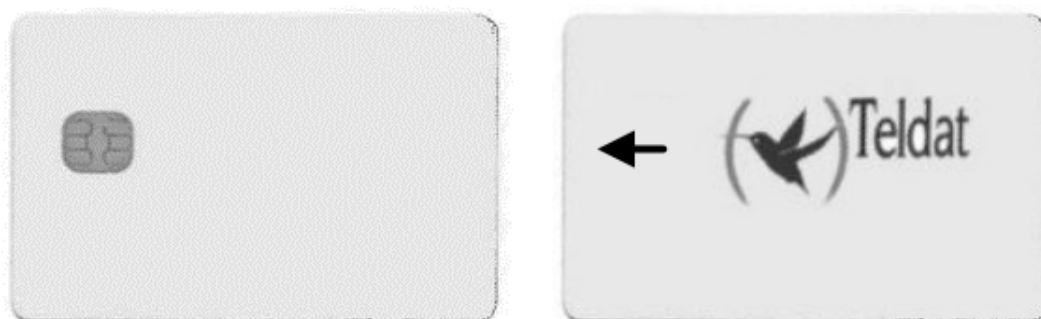
Fig. 15: Smart card: Aspect

The smart card is inserted in a slot on the router front panel. It must be placed in the slot with the arrow side facing up and the chip side facing down. Insert the card carefully, following the arrow, until you hear a small click.

Fig. 16: Smart card insertion slot

A LED next to the slot indicates card activity. This LED glows green when reading or writing to the card. It remains off when there is no activity.

> **Note**
>
> DO NOT remove or insert the card when the activity LED is on. Data stored on the card may be lost if you do so.

4.1.2 Viewing the content

The content of the smart card can be viewed from the console or via FTP.

- In order to view the content of the smart card, or the free space, use the *file list* command on the configuration menu (please see the *Dm704-I Configuration and Monitoring* manual). Since the smart card is fairly slow, it may take a few seconds to respond.

```
*P 4
Config>FILE LIST
Active Device: SmartCard only
```

```
A:     CODE.BIN     2734052      12/00/08      31:57     Flash
A:     ROUTER.CFG       960      03/01/35      03:00     Flash
A:      DEF.CFG         816      03/01/25      03:00     Flash


Flash Available Space : 5198 Kbytes


S:       PC.CFZ       2983                        SmartCard
S:     ROUTER.CFZ      543                        SmartCard
S:      TEST.CFZ       536                        SmartCard


SmartCard Available Space : 8040 bytes
Config>
```

Viewing the smart card files from the console

- To view the content of the smart card when accessing the device via FTP, use the *dir* command in the router containing the smart card. The steps are as follows:

- Enter the login details and password.

> - If you have defined users, use their usernames and passwords as the login and password.
>
> - If you have not defined users, use root as the login.
>
> - If you have not set a password, press **enter**.
>
> - If you have set a console password, enter it to access the FTP server.
>
> - If you have enabled RADIUS server authentication, enter the appropriate password.

- Exit the default FTP device using the *cd ..* command.
- Change to the FTP device using the *cd smc* command.
- Display the contents of the smart card using the *dir* command.

```
C:\atl>ftp 172.24.78.94
Connected to 172.24.78.94.
220 FTP server ready, 1 active clients of 1 simultaneous clients allowed.
User (172.24.78.94:(none)): root
331 User name accepted, need password.
Password:
230 User login complete.
ftp> cd ..
200 CWD root dir successful.
ftp> cd smc
200 CWD Command successful.
ftp> dir
200 PORT is set to IP ADDR = 172.24.51.23  PORT = 1964
150 Data connection open, list transfer in process...
-rwxrwxrwx   1 ftp      ftp           415 Jan 16 1999 ROUTER1.CFZ
-rwxrwxrwx   1 ftp      ftp           864 Jan 16 1999 ROUTER2.CFZ
-rwxrwxrwx   1 ftp      ftp          3551 Jan 16 1999 STARTUP.CFZ
-rwxrwxrwx   1 ftp      ftp           543 Jan 16 1999 ROUTER.CFZ


226 List transfer completed, data connection is closed.
591 bytes received in 18,25 seconds (0,03 Kbytes/sec)
ftp> bye

221 Goodbye.
C:\atl>
```

Viewing the files on the smart card, via FTP, through a Windows MS-DOS screen

4.1.3 Writing

Configurations can be stored on the smart card via FTP or the console. To write via FTP, see the description under section *Updating the software and configurations*.

From the console, you can use the *save* and *file copy* configuration commands. The *save* command always uses the active storage unit. The *file copy* command allows you to select a different unit. You must use the **S:** unit identifier (an S followed by a colon) to refer specifically to the smart card. For further information, please see *Dm704-I Configuration and Monitoring*.

Chose the active unit through the *config-media* command. This provides the following options:

- SMARTCARD-FLASH. Both mediums are considered active but the smart card has priority over the flash memory.
- SMARTCARD. The smart card is considered the only active medium or unit.
- FLASH. The flash memory is considered the only active medium or unit.

By default, the device has the SMARTCARD-FLASH value configured on those devices that support smart card and the FLASH option on those devices that do not. You can use the *file list* command to check which unit is active.

As noted earlier in this section, the configuration is stored on the smart card in compressed format. To indicate this, the files stored on the smart card have the last letter of the extension changed to **z**. A **.z** is added to any file you wish to store on the smart card that does not have an extension. Any file saved on the smart card will be recorded in compressed format using the gzip compression application.

If the file recorded on the smart card is compressed using the gzip compression application before it is sent, the extension will not be compressed or modified. Any files sent from the smart card to a PC via FTP will be transferred exactly as they were stored on the smart card (i.e., compressed). The compression format used can be decompressed with most decompression applications available on the market, including WinZip. However, if the *file copy* command has a smart card file as source file and a flash memory file as destination, the file is copied in decompressed format.

There are also commands that allow you to delete (*file delete* command) and rename (*file rename* command) files in a storage unit. For further information on these commands, please see *Dm704-I Configuration and Monitoring*.

4.1.4 Access mode

Generally speaking, the device will use the active storage medium when booting or saving the configuration.

Depending on the active medium, the device will behave as follows when it boots up:

- SMARTCARD-FLASH. The smart card configuration is read. If there is no card, or if the file cannot be found, it will be read from the flash memory. The device will boot with the default settings if it cannot find the file in the flash memory.

    After reading the smart card configuration file, the device checks that it is written in the flash memory. If the file is not there, then the device writes it to the flash memory so that both mediums are synchronized.
- SMARTCARD. The smart card configuration is read. The device will boot with the default configuration if the card is not there, or if the file is not found.
- FLASH. The flash configuration is read. The device will boot with the default configuration if the file is not found.

Depending on the active medium, the device will behave as follows when the configuration is saved using the *save* command:

- SMARTCARD-FLASH. **The configuration is saved on the smart card and in the flash memory.** The console shows the devices on which the configuration has been stored, highlighting with a warning text the devices where recording has not been possible.
- SMARTCARD. The configuration is saved on the smart card.
- FLASH. The configuration is saved to the flash memory.

Sometimes you might want to boot the smart card device independently of the active medium configured. You may even want the smart card configuration to be automatically recorded to flash memory, thus enabling the device to boot with the smart card configuration even though the card has been removed (this might be useful, for example, for

updating the configuration in a device pool that needs to start from a common base configuration). This is achieved with the **e microswitch** (default configuration microswitch). When the **e** microswitch is active (in the ON position) the following procedure is followed:

(1)   The device will first try to read the STARTUP.CFZ configuration from the smart card. This configuration, if found, is copied to the device's flash memory as ROUTER.CFG (configuration file default name) and is marked as the active configuration file. If there is a ROUTER-CFG configuration in the device's flash memory, it is stored as ROUTER.BAK. This is configured as FLASH regardless of the configured active medium.

(2)   If the configuration is not found, the device will search the smart card for a configuration with the default name of the configuration file (ROUTER.CFZ). If found, it is marked as active. It is NOT copied to the flash memory. This is configured as SMARTCARD-FLASH, regardless of the active medium configured.

(3)   If the device does not find any of the above files, it searches the smart card for a configuration file (files with the **.cfz** file extension). If one is found, the device boots with this configuration, marking it as the active configuration file. As in the previous case, the configuration is NOT copied to the flash memory. This is configured as SMARTCARD-FLASH, regardless of the active medium configured.

(4)   Finally, if the smart card is not available or no configuration file is found, the device will boot with the default configuration. The configured active medium is not modified.

4.1.5 Formatting

Like any software, the smart card must be formatted before use. **The smart card comes pre-formatted by default**. If necessary, however, the **ATLAS** also has the means to carry out formatting.

To format a smart card, you can use the *file format smartcard* command from the configuration menu. Please note that the formatting process destroys any data on the smart card (i.e., you will not be able to retrieve data once you have formatted a card).

You can also format a smart card using the BIOS management menus, accessible when you start the device. The *format* command that allows you to format the card is in the disk menu.

For further information on how to format your card, please contact you regular supplier or an authorized service center.

4.2 Troubleshooting

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

Symptom	Solution
The LEDs do not light up.	Check the power supply (power switch and mains power outlet).
The *S* LED does not light up.	Check that the microswitches are in the OFF position.
The local console does not respond.	Check that you are using the correct cable and that it is connected to the device and the asynchronous terminal. Check that the terminal has been configured with the correct port. Check that the terminal configuration is 9600 8N1. Check that the console is not in the middle of processing events. Make sure the device is not being remotely accessed by telnet.
The local console only shows garbage	Check the terminal has been configured with the correct port. Check that the terminal configuration is 9600 8N1.
The device does not initialize and the console displays the WARM-UP text.	Check that microswitch **a** is in the OFF position. In this situation, you may have to reload the BIOS and the routing application.
The device is very slow in displaying the application prompt.	Check that microswitch **c** is in the OFF position.

You have forgotten the pass-word to access the device	Ignore the configuration using microswitch **e,** as explained in the relevant section.
The *LAN* LED never turns green.	Check that the rear LINK LED is ON. Check the Ethernet cable and the network connection (you may need a crossover cable).
The *WAN* LED never turns green.	Check that you are using the appropriate cable and that the driver is inserted correctly (DTE or DCE). Check that the configuration is correct (speed, protocol, etc.).
The ISDN LEDS never turn yellow or green.	Check that the connection to the bus is correct and the S bus termination switch is in the correct position.
The LEDS indicate that the interfaces are established but there is no data connection.	Check the configuration (routes, IP addresses, serial interface speed, etc.).

4.3 Updating the software and configurations

The BIOS, the routing application code and the configurations are stored in the device's flash memory and handled as a standard disk drive. The executable codes have a *.bin* extension and can by updated via FTP using the **ATLAS** router FTP server, and by XModem through the device's local console.

The configurations have a *.cfg* extension and can only be read and written via FTP. If you want to make copies of your configurations, just get the *.cfg* router file from the router. Similarly, if you want to use a configuration, simply overwrite that file.

> **Note**
>
> UPDATING THE APPLICATION
>
> The code storage system simulates a standard disk drive. Make sure the application file name loaded in the device matches the existing one. If they do not match, the loaded code may not activate automatically and the system will continue to execute the code that existed prior to the upgrade.
>
> If you always use the same file name, the system will delete the old code and replace it with the new code, activating said code automatically.

4.3.1 Updating via FTP

Teldat devices have an internal FTP server that knows whether the file being loaded comes from BIOS, an application or somewhere else. The server operation, therefore, is completely transparent.

> **Note**
>
> By default, the FTP server is located in port 21. The FTP server port can be changed through the configuration. Make sure that you are accessing the correct port. Otherwise you will not get a response from the server.

To transfer code (assuming you have not changed the server port):

• Enter the login details and password.

> - If you have defined users, use their usernames and passwords as the login and password. Depending on the level of access, updates may or may not be performed.
>
> - If there are no defined users, use root as login.
>
> - If you have not set a password, press **enter**.

- If you have set a console password, enter it to access the FTP server.

- If you have enabled RADIUS server authentication, enter the appropriate password.

- Switch to binary mode using the *binary* command.

- Perform the transfer using the *put* command.

- Permanently save the loaded file with the *quote site savebuffer* command.

- If you want the device to restart automatically and start running the new code, you can send the *quote site reload on* command. The device will restart approximately 30 seconds after leaving the FTP session.

```
C:\atl>ftp 172.24.78.94
Connected to 172.24.78.94.
220 FTP server ready, 1 active clients of 1 simultaneous clients allowed.
User (172.24.78.94:(none)): root
331 User name accepted, need password.
Password:
230 User login complete.
ftp> dir
200 PORT is set to IP ADDR = 172.24.51.23  PORT = 1964
150 Data connection open, list transfer in process...
-rwxrwxrwx   1 ftp      ftp       2163872 Nov 27 2001 ATLAS.BIN
-rwxrwxrwx   1 ftp      ftp          4727 Nov 27 2001 ROUTER.CFG
226 List transfer completed, data connection is closed.
395 bytes received in 0,16 seconds (2,47 Kbytes/sec)
ftp> binary

200 TYPE is set to IMAGE.
ftp> hash
Hash mark printing On (2048 bytes/hash mark).
ftp> put atlas.bin
200 PORT is set to IP ADDR = 172.24.51.23  PORT = 1965
150 Data connection open, file transfer in process...
################################################################################
################################################################################
################################################################################
################################################################################
################################################################################
################################################################################
##################################################
226 STOR completed, 2167348 bytes processed, data connection is closed.
2167348 bytes sent in 2,72 seconds (795,65 Kbytes/sec)
ftp> quote site statbuffer
211 Buffer status: MAX-REQ-BUSY 3145728-2179072-2167348 filename: "ATLAS.BIN"
ftp> quote site savebuffer
200 SAVEBUFFER completed O.K.
ftp> quote site reload on
200 RELOAD mode is set to ON.
ftp> bye
221 Goodbye.
C:\atl>
```

Loading the code via FTP from a Windows MSDOS window

If you need help, you can use the *standard FTP help* command to get a list of commands (not all are operational on this server). Entering **help** <command_name> provides help on the specified command. For further information, please check the *Dm724-I FTP Protocol* manual.

You can view the status of the buffer at any time with the *quote site statbuffer* command. If you want to delete it, use the *quote site clearbuffer* command.

4.3.2 Updating via XModem

This updating method is recommended when there is no IP connection to the device or in case of an emergency.

To update:

- Set **c** microswitch **c** in the ON position and switch the device on. The transfer speed is 115200 bps by default. To change the speed, you must access the device console and set the new speed (the following figure shows you how to do this).
- Wait until the *WAN1* LED is green and the *S* LED is slowly flashing yellow. The device is waiting to load the code.
- Load the application file using a program that can send data via the XModem protocol. You will notice that the *S* LED is flashing rapidly, indicating that the transfer is in progress. If the *S* LED turns red, the transfer has failed. Repeat the process slowing down the speed.
- Once the transfer has successfully completed, the *WAN1* LED turns green and the *S* LED continues flashing yellow, indicating that recording is in progress. If the *S* LED turns red, the recording process failed; if it turns green, the recording process completed successfully.
- Once the code has been successfully loaded, deactivate microswitch **c** to prevent the device from entering wait mode when downloading the code via XModem.

☞ **Note**

By default, the application loaded via XModem is saved as APPCODEI.BIN. You can change this name by following the instructions that appear on the console during downloading.

You can also access the BIOS menus to load through the console. To access these menus, press CTRL-T when a series of dots appear after the >> symbols.

```
===================================================================================================
     BIOS TELDAT                                            (c)Teldat
===================================================================================================
BIOS CODE VERSION: 01.04.00B
CPU: MPC860    CLK=49152 KHz    BUSCLK=49152 KHz
Date: 12/10/01, Monday          Time: 18:13:59


SDRAM size: 32 Megabytes
   BANK 0: 16 Megabytes (detected)
   BANK 1: 16 Megabytes (detected)
Caches: ON    Write-Back
FLASH: 8 Mb.
NVRAM: 512 Kb.
EEPROM: 2048 Bytes.
WAN1: DCE
WAN2: DTE
WAN3: DTE
ISAC
RDSI_B
RDSI_B
FAST ETHERNET
IDMA2
EXP1: TS-228 DES CARD
PCI BRIDGE
Current production date: 01 28
Current software license: 2 4
Current serial number: 0403/00107


Current file name: APPCODE1.BIN
Press Ctrl+t to change file name
........

Xmodem whith chk transfer. Default baud rate: 115200
Press any key to change the baud rate
...o.
Select the baud rate transfer:
   1.  9600          4.  38400
   2. 14400          5.  57600
   3. 19200          6. 115200
Press 0 to abort load...
```

```
4

Set baud rate to 38400 and send the file with Xmodem with chk protocol.
When the transfer finish, reset baud rate to 9600.
```
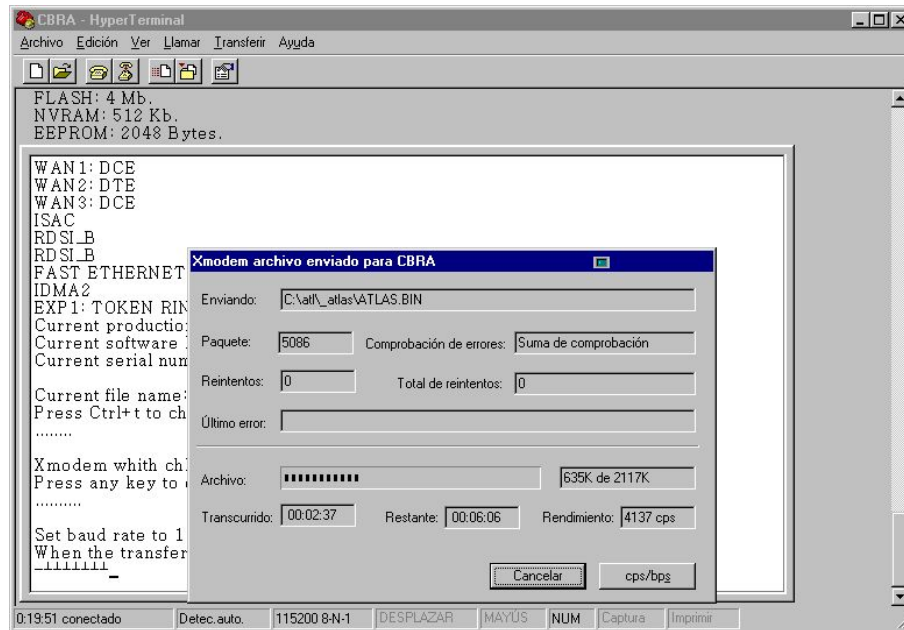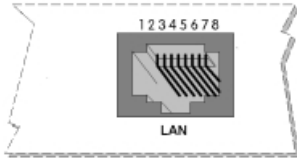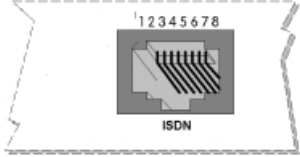
Changing the transfer speed

Fig. 17: Downloading code via XModem through Windows Hyperterminal

4.4 Connector specifications

4.4.1 Twisted pair connections (RJ45)
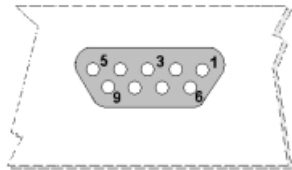
RJ45 LAN	RJ45 PIN	Ethernet
	1	Tx+(input)
	2	Tx-(input)
	3	Rx+(output)
	4	--
	5	--
	6	Rx-(output)
	7	--
	8	--

4.4.2 ISDN connector

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

4.4.3 AUX port connections

This is used to locally configure and monitor the device. It allows the connection of an asynchronous terminal operating at 9,600 bps with no parity and one stop bit (9600 8N1). It is a female DB9 connector that acts as DCE, allowing pin-to-pin connection with a PC asynchronous port or terminal.
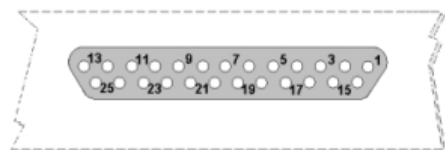
DB9	DB9 PIN	Signal
	3	TXD
	2	RXD
	5	GND
	7-8	Joined pins
	1-4-6	Joined pins

4.4.4 WAN connector

> **Note**
>
> Cables used for multi-purpose Teldat drivers must not be used in these connections. You must use end-to-end pin-to-pin connector cables.

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	S	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				

4.5 Technical specifications

Hardware architecture

PROCESSORS	Motorola MPC860, at 50, 66 or 80 MHz, depending on the version
MEMORY	32, 64 128 or 256 Mbytes of SDRAM, depending on the version
STORAGE UNIT	FLASH Memory, 4, 8 or 16 Mbytes depending on the version EEPROM 2 Kbytes, NVRAM 128 Kbytes

LAN interface

PROTOCOLS	Ethernet (802.3) / Ethernet blue book
SPEED	10 Mbps (10BaseT)/ 100 Mbps (100BaseT)
CONNECTOR	RJ45 female

WAN interfaces

PROTOCOLS	FRAME RELAY, X.25, PPP, SDLC, X.28, SCADA
INTERFACES	Pluggable Drivers V.24 / V.35 / X.21 DTE/ DCE and RS-485 2-4 Wires
Nº PORTS	3
SPEED	200 to 2048 Kbps
CONNECTOR	DB-25 Female

ISDN interface

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

Configuration interface

LOCAL TERMINAL	V.24 9.600-8-N-1-without flow control
CONNECTOR	DB-9 female

AC* power supply

INPUT VOLTAGE	100 – 240 V ~
INPUT CURRENT	1-0.5 A
INPUT FREQUENCY	47-63 Hz

DC* power supply

INPUT VOLTAGE	-48 V
INPUT CURRENT	1A

Dimensions and weight

TYPE	Desktop
LENGTH x WIDTH x HEIGHT	310 x 415 x 43 mm
WEIGHT	3.5 Kg

Environmental specifications

AMBIENT TEMPERATURE	ON: 5º to 55 ºC OFF: -20º to 60 ºC
RELATIVE HUMIDITY	ON: 8 % to 85 % OFF: 5 % to 90 %

* Available depending on version

4.6 PMC Card installation

The **ATLAS** features and interfaces can be amplified by inserting PMC circuit boards (PCI mezzanine card). The **AT-LAS** supports up to 3 boards simultaneously. For proper installation, follow the instructions listed below. Should you encounter any problems, please contact your usual supplier.

(1)   Switch off the device as described in section 2.1 of this manual.

(2)   Remove the device from the workplace and place it in a stable, safe location where it can be easily accessed and handled.

(3)   Open up the device. To do this, remove the top cover (secured to the rear panel by means of two screws). You will need a star screwdriver to do this. Keep the screws in a safe place for later use.

Once the screws have been removed, slide the cover some 10 mm towards the rear panel and then remove it by lifting it upwards and carefully separating it from the sides. Place it in a safe location.


(4) Determine where the PMC board should go. This will depend on which slots are free and on the mechanical characteristics of the PMC board. The following figure shows the **Atlas** motherboard as viewed from the front panel of the device. The different slots have rectangles printed on them and are labeled **H1**, **H2** and **H3**.
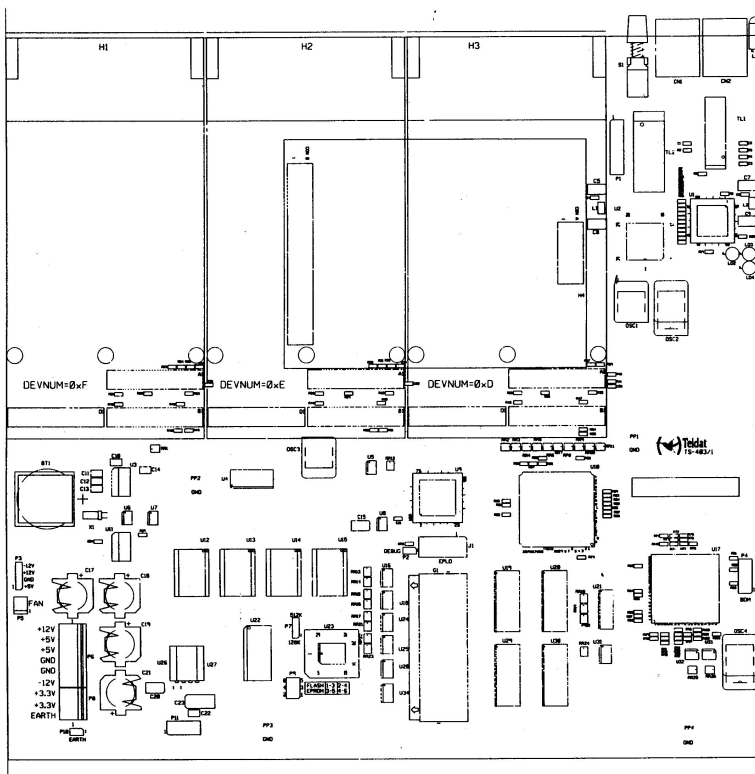
Each slot has a set of elevated connectors with gold contacts and a pair of screws.

(5) Remove the blind cover from the slot selected. This cover is located on the rear panel and is secured by three screws. You will need a flat screwdriver to do this.
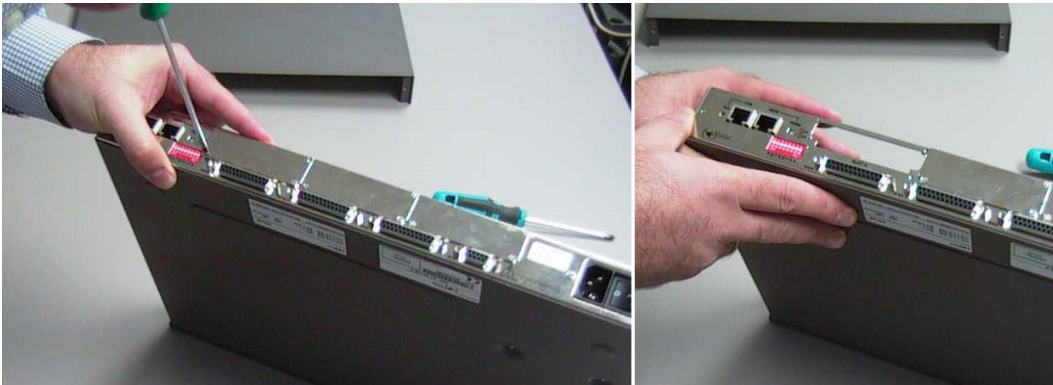
(6)   Screw the circuit board mould that came with the board and that allows the board to sit better in the rear panel of the device. Use the screws mentioned above to fasten it.
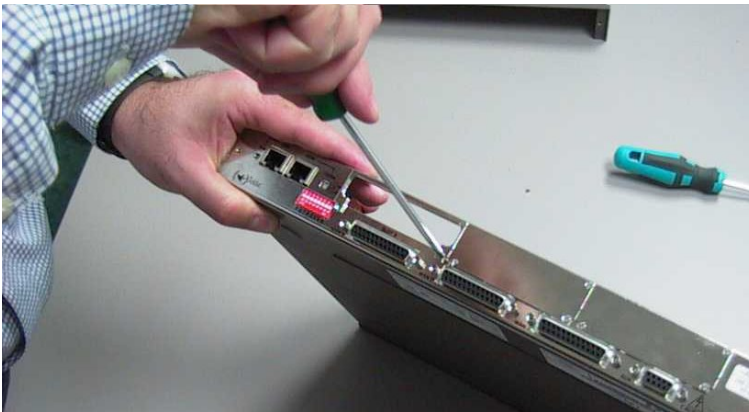
(7)   Place PMC board posts over the screws. Secure these firmly.
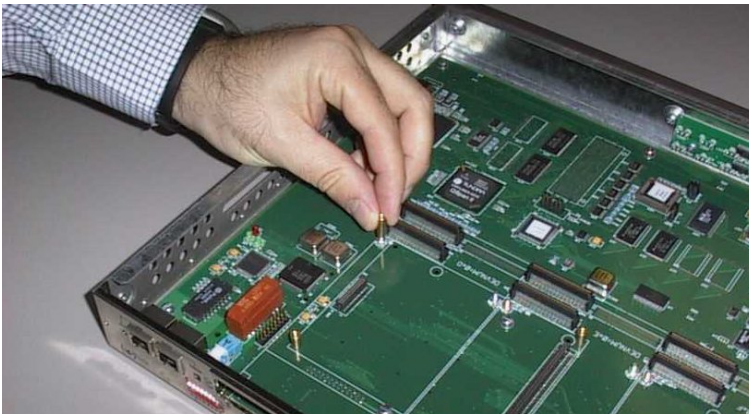
(8)   Place the PMC card in the slot by fitting it into the space on the device's rear panel first, followed by the two PMC connectors. Take care not to force any piece or part of the device. Check that the board is firmly seated in the PMC connectors.
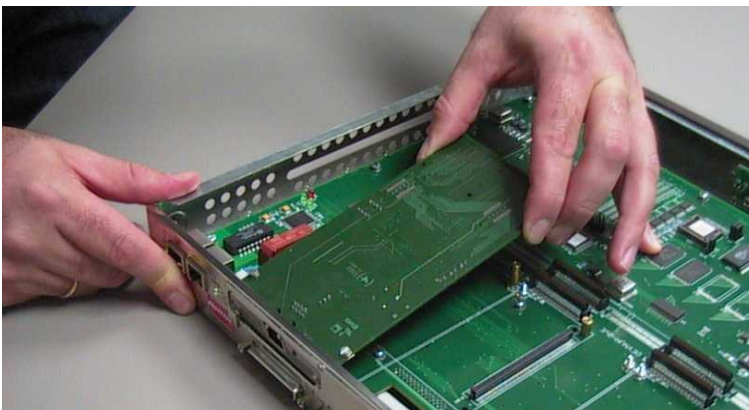
(9)   Screw the PMC board to the posts using two screws and two washers. Firmly tighten the screws without damaging the board.

(10) Close the device using the cover removed in step 3. To do this, place the cover on top of the device, without completely closing it, some 10 mm from the front panel. Check that the cover sits well. Finally, slide the cover along in order to close the device (making sure the edge fits under the front panel). Secure the cover using the screws mentioned in step 3.

(11) Plug in and switch on the device, as described in section 2.1. Check that the device boots as described in section 2.4. If you detect a problem, turn the device off and make sure that the above steps have been carried out correctly. If the problem persists, contact your supplier.

(12) Connect a terminal to the console and check that the device detects the PMC board. This information is displayed at startup, as shown in the following figure.

```
================================================================================
    BIOS TELDAT                                       (c)Teldat
================================================================================
BIOS CODE VERSION: 01.05.03B
CPU: MPC860   CLK=65536 KHz   BUSCLK=32768 KHz
Date: 04/26/02, Tuesday         Time: 11:07:34

SDRAM size: 32 Megabytes
   BANK 0: 32 Megabytes (detected)
Caches: ON    Write-Back
FLASH: 8 Mb.
NVRAM: 128 Kb.
EEPROM: 2048 Bytes.
DPRAM: 7168 Bytes.
WAN1: DTE
WAN2: DTE
WAN3: DTE
FAST ETHERNET
PCI BRIDGE
PCI device: Ethernet controller
   (Bus: 0, Device: 15, Function: 0)
Current production date: 02 39
Current software license: 2 5
Current serial number: 403/00210
```

(13) Finally, to use and configure the board, you need to boot the device with a default configuration.

4.7 Translated safety warnings

	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). 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). 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.