Atlas 250

Installation Manual

Legal Notice

Warranty

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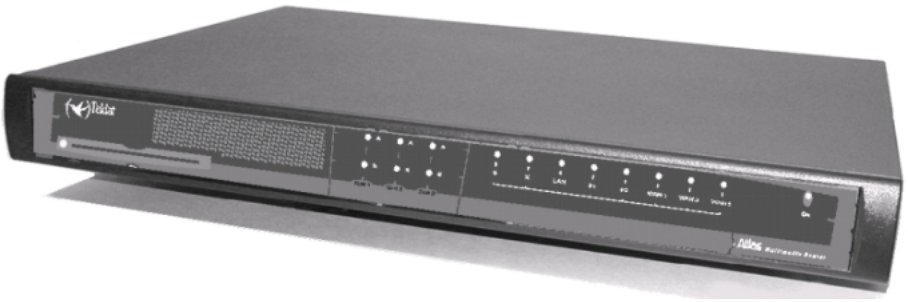
I Important Information

Note

Teldat S.A. reserves the right to make changes and improvements to the appropriate features of the **Atlas 250** in both the software and hardware, modifying the specifications of this manual without prior notice.

Chapter 1 Introduction

The **Atlas 250** is a device developed by Teldat designed to adapt to most common teleprocessing network scenarios: corporate, SME and personal environments (SOHO).



Through its WAN-LAN connections, this device provides router IP functions, supporting OSPF and other dynamic routing protocols. The **Atlas 250** also presents a wide variety of connection possibilities in SNA environments, from LLC2 and SDLC to QLLC conversion, that allow direct interconnection of an **Atlas 250** to a local network without requiring a communication card in the server, and includes SNA transport over IP networks through Data Link Switching (DLSw). This option allows the transport network architecture to be standardized for TCP/IP.

In the case of interfaces with public or private Wide Area Network (WAN), the **Atlas 250** enables access to the Integrated Services Digital Network (ISDN) through a basic access via the D and/or B channel. In addition to the direct X.25 option, the possibility of FRAME-RELAY or PPP connections up to speeds of 2 Mbps has been added.

The basic configuration consists of two LAN interfaces and three serial WAN interfaces and an ISDN access. This can be amplified through the insertion of cards, both in Teldat format as well as in PMC format (PCI Mezzanine Card), which can support encryption, voice over IP (VoIP), xDSL, etc.

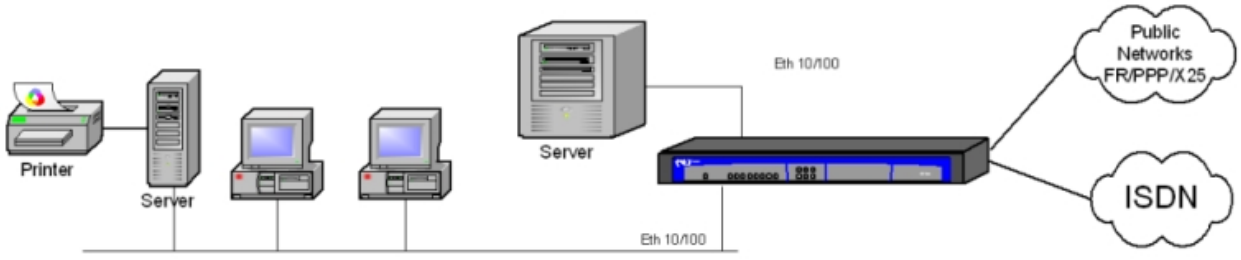


Fig. 1: **User scenario example in teleprocessing tasks**

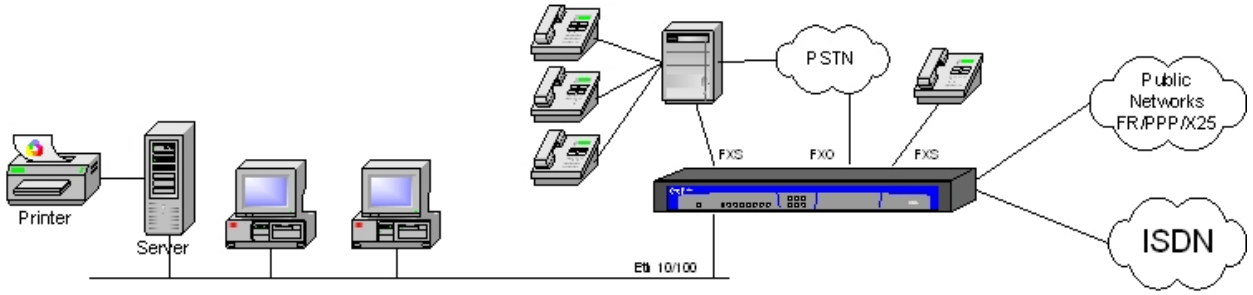


Fig. 2: **User scenario example with VoIP**

Chapter 2 Installation

The **Atlas 250** multimedia router is designed to be both a desktop and a rack device. In either case, in order to accomplish correct installation, please follow the recommendations given below:

Caution

Before connecting the device, please read the following instructions carefully.

2.1 General installation conditions

Workplace Conditions

Bear in mind the following recommendations:

(1) Excessive cold and heat should be avoided, as should humidity and dust. Direct exposure to sunlight should be avoided as well as other heat sources. The device should not be placed amongst papers, magazines or other elements that could hinder natural air circulation.

(2) The device should not be placed very close to strong electromagnetic fields such as speakers, engines, etc.

(3) Knocks and/or strong vibrations should be avoided during transport, operation and storage.

Power supply

The **Atlas 250** communications device does not require special conditions as regards voltage stability or protection against power malfunctions as it is already protected.

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

Warning

All interconnected communication devices should be plugged to THE SAME GROUNDED POWER OUTLET, which should at the same time be of good quality (lower than 10 ohms).

Whether the workplace is provided with an uninterrupted power supply system (UPS), regulated supply or it is independent from the rest (such as lighting, etc.); it is highly recommended that all data devices should be connected to the same power source. This will avoid operating and premature aging problems of drivers and other components.

Warning

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

To connect the Atlas 250	To disconnect the Atlas 250
Make sure that the device power supply switch is OFF	Switch off the device.
Connect all the data cables.	Disconnect the power supply cable
Connect the power supply cable.	Disconnect the data cables.
Switch on the device.	

2.2 Connection

2.2.1 LAN Ethernet connection

The LAN interface has two female RJ45 connectors in order to connect to the Ethernet 10BaseT / 100BaseT networks through shielded twisted pairs (STP) or unshielded (UTP) cables. These cables are not supplied with the equipment; please ask your supplier for information on this.

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

2.2.2 WAN or external modem connection

The DTE/DCE multistandard serial interfaces have a DB25 female connector in order to connect to an external modem or for connection to X.25, Frame Relay networks, etc.

Depending on the type of connection established, a different type of cable will be needed. This cable can be supplied by Teldat if you wish.

On the underside on the device, there is a flap providing access to the sockets needed to insert the V.24 DTE/DCE, V.35 DTE/DCE, X.21 DTE/DCE and RS-485 2/4 wire drivers. **These drivers are not multi-purpose.** The configuration for the operation mode is carried out by inverting the position of the driver (labeled as “T” when acting as terminal and “M” for modem functions). The operation mode is the one indicated by the label closest to the connector. This holds true for all drivers except for the RS-485, where you cannot change the modem or terminal behavior as this always has the same direction. The operating mode selection for 2 or 4 wires is carried out from the router’s software application through the configuration commands for the associated interface. This driver must always be connected to 2W/4W with the arrow pointing towards the rear of the device, which is the closest to the external connection.

Note

The default configuration for the drivers (on leaving the factory) is indicated on a label located on the underside of the device, close to the drivers access flap.

In the below figure you can see a given drivers configuration. WAN 1 operates in DCE mode and WAN 2 in DTE mode.

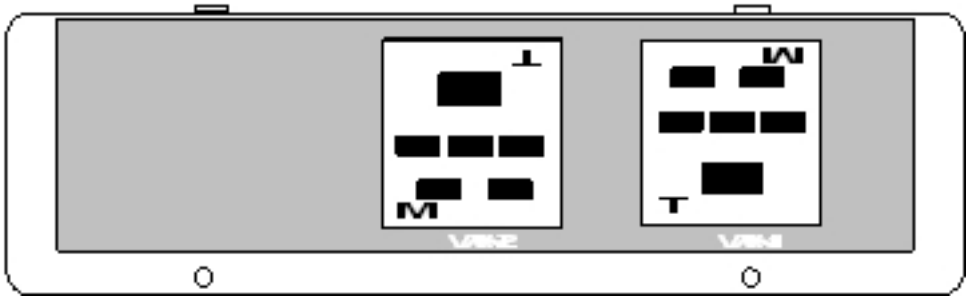


Fig. 3: **Situation of the drivers depending on operating mode**

2.2.3 ISDN Connection

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

You can use a flat cable with RJ45 male connectors, provided with the device.

Passive-Bus terminal resistances

The **Atlas 250** routers have a pushbutton (labeled as “TERM”) in order to connect the BUS-S termination resist-

ances. Placing these terminal resistances in the correct position is important because, otherwise, this can lead to errors in data (or voice), particularly if the “S” bus line is long. On leaving the factory, the pushbutton is in the “ON” position by default.

- The only or last terminal in the ISDN “S” bus

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

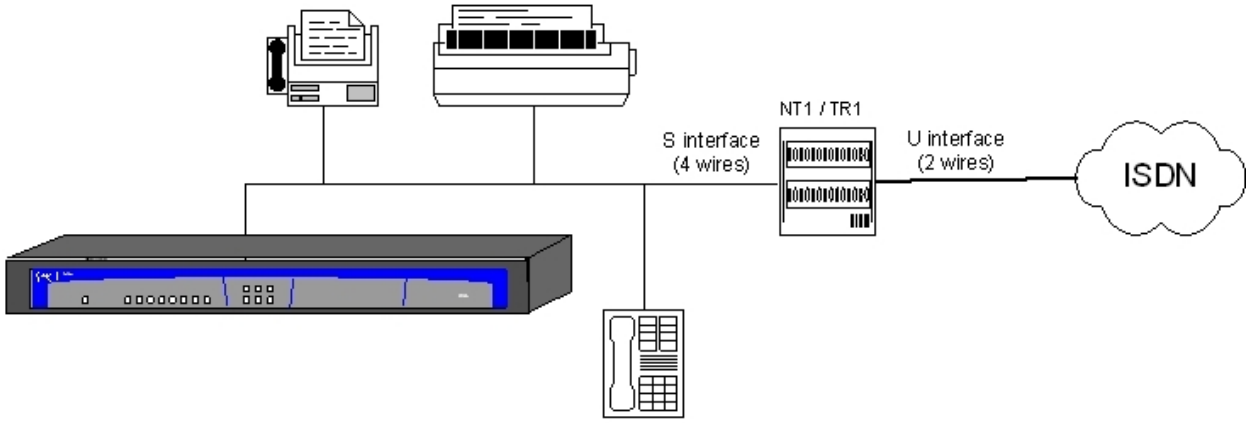


Fig. 4: **Location as the only or last terminal**

- Intermediate position in the ISDN “S” bus

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

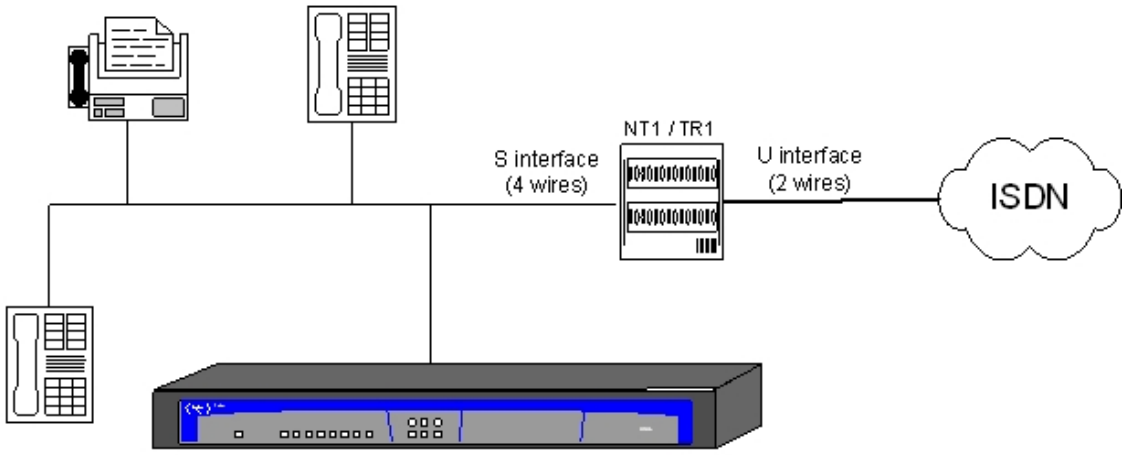


Fig. 5: **Location in an intermediate position in the bus**

2.2.4 Connecting for configuration

The **Atlas 250** routers have a DB-9 female connector on the rear panel referred to as “AUX”, which provides access to the device local console for configuration and monitoring purposes. In order to use this, you must connect the “AUX” port to an asynchronous terminal (or to a PC with terminal emulation).

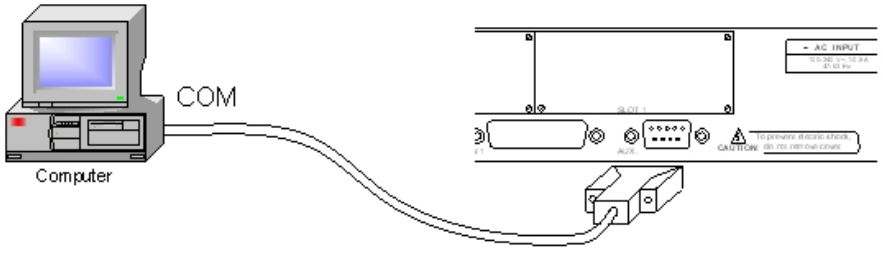


Fig. 6: **Connection for configuration/monitoring via console**

Note

Configuration for the terminal must be:

- Speed: 9600 bps.

- Eight data bits.

- No parity bit.

- One stop bit.

- No type of flow control.

Also expressed as 9600 8N1. The connection to the configuration port can be carried out with DB-9 female-DB-9 male cable provided with the equipment. In cases where the asynchronous terminal has DB25 connectors, you must use an additional DB9F-DB25F adapter (not included with the equipment).

This assembly can also be used to update the device code. For further information, please see *Updating the software and the configurations* on page 16.

2.3 Installation in a rack

In order to install the **Atlas 250** router in a 19-inch rack, you need two plastic strips like the ones shown in the figure. The strips and the associated screws are not included in the basic packet and need to be acquired separately.

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

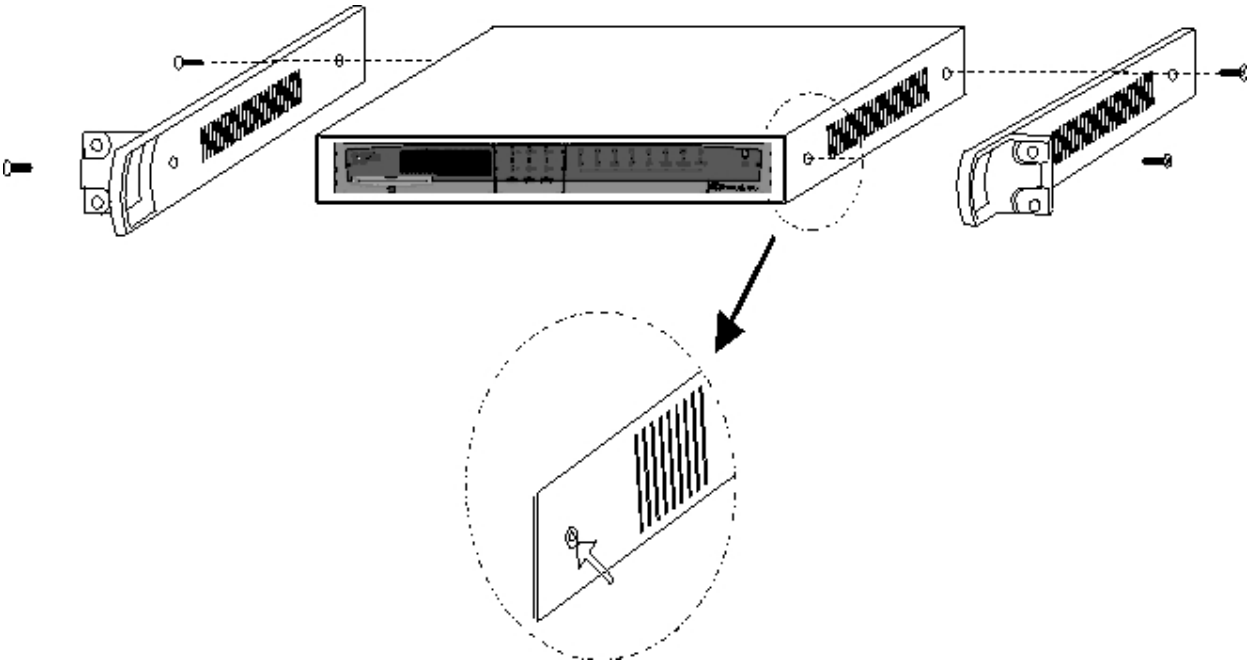


Fig. 7: **Attaching the strips**

The spaces for the screws in the **Atlas 250** router leave the factory protected by covers. These can be removed by using a sharp tool (such as a small flat screwdriver). We recommend removing the upper cover in order to carry this out more easily.

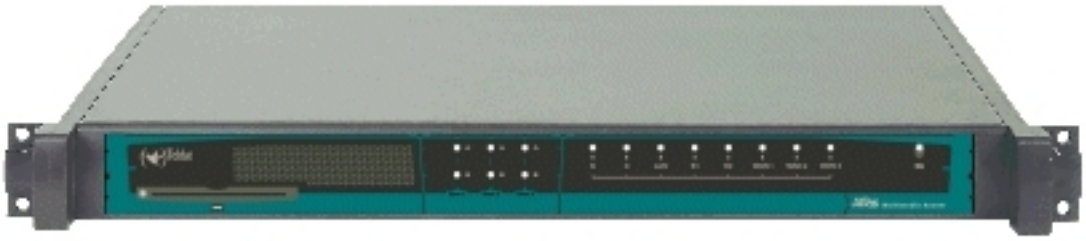


Fig. 8: **Device with the strips**

2.4 Switching on the device

Once the device has been installed in the workplace following the steps previously given, you can switch the device on. Once this has been carried out, a process of auto-test and initialization, explained below, takes place.

Firstly, the device carries out a brief auto-test where it checks that the startup program is correct and moves on to detect and initialize the SDRAM present in the device. With each step taken, a LED lights up in yellow beginning with the *S* LED. If any problems are detected the process stops and the *S* LED flashes in red. Once this process is over, the console is available and begins to display data.

Once the booting process has finished, an auto-test and auto-detection test of the motherboard hardware takes place. All the device LEDs light up in yellow, followed by red and then green. This simplifies the operations visual checking procedure. Subsequently, for each tested internal element, a device LED lights up in yellow beginning with the *S* LED. If the test is successful the LED remains green. If any malfunctions are detected, the corresponding LED remains lit up in red and once the auto-test has completed, depending on the problem, the device resets and repeats the process or allows you to operate through the console in order to solve the problem.

Initializing the device, all the LEDs switch off and the routing application code is decompressed. During this process the *B1* LED flashes in green and the console displays both the dots and the blocks of the decompressed code.

Once the decompression process is over, the application executes. The configuration, if found, is read and the device prompt or an access login is displayed. At this point, if everything has gone smoothly, the *S* LED is lit up in green. An example of what is displayed on the console can be found in *Procedure to ignore the configuration* on page 10

Chapter 3 Description of the equipment

The outward appearance of the equipment can be seen in the following figure. Here you can see both the front panel and the various rear panels depending on the version.

On the front panel, you can see the LEDs which display the status of the various interfaces and devices that the Atlas 250 router has.

Located on the rear panel is the power point, the AUX console connection (in DB-9 format) for local configuration and monitoring and the micro-switches. From the communications point of view, you will find the connection to the LAN (in RJ45 format) with the link LED (in yellow), the ISDN connection (in RJ24 format) with the TERM pushbutton controlling the ISDN bus terminal resistance and the WAN connectors (in DB-25 format). Finally, depending on the version, you will find diverse types of slots which permit access to the various expansion cards that can be situated in the interior of the device. By default, these slots are protected by blind covers and once removed allow you to access the distinct connectors supporting the expansion cards.

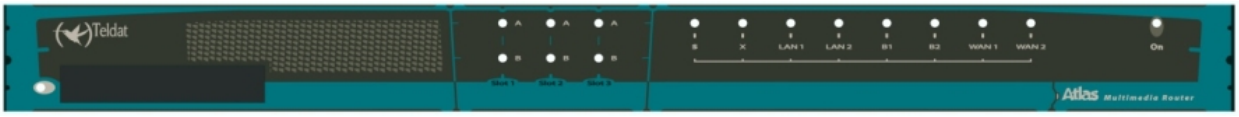


Fig. 9: **Front panels of the equipment**

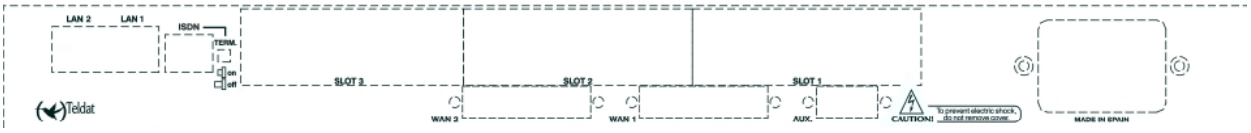


Fig. 10: **Rear panels of the equipment**

On the underside of the device you will see a flap that provides access to the serial line drivers. Here you can select the operating mode (DTE/DCE) and change from one to the other depending on the standard you are going to use.

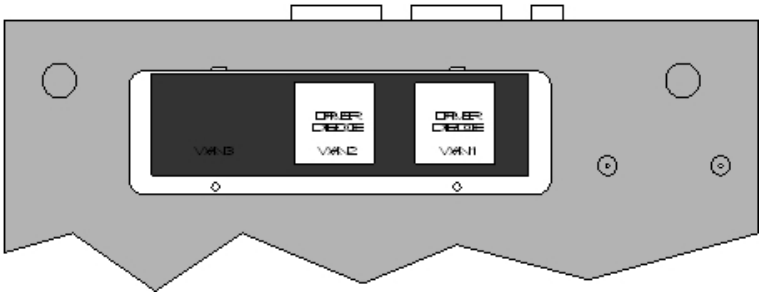


Fig. 11: **Location of the drivers access flap**

3.1 Description of the LEDs

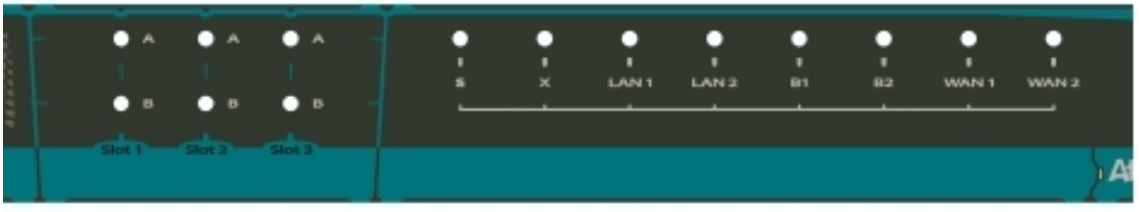


Fig. 12: **Front panel LED details**

ON		Power-on indicator. It lights when connected to the power.
S		DEVICE OPERATION: **OFF:** System off. **RED:** ERROR: Component operating incorrectly. **YELLOW:** The device has a telnet connection activated and is being remotely accessed. **GREEN:** System initialized and operating. The device can be accessed via the local console.
X		Not used in the current version.
LAN1-2		**OFF:** Interface not supported or is not available. **RED:** Interface is not available either because it is not enabled or there is a malfunction in the auto-test. **YELLOW:** Interface initialization in process. **GREEN:** Interface available. Flashing: Maintenance frame being sent.
ISDN **B1 – B2**		**OFF:** Physical layer not available, either due to cabling problems or to energy saving procedures. **RED:** Temporary, in process of establishing a call. Permanent, ERROR: errors have been detected in the line or in the call process. **YELLOW:** ISDN physical layer is established. **GREEN:** Flashing. Call is established. **GREEN-YELLOW**: Channel configured in permanent mode, i.e. not switch.
WAN **1 – 2**		**OFF:** Interface not supported or not available. **RED:** ERROR: component malfunction. **YELLOW:** Interface initialization in process. **GREEN:** Flashing. System initialized and operating. **GREEN-YELLOW**: Depending 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 operating incorrectly. **YELLOW:** Initialization/configuration in process. **GREEN:** Card initialized and operating correctly.
	B	**OFF:** The card is not executing any operations. **RED:** Depending on the type of card. **YELLOW:** Depending on the type of card. **GREEN:** Depending on the type of card.

3.2 Description of the microswitches

In the interior of the **Atlas 250** routers, you will find a group of SW2 micro-switches. These are identified by the numbers '1' to '8' as shown in the below figure. These activate test functions, software loading functions etc. All these micro-switches are in the OFF position by default. These should not be handled by the user other than to reestablish the default configuration as described below.

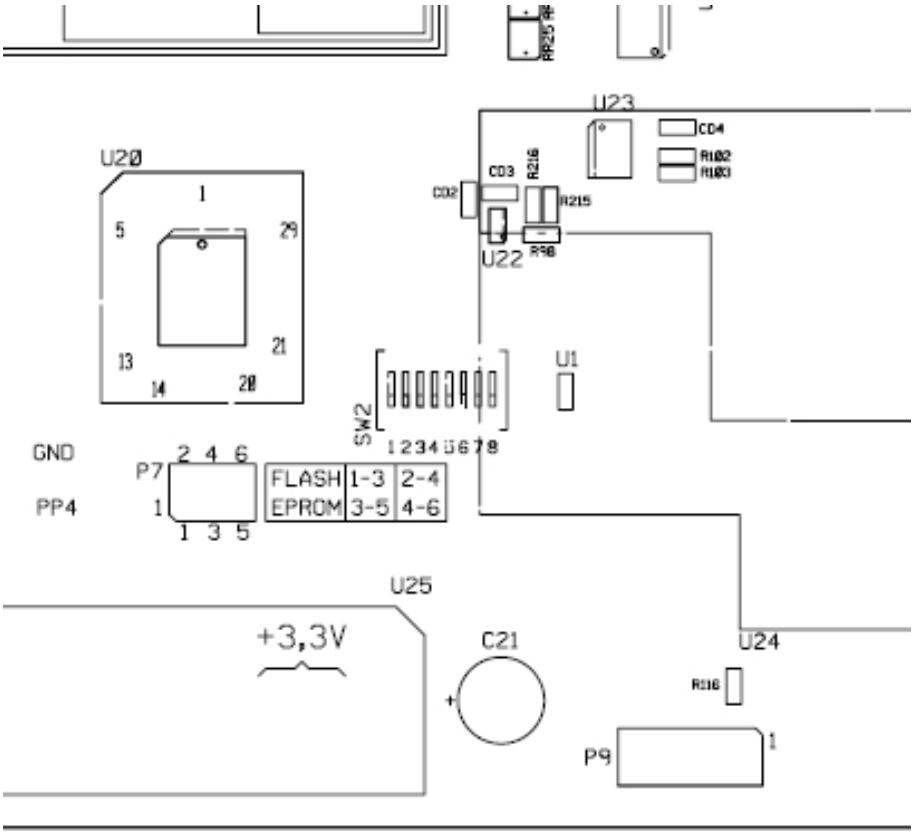


Fig. 13: **Location of the micro-switches**

Note

To ensure correct operating procedures, all the micro-switches must be in the OFF position.

3.2.1 Procedure to ignore the configuration

Follow the steps below if you have to discard the whole configuration of the device (for instance, if you cannot remember the password).

- Turn off the device through the ON/OFF switch.
- Using a screwdriver or another sharp instrument, move micro-switch '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: 01.02  Dec 28 2004 12:56:28
  gzip  Dec 28 2004 12:56:29
P.C.B.: 72  MASK:0064  Microcode:002D
START FROM FLASH
BIOS CODE DUMP.................
BIOS DATA DUMP...
End of BIOS dump
```

```
============================================================
     BIOS TELDAT                          (c)Teldat
============================================================
BIOS CODE VERSION: 01.02
```

```
CLK=294912 KHz   BUSCLK=65536 KHz   L0
Date: 02/01/05, Tuesday         Time: 11:25:04

SDRAM size: 128 Megabytes
   BANK 0: 128 Megabytes (detected)
Caches: ON    Write-Back
FLASH: 8 Mb.
NVRAM: 128 Kb.
EEPROM: 2048 Bytes.
DPRAM: 16384 Bytes.
WAN1: DTE
WAN2: DTE
ISAC
RDSI_B
RDSI_B
FAST ETHERNET 1
FAST ETHERNET 2
PCI device: Host bridge
  (Bus: 0, Device: 0, Function: 0)
Current production date: 04 44
Current software license: 6 56
Current serial number: 472/00144
BIOS MAC Add: 00-a0-26-70-00-90
>>
........
TRYING APP CODE DUMP
   (CONFIGURED) atlas2g.bin ver.: 0.10.5.1 0.0.0.0 ........
.........................................................
.........................................................
.......................
.........................................................

............
APP DATA DUMP.......................
Running application
Empty configuration used
Initializing

Press any key to get started
```

As you can see, the text "**Empty configuration used**" appears in the box. On reaching this point, you can set micro-switch '5' in the OFF position (it is not necessary to turn off the device). This way, the saved configuration will run next time you restart the device.

Appendix A Technical Information

A.1 Smart Card

The configuration is stored in a card in the device and is read each time the device boots. This configuration is generally stored in the Flash memory of the device. However, in some models, you can use an external device in order to store the configuration: a *Smart Card*, which simplifies the transfer of configurations from one device to another. The information is compressed in order to take advantage of the space available in the *Smart Card*. The choice of the active storing medium where you read the configuration and where this is stored is carried out through console commands. These commands can be found in more detail in the "Dm704-I Configuration and Monitoring" manual.

A.1.1 Description and insertion

The *Smart Card* is a card with an integrated circuit permitting you to store and process information. The available space is variable, however it can always be measured in Kilobytes. The external aspect of the card is displayed in the following figure: 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 the card.

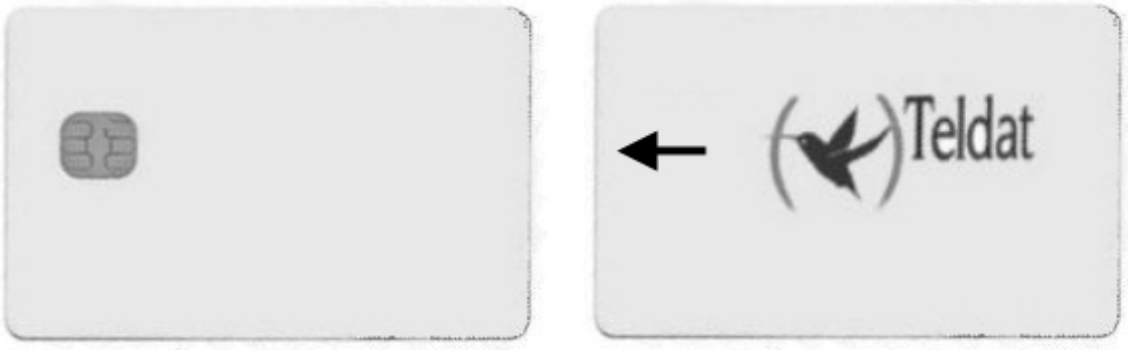


Fig. 14: **Aspect of a SmartCard**

In those models that have this device, the *Smart Card* is inserted in the slot located on the front panel of the equipment. The card should be placed in the slot so that the arrow is face up and the chip face down. The card must be carefully inserted following the arrow until a small click is heard.

Fig. 15: **SmartCard insertion slot**

Next to the insertion slot you can see a LED which indicates the card activity. This LED lights up in green when it is reading or writing in the card and remains off when there is no activity.

Note

DO NOT extract or introduce the card when the activity LED is on. Otherwise, data stored in the card may be lost.

A.1.2 Viewing the content

The content of the *Smart Card* may be viewed from either the console or through FTP.

- In order to view the content of the *Smart Card*, or the free space, use the 'FILE LIST' command from the configuration menu (please see manual "Dm704-I Configuration and Monitoring"). Given that the *Smart Card* is a slow device, 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's available files on the console

- In order to view the content of the *Smart Card* accessing the device via FTP, use the 'dir' command from the equipment assembled for the *Smart Card*. The steps are as follows:
- Introduce the login and password.

  - If you have defined users, use the names and passwords assigned to these as login and password.

  - If there are no defined users, use "root" as the login.

  - If the password has not been configured, press "intro".

  - If you have a console password configured, introduce this password in order to access the FTP server.

  - If authentication with a RADIUS server is activated, introduce the corresponding password.

- Exit the FTP default device through the "cd .." command.
- Change to the FTP device using the *Smart Card* through the "cd smc" command.
- Display the content of the *Smart Card* through 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 available files in the Smart Card via FTP using a Windows MSDOS screen

A.1.3 Write

Configurations can be stored in the *Smart Card* through FTP and from the console. Writing through FTP is carried out as described in the "Updating the software and the configurations" appendix of this manual.

From the console, you can use the 'SAVE' and 'FILE COPY' configuration process commands. The 'SAVE' command always uses the active storing unit. The 'FILE COPY' command allows you to select a unit distinct to the active one (in order to specifically refer to the *Smart Card*, you need to use the unit identifier "S:" (s following by a colon). For further information, please see manual "Dm704-I Configuration and Monitoring".

Choosing the active unit is done through the 'CONFIG-MEDIA' configuration command. This allows you to select the following options:

- SMARTCARD-FLASH. Both mediums are considered active; priority however is given to the *Smart Card* over the Flash memory.
- SMARTCARD. The *Smart Card* is considered as the only active medium or unit.
- FLASH. The Flash memory is considered as the only active medium or unit.

By default, the device has the value 'SMARTCARD-FLASH' configured in those devices that support *Smart Card* and the 'FLASH' option for those devices which don't. You can check which unit is active by using the 'FILE LIST' command.

As previously indicated in this appendix, the configuration in the *Smart Card* is stored in compressed format. To indicate this, the files stored in the *Smart Card* have the last letter of the extension changed to "*z*". If the file you wish to store in the *Smart Card* does not have any extension a ".*z*" is added. Any file saved in the *Smart Card* will be recorded in compressed format through the gzip compression application.

In cases where the file recorded in the *Smart Card* is already sent in gzip compressed format, this will not be compressed nor will the extension be modified. Files transferred via FTP from the *Smart Card* to a PC will be transferred in exactly the same way as they were stored in the *Smart Card*, i.e. compressed. The compression format used can be decompressed with the majority of decompression applications available on the market including WinZip. The 'FILE COPY' command however, should the original file be a *Smart Card* file destined to be a Flash memory file, will copy the file in decompressed format.

Additionally there are commands to delete ('FILE DELETE' command) and to rename ('FILE RENAME' command) files in a storage unit. For further information on these commands please see manual "Dm704-I Configuration and Monitoring".

A.1.4 Access Mode

Under normal circumstances, the device on booting or on saving the configuration uses the storing medium which is configured as active.

When the device boots, the behavior, depending on the active medium, is as follows:

- SMARTCARD-FLASH. The *Smart Card* configuration is read. If the card is not present or the file cannot be found, the operation is repeated in the Flash. If the file is not found in the Flash memory then the device will boot with the default configuration.

  After reading the *Smart Card* configuration file the device checks to see that this is written in the Flash memory. If the configuration is not present then the device enters it so that both mediums are synchronized.
- SMARTCARD. The *Smart Card* configuration is read. If the card is not present or the file cannot be found, the device will boot with the default configuration.
- FLASH. The Flash configuration is read. If the file cannot be found the device will boot with the default configuration.

On saving the configuration through the 'SAVE' command, the behavior, depending on the active media is as follows:

- SMARTCARD-FLASH. **The configuration is saved in both the Smart Card and the Flash.** The console indicates the devices where the configuration has been stored and through a warning text will show the devices where recording has not been possible.
- SMARTCARD. The configuration is saved in the *Smart Card.*
- FLASH. The configuration is saved in the Flash memory.

Occasionally, you may wish to boot the *Smart Card* device independently of the active medium configured in the device and you may want the *Smart Card* configuration to be automatically stored in Flash. In this way, in subsequent device start-ups, this will boot with the configuration present in the *Smart Card* even if the card has been extracted (this could be useful for example to update the configuration in a device pool where you need to start from a common base configuration). To do this, use **micro-switch '5'** (default configuration micro-switch) so that, provided this is active (ON position), the following procedure will be executed:

(1) Firstly, the device will try to read a configuration titled 'STARTUP.CFZ from the *Smart Card*. If this is found, this configuration is copied to the device Flash memory with ROUTER.CFG as name (configuration file device default name) and is marked as the active configuration file. If the device has a ROUTER.CFG configuration in the Flash memory, this is stored as ROUTER.BAK. This is configured as "FLASH" independently of the configured active medium.

(2) If this cannot be found, the device will search the *Smart Card* for a configuration with the default name of the configuration file (ROUTER.CFZ). If this is found, it is marked as active and NOT copied to the Flash memory. This is configured as "SMARTCARD-FLASH" independently of the configured active medium.

(3) In cases where neither of the above mentioned files is found, the device will search the *Smart Card* for any configuration file (files with extension .cfz). If one is found, the device will boot with this configuration marking it as the active configuration file. In the same way as the above case, the configuration will NOT be copied in the Flash memory. This is configured as "SMARTCARD-FLASH" independently of the configured active medium.

(4) Finally, if the *Smart Card* is not available or none of the configuration files is found, then the device will boot with the default configuration. The configured active medium is not modified.

A.1.5 Format

As with any logical support, the *Smart Card* must be formatted before it can be used. **The Smart Card is already formatted on leaving the factory**. However, should it be necessary, the **Atlas 250** has the means to do this.

In order to format a *Smart Card*, you can use the 'FILE FORMAT SMARTCARD' command in the configuration menu. Please bear in mind that the formatting process destroys any information that is stored in the *Smart Card*. Consequently, if you format a card containing valid information, it will not be possible to recover this.

You can also format a *Smart Card* from the BIOS management menus which are accessible on booting the device: within the disk menu you will find the "format" command allowing you to format the card.

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

A.2 Troubleshooting

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

Symptom	Solution
None of the LEDs lights up on the device	Check the power supply to the device (power source, ON/OFF switch, main power outlet).
The *S* LED does not light up.	Check that all the micro-switches are in the OFF position.
The local console does not respond.	Check that you are using the correct console cable and that this is connected to the device and the asynchronous terminal. Check that the terminal has the correct port configured.

	Check that the terminal configuration is 9600 8N1. Check that the console is not in an events process. Check that the device is not being remotely accessed via telnet.
The local console is only displaying garbage	Check that the terminal has the correct port configured. Check that the terminal configuration is 9600 8N1.
The device does not initialize and the console displays the WARM-UP text.	Check that micro-switch '1' is in the OFF position. In this situation, you may have to reload the device BIOS and the routing application.
The device is very slow in displaying the application prompt.	Check that micro-switch '3' is in the OFF position.
You have forgotten the password to access the device	Ignore the configuration through micro-switch '5' as explained in the section on micro-switches.
The *LAN* LED never lights up in green.	Check that the rear LINK LED is ON. Check the Ethernet cable and the connection to the network (you may need a crossover cable).
The *WAN* LED never lights up in green.	Check that the cable you are using is adequate, that the driver is inserted in the correct position (DTE or DCE). Check that the configuration is correct (speed, protocol, etc.).
The ISDN LEDs never light up in either yellow or green.	Check that the connection to the bus is correct and that the Sbus terminal switch is in the correct position.
The LEDS indicate the interfaces are established but there is no connectivity at the data levels.	Check the configuration (routes, IP addresses, serial interface speed, etc).

A.3 Updating the software and the configurations

Both the BIOS as well as the routing application code and the configurations are stored in the device flash memory. This is handled as a standard disk unit. The executable codes have a *.bin* extension and can by updated via FTP using the **Atlas 250** router FTP server, and by XModem through the device local console.

The configurations have a *.cfg* extension and can only be read and written via FTP. If you wish to make copies of your configurations, simply obtain the *.cfg* router file possessed by the router. In the same way, if you wish to use a configuration, simply overwrite the aforementioned file.

Note

UPDATING THE APPLICATION

The code storage system simulates a standard disk drive unit: you must make sure that the application file name loaded in the device coincides with that already existing. If this is not so, it is possible that the loaded code will not automatically activate and the system will continue to execute the code that existed prior to the updating.

If you always use the same file name, the system will delete the previous code, substitute it with the new code and activate automatically.

A.3.1 Updating using FTP

The Teldat devices have an internal FTP server that is capable of distinguishing if the loading file is from BIOS, an application or comes from another source. Therefore, the server operation is completely transparent.

Note

By default, the FTP server is located in port 21; through the configuration, you can change the FTP port server. You must check to make sure you are accessing the correct port. If not, you will not be able to receive a response from the server.

In order to carry out a code transfer (assuming the server port has not been modified):

- Introduce the login and the password.

  - If users have been defined, use the names and passwords for these as login and password. Updating will be executed or not depending on the user access levels.

  - If there are no defined users, use “root” as login.

  - If the password has not been configured, press “intro”.

  - If you have the console password configured, insert the same password in order to access the FTP server.

  - If you have authentication activated with a RADIUS server, insert the corresponding password.

- Pass to binary mode through the “binary” command.
- Carry out the transfer through the “put” command.
- Permanently save the loaded file with “quote site savebuffer” command.
- If you want the device to automatically restart and begin executing the new code, you can send the “quote site reload on” command. On leaving the FTP session, the device will restart after approximately 30 seconds.

```
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 ATLAS2G.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 atlas2g.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: "ATLAS2G.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 using a Windows MSDOS screen

If you need help, you have the standard FTP **"help"** command available. This allows you to obtain a commands list (not all of them are operative in this server). **"help"** <command_name> provides help on the indicated command. For further information, please consult the Teldat Router manual related to FTP, reference "Dm724-I FTP Protocol".

You can, at any point, view the status of the buffer through the **"quote site statbuffer"** command. If you wish to delete it, use the **"quote site clearbuffer"** command.

A.3.2 Updating via XModem

This code updating mode is to be used when you do not have an available IP connection with the device, or in case of emergency.

To carry out updating:

- Set micro-switch '3' in the ON position and switch on the device. By default, the transfer speed is 115200 bps; if you wish to change the speed you must access the device console and set a new speed (you are shown how to do this in the following figure).
- Wait until the *B1* LED is green and the *S* LED is slowly flashing in yellow: the device is waiting to load the code.
- Through a program with a function to send data with the XModem protocol, you carry out loading from an application file; you will notice that the *S* LED is flashing rapidly, indicating the transfer process. If the *S* LED passes to red, the transfer has failed; repeat the process slowing down the speed.
- Once the transfer has successfully completed, you will see that the *B1* LED activates in green and the *S* LED continues flashing in yellow, indicating that the recording process is in progress: if the *S* LED passes to red the recording process has failed; if this passes to green the recording process has finalized satisfactorily.
- Once the code has been successfully loaded, deactivate micro-switch '3' so the device will not pass to the wait mode in order to download the code through the XModem.

Note

By default, the application loaded through the XModem is saved with the name "AT2G.BIN"; you can modify the name, following the instructions that appear on the console when carrying out the download.

Note

Loading through the console can also be carried out by accessing the BIOS menus; in order to access the said menus you must press CTRL-T when a series of dots appear after the ">>" symbols.

```
============================================================
     BIOS TELDAT                          (c)Teldat
============================================================
BIOS CODE VERSION: 01.02
```

```
CLK=294912 KHz   BUSCLK=65536 KHz   L0
Date: 02/01/05, Tuesday         Time: 11:34:16

SDRAM size: 128 Megabytes
   BANK 0: 128 Megabytes (detected)
Caches: ON    Write-Back
FLASH: 8 Mb.
NVRAM: 128 Kb.
EEPROM: 2048 Bytes.
DPRAM: 16384 Bytes.
WAN1: DTE
WAN2: DTE
ISAC
RDSI_B
RDSI_B
FAST ETHERNET 1
FAST ETHERNET 2
PCI device: Host bridge
  (Bus: 0, Device: 0, Function: 0)
Current production date: 04 44
Current software license: 6 56
Current serial number: 472/00144

Current file name: AT2G.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.
```

Example of changing the transfer speed

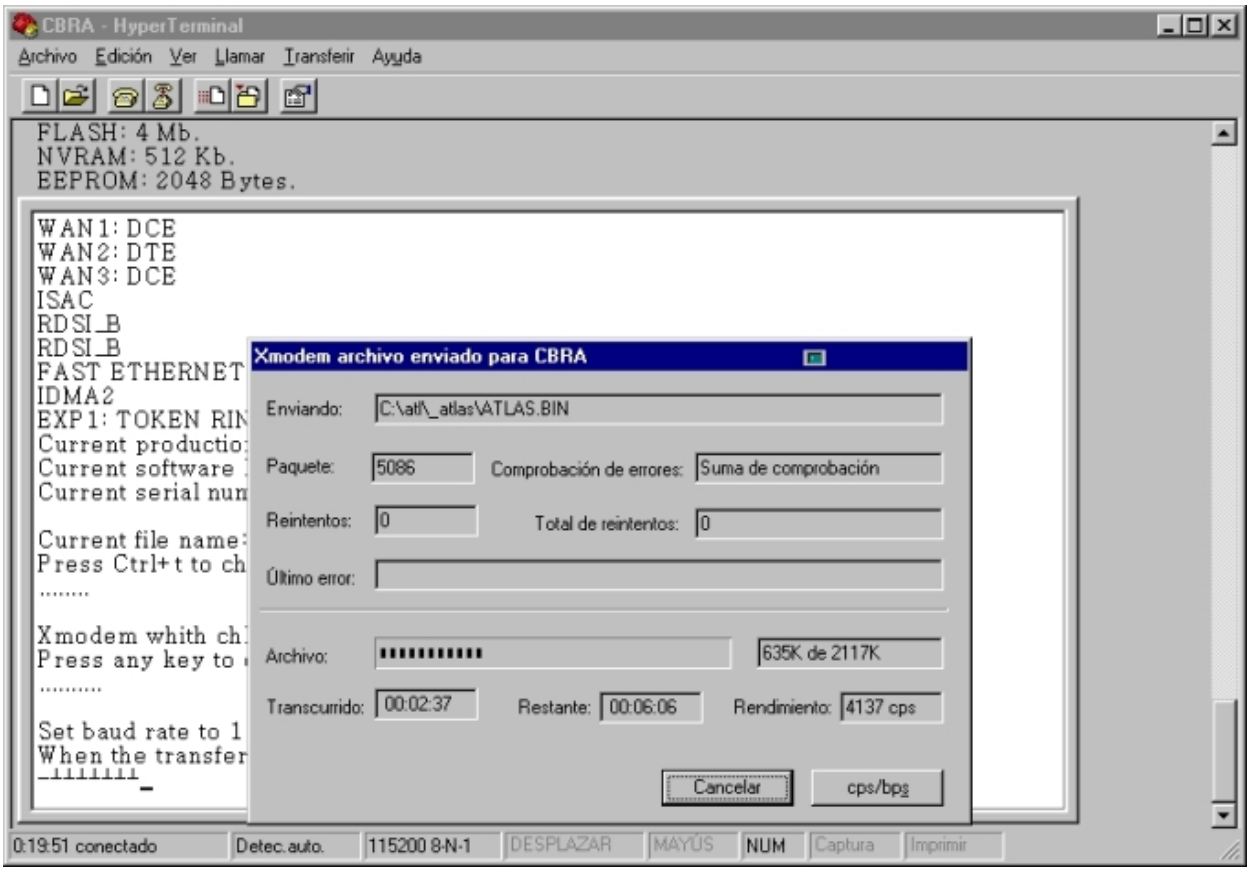
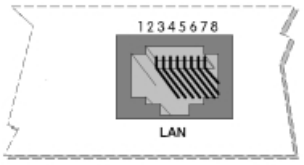


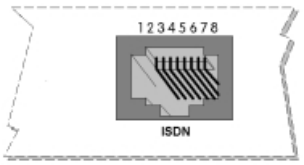
Fig. 16: **Code downloading via XModem through Windows Hyperterminal**

A.4 Connecting the connectors

A.4.1 Twisted pair connections (RJ45)

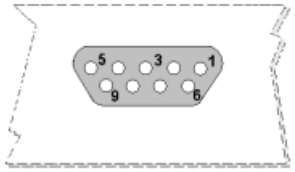
RJ45 LAN	RJ45 PIN	Ethernet
	1	Tx+(input)
	2	Tx-(input)
	3	Rx+(output)
	4	--
	5	--
	6	Rx-(output)
	7	--
	8	--

A.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	--

A.4.3 AUX Port Connections

This is used to locally configure and monitor the device. It allows the connection of an asynchronous terminal at 9.600 bps without parity and with one stop bit (9600 8N1). This is a female DB9 connector that behaves as DCE, permitting 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

A.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.

	STANDARD							
DB25 Connector	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				

A.5 Technical Specifications

Hardware Architecture

PROCESSORS	Freescale PowerQuicc II, at 300 or 400 MHz, depending on the version
MEMORY	64 128 or 256 SDRAM Mbytes, depending on the version
STORAGE UNIT	FLASH Memory, 4, 8 or 16 Mbytes depending on the version EEPROM 2 Kbytes, NVRAM 128 Kbytes

LAN Interfaces

PROTOCOLS	Ethernet (802.3) / Ethernet blue book
Nº PORTS	2
SPEED	10 Mbps (10BaseT)/ 100 Mbps (100BaseT)
CONNECTOR	RJ45 female

WAN Interfaces

PROTOCOLS	FRAME RELAY, X.25, PPP, SDLC, X.28, SCADA
INTERFACES	Insertable Drivers V.24 / V.35 / X.21 DTE/ DCE and RS-485 2-4 Wire
Nº PORTS	2

SPEED	200 to 2048 Kbps
CONNECTOR	DB-25 Female

ISDN Interface

ACCESO	Basic 2B+D
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	1 A

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: 5 °C to 55 °C OFF: -20 °C to 60 °C
RELATIVE HUMIDITY	ON: 8 % to 85 % OFF: 5 % to 90 %

* Available depending on version

A.6 Installing PMC Cards

The **Atlas 250** features and interfaces can be amplified by inserting PMC boards (PCI mezzanine card). The **Atlas 250** will support up to 3 cards simultaneously. In order to correctly insert the card, please follow the steps given below. Should you encounter any problems, please contact your usual supplier.

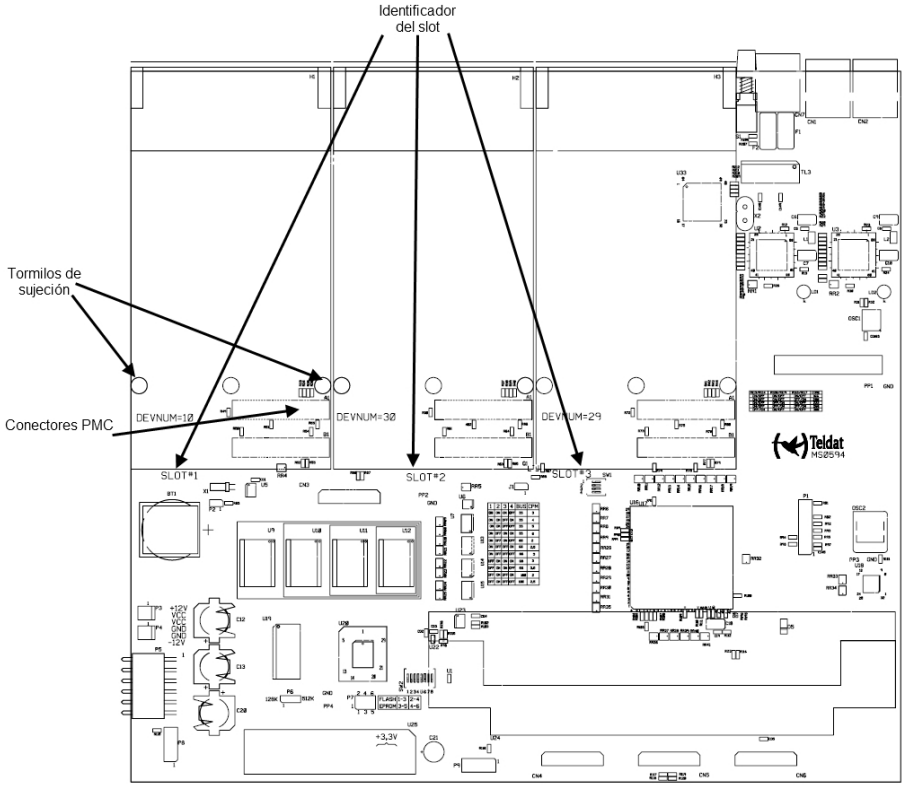
(1) Switch off the device as described in *General installation conditions* on page 3.

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

(3) Open up the device. To do this you need to remove the upper cover which is secured through two screws located on the rear panel of the device. A star screwdriver will be needed for this. Keep the screws in a safe place for subsequent use.

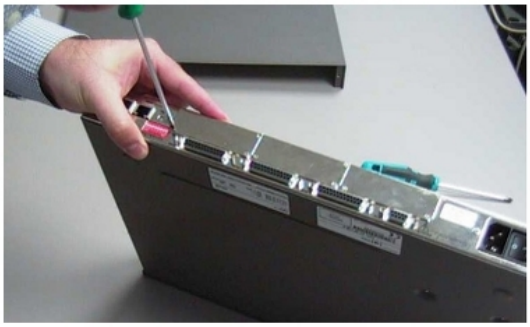
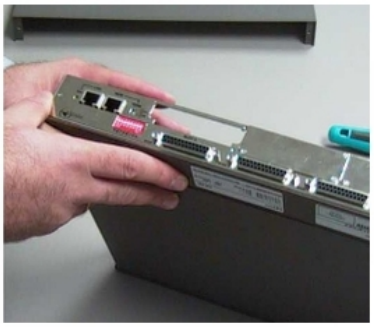
Once the screws have been removed, in order to remove the cover, slide it some 10 mm towards the rear panel and then remove it by lifting, carefully separating it from the sides. Place it in a safe place.

(4) Find the place where the PMC board needs to be located, depending on the availability of the free slots and the mechanical characteristics of the PMC board. The following figure shows the **Atlas 250** baseboard as seen from the device front panel. The various slots are labeled as SLOT1, SLOT2 and SLOT3.

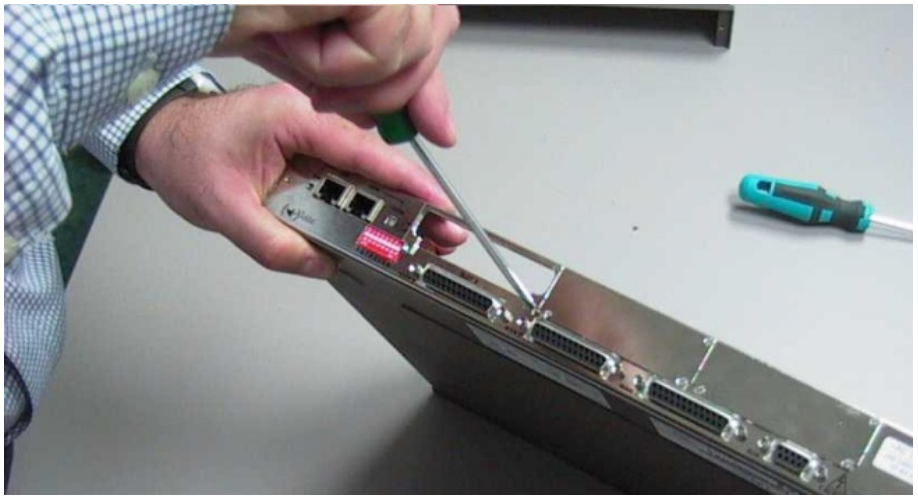


Each slot possesses a set of elevated connectors with gold contacts and a pair of securing screws.

(5) Remove the blind cover from the selected slot. This cover is located on the rear panel and secured through three screws. A flat screwdriver is need for this.

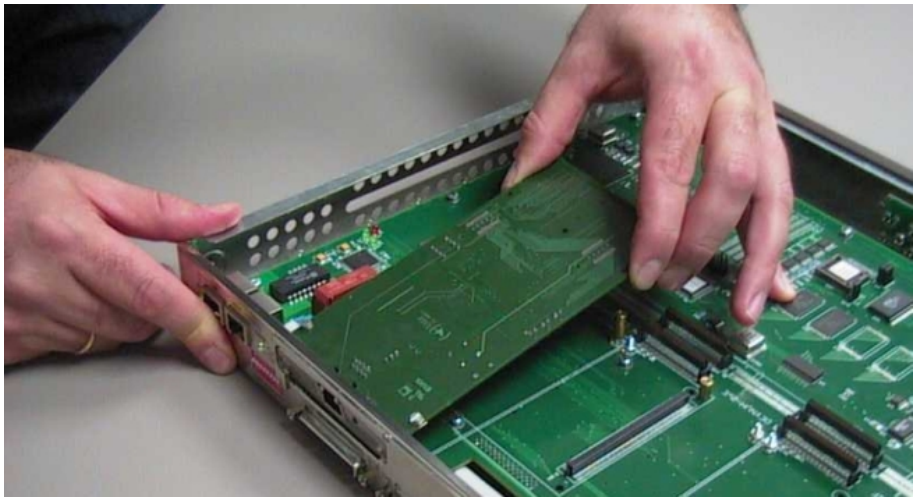



(6) In its place, secure the mold that comes with the board (allowing it to sit better in the device rear panel). Use the screws mentioned in the above point to secure this.



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

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

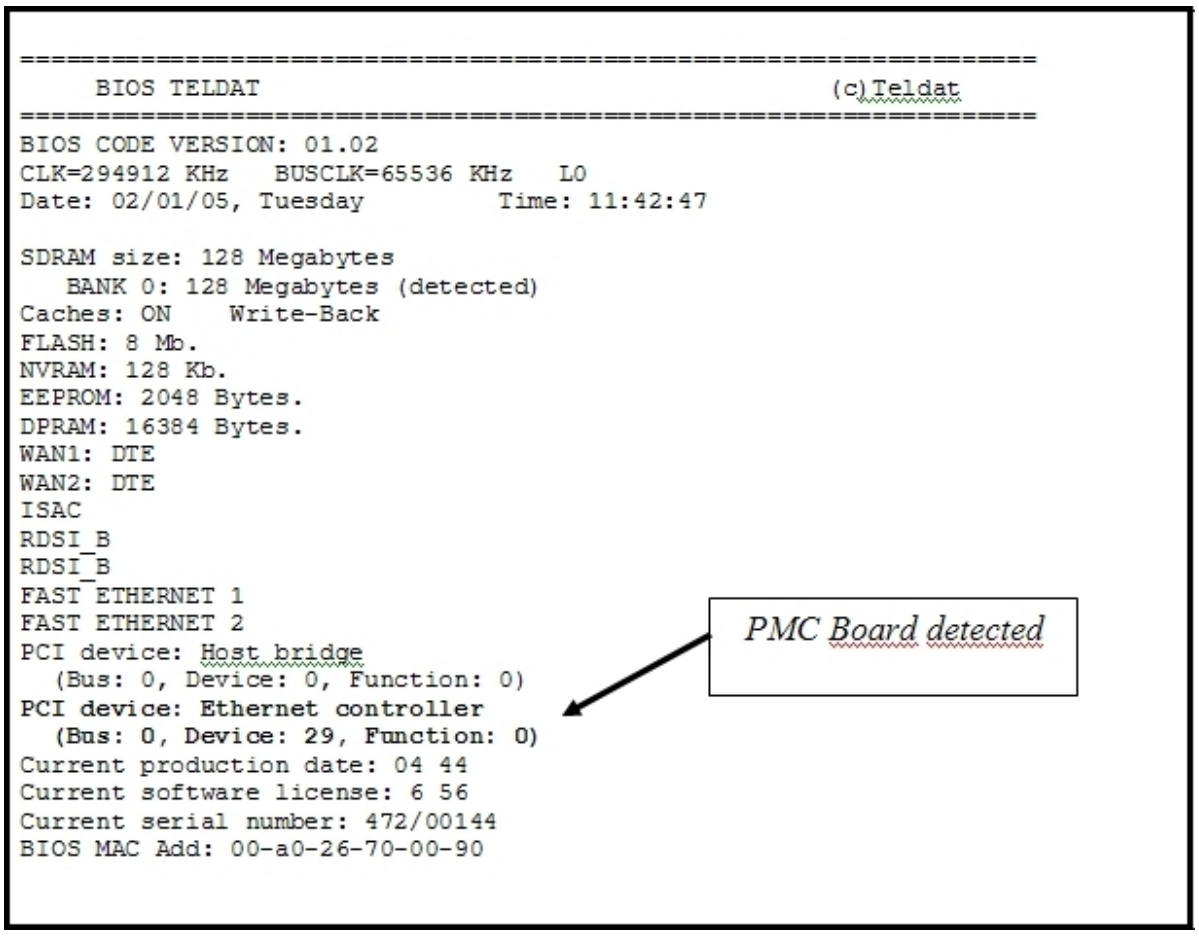


(9) Screw the PMC board to the posts. To do this, use two screws with their corresponding washers. Firmly tighten the screws without damaging the board.

(10) Close the device using the cover taken off in section 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 is sitting properly. Finally, slide the cover along in order to close up the device checking that the sides adjust below the front panel. Secure the cover using the screws from point 3.

(11) Connect and switch on the device as explained in *General installation conditions* on page 3Check that the device starts up as described in *Switching on the device* on page 7. Should you detect any problems, switch off the device and make sure that the above steps have been carried out correctly. If the problem persists, please contact your usual supplier.

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



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

Appendix B Safety information

B.1 Recycling and the Environment

Please do not, under any circumstances, throw away any **Atlas 250** with normal domestic waste. Ask your local town hall for information on how to correctly dispose of them in order to protect the environment against e-waste. Always respect the current laws regarding waste material.

Anyone found violating the environmental laws will be subject to fines and any additional steps established by law.

All the packing materials i.e. the cardboard box, plastic and any other packaging, together with the pieces making up an **Atlas 250**, must be recycled complying with the current active laws regarding recycling materials.

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.

B.2 Translated Safety Warnings

	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.
	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 *General installation conditions* on page 3.
	La tensión eléctrica de los cables de alimentación, de los cables de la línea telefónica y de los cables de comunicación es peligrosa. Para evitar descargas, antes de instalar, mover o abrir las cubiertas de este equipo, conecte y desconecte los cables siguiendo el orden que se detalla en el apartado "Condiciones generales de instalación".