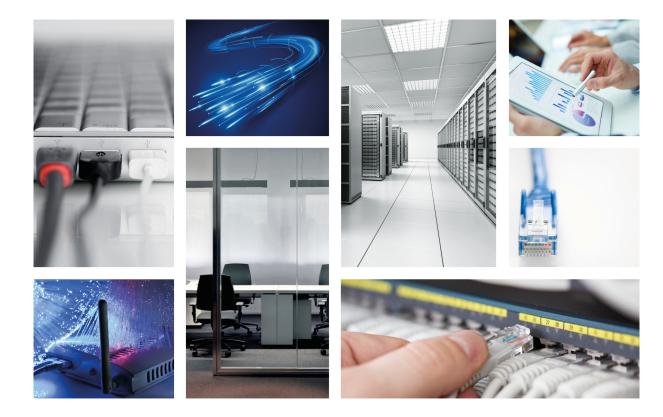
Teldat S.A. Manual





ATLAS 150

Installation Manual

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Manual Teldat S.A.

Legal Notice

Warranty

This publication is subject to change.

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

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Teldat S.A. Important Information

I Important Information



Caution

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

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



Warning

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

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

Chapter 1 Installing the Router

1.1 Introduction

The **ATLAS 150** is a modular device incorporating encryption hardware and designed with network convergence in mind, as it supports IP Telephony and the possibility to encode video.

Teldat proposes the **ATLAS 150** for wireless technology, both for the local network, with wireless access point functionality, as well as for the wide area network as this device supports the following interface cards: GSM, GPRS, EDGE, UMTS, HSDPA, CDMA2000, EV-DO and WiMAX.

The ATLAS 150 executes the Teldat CIT (Teldat Internetworking Code - Código de Internetworking de Teldat), which runs over all the Teldat router families and is characterized by a wide variety of functionalities, especially designed to satisfy the access requirements to corporate data networks. Some of the outstanding features available with CIT are the management capacity, the possibility to implement Quality of Service mechanisms, security mechanisms and the possibility to create Virtual Private Networks, as well as an extensive range of protocols and IP routing functionalities.

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

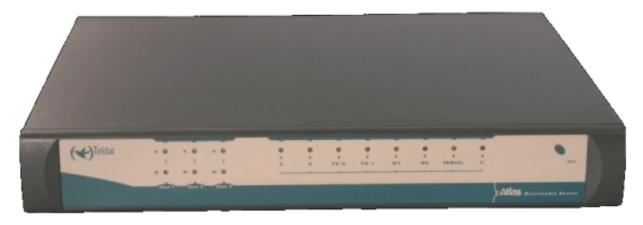


Fig. 1: ATLAS 150 front panel



Fig. 2: ATLAS 150 rear panel

1.2 Connections



Caution

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

Workplace Conditions. Main Characteristics

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



Warning

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

To Connect	To Disconnect
Ensure that the on/off power supply switch is in the OFF position	Place the on/off power supply switch in the OFF position
Check that the power supply is not connected to either the main electricity supply or the device	Disconnect the power supply from the main electricity supply
Connect all data cables	Disconnect the power supply from the device
Connect the power supply to the device	Disconnect the data cables
Connect the power supply to the main electricity supply	
Place the device's on/off power supply switch in the ON position	

1.2.1 Power Source Connection

The ATLAS 150 router is powered with an external AC/DC source.

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



Warning

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

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

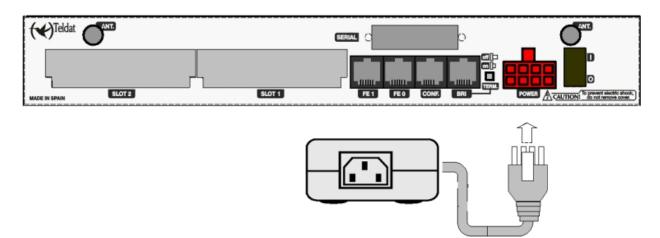


Fig. 3: Power supply connection with external source

To connect the power source to the device, follow the steps listed in the previous table: ensure that the switch is OFF (0) and the power supply is NOT connected to the main electricity supply; find the POWER plug (located on the rear panel of the device) and plug it into the power source: both the connector and the receptacle are designed so it is only possible to insert it in the correct position.

For subsequent connection of the power source to the main electricity supply, use the grounded cable provided for this purpose.

1.2.2 Data Connection

The **ATLAS 150** router has the following connectors available. Some of these connectors may not be available depending on the model:

FE 0, FE 1:

The **ATLAS 150** has two female RJ45 connectors in order to connect to the Ethernet 10 BaseT / 100 BaseT networks through shielded twisted pairs (STP) or unshielded (UTP) cables.

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

The second LAN (FE 1) requires a software license in order to operate.

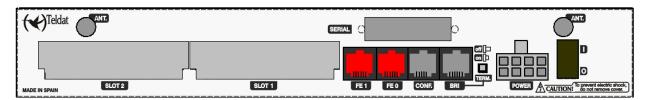


Fig. 4: FE 0 / FE 1 interface

BRI:

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

This requires a software license in order to operate.

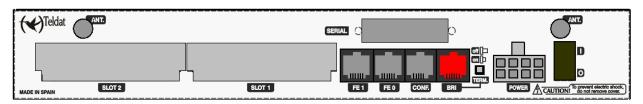


Fig. 5: BRI interface

SERIAL:

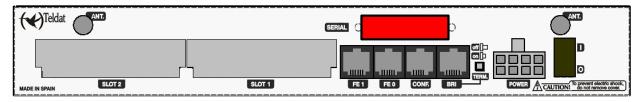


Fig. 6: Serial interface

Serial interface in order to connect to a WAN or an external modem.

ANT.:

RF antenna connectors

So that the Wireless LAN interface is operative, the device must have a plug-in Wireless LAN card and the corresponding software license. Depending on the model, the antennas are installed in the device at the factory. If your device does not have the Wireless LAN module incorporated, you can obtain this later on. The manual provided will indicate how to install the module and its antenna cables in the device.

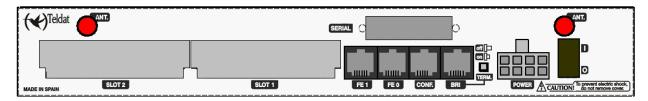


Fig. 7: RF antenna connectors

1.2.2.1 BRI Connection

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

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

Passive-Bus terminal resistances

The **ATLAS 150** router has a pushbutton (labeled as "**TERM**") that allows to connect the BUS-S termination resistances. The placing of these terminal resistances in the correct position is important because, otherwise, it can lead to errors in data (or voice), particularly if the "S" bus line is long. On leaving the factory, the pushbutton is, by default, in the "ON" position.

. The only or last terminal on 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.

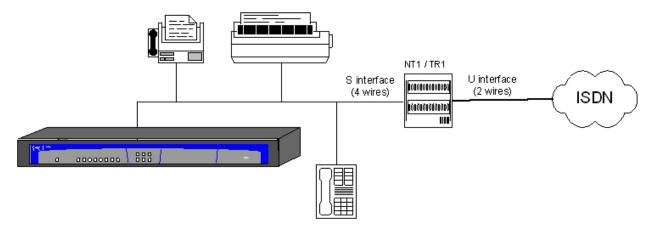


Fig. 8: Location as the only or last terminal

• 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.

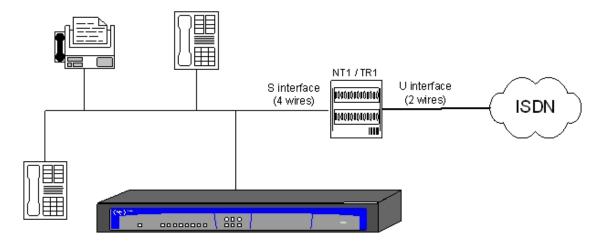


Fig. 9: Location in an intermediate position in the bus

1.2.2.2 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 inside of the device, there is a slot to insert the driver which could be V.24 DTE/DCE, V.35 DTE/DCE and X.21 DTE/DCE. **These drivers are not multi-purpose.** The configuration for the operation mode is carried out by inverting the position of the driver (this appears labeled as "T" indicating that this acts as terminal, and "M" indicating modem functions). The operation mode is that indicated by the label closest to the connector.



Note

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

1.2.2.3 Connecting the antenna

The **ATLAS 150** router has two connectors for an external antenna, used to improve the quality of the signal received and transmitted through the Wireless LAN module. This module is optional; it is possible that your device does not have Wireless LAN and, consequently, no antennas. To assemble and disassemble the antennas, simply screw them into the connectors labeled as ANT located on the rear of the device.

1.2.2.4 Connecting for configuration

The **ATLAS 150** router has a RJ45 female connector on the rear panel referred to as "**CONF**." which provides access to the device's local console. In order to configure this, you must connect the "**CONF**." port to an asynchronous terminal (or to a PC with terminal emulation).



Note

Configuration for the terminal must be:

- Speed: 9600 bps.
- Eight data bits.
- One stop bit.
- No parity bit.

- No type of flow control.

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

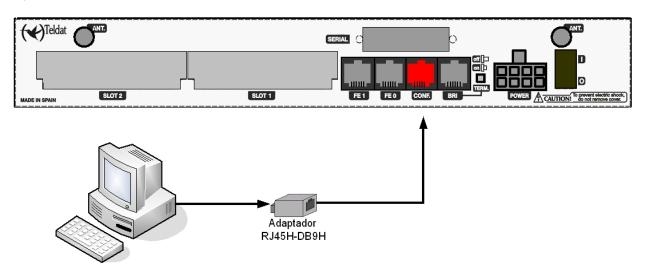


Fig. 10: Connecting for configuration

1.3 Meaning of the LEDs

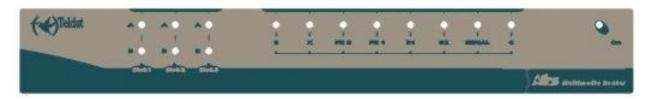


Fig. 11: ATLAS 150 Router Front Panel

ON		Power-on indicator. It lights up when connected to the power.	
		DEVICE OPERATION:	
s		OFF: System	n off. R: Component operating incorrectly.
		YELLOW: The device has a tel	net connection activated and is being remotely accessed. In initialized and operating. The device can be accessed via the local
X		Not used in the current version.	
LAN1	-2	RED: Interface is not available. YELLOW: Interface initialization	ed or is not available. able either because it is not enabled or there is a malfunction in the auto- n in process. Flashing: Maintenance frame being sent.
ISDN B1 - I		procedures. RED: Temporary, in proces Permanent, ERROR. YELLOW: ISDN physical layer is GREEN: Flashing. Call is esta	720172.2001
SERIA	AL	9 /	malfunction.
S L O	A	OFF: Slot is empty. There RED: ERROR: a card has YELLOW: Initialization/configure GREEN: Card initialized and of	been detected in the slot but operating incorrectly.
T .	В	OFF: The card is not executed by the card is not executed	pe of card.
SLO 3 A - E		_	ere you can install a Wireless LAN daughter card. s LAN interfaces to check the meaning of the LEDs' operations.

1.4 Programming the Microswitches

The **ATLAS 150** router has a block of 8 available micro-switches, located on the underside of the device, which are used for maintenance and test tasks. In this case, they are only used to load the default configuration.

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



So the device operates correctly, all the micro-switches must be in the OFF position.

1.4.1 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 move microswitch '5' to the ON position.
- Turn the device on with the ON/OFF switch.

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

```
***********
***************** Router Teldat ***********
BOOT CODE VERSION: 01.06 Jan 2 2006 10:22:22
 gzip Dec 28 2005 09:54:11
P.C.B.: A0 MASK: OC10 Microcode: 00E1
START FROM FLASH
BIOS CODE DUMP.....
BIOS DATA DUMP...
End of BIOS dump
Boot-stack used: 0x00000C38
Boot-stack free: 0x000013C8
   BIOS TELDAT (c) Teldat
______
BIOS CODE VERSION: 01.06
CLK=262144 KHz BUSCLK=65536 KHz PCICLK=65536 KHz LO
Date: 01/12/06, Thursday Time: 12:40:13
SDRAM size: 32 Megabytes
 BANK 0: 32 Megabytes (detected)
Caches: ON
         Write-Back
FLASH: 64 Mb.
NVRAM: 128 Kb.
EEPROM: 2048 Bytes.
DPRAM: 8192 Bytes.
ISAC
RDSI B
RDSI B
SECURITY ENGINE
PCI device: Host bridge
 (Bus: 0, Device: 0, Function: 0)
 (Subs. Vendor: 0x0000, Subs. Device: 0x0000)
```

```
Current production date: 00 00
Current software license: 12 15
Current serial number: 550/05646
BIOS MAC Add: 00-a0-26-a0-16-0e
TRYING APP CODE DUMP
  (CONFIGURED) ATLAS2G.BIN ver.: 0.10.6.12 0.0.0.0 ......
APP DATA DUMP.....
Bios-stack used: 0x1490
Bios-stack free: 0x2B70
Aux-stack used: 0x124
Aux-stack free: 0x1EDC
Running application
Default configuration used
Parsing text mode configuration ...
Configuration parsed
Initializing
Press any key to get started
```

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

1.5 PMC-PCI Cards

The **ATLAS 150** features and interfaces can be amplified by inserting PMC boards (PCI mezzanine card). In order to correctly insert the card, please follow the steps given below.

1.5.1 Procedure to install PMC Cards

- (1) Switch off the device and remove the cables as described in the section on connection found in this manual.
- (2) Remove the device from the workplace and place it in a stable, safe place where it can be easily accessed and handled. Open up the device. To do this you need to remove the upper cover, which is secured through four screws located on the underside of the device.
- (3) Once the screws have been removed, in order to remove the cover, slide it towards the front panel and then remove it by lifting it. Place it in a safe place.
- (4) Find the place where the PMC board needs to be located. This slot has a set of elevated connectors with golden contacts and a pair of securing screws.
- (5) Remove the blind cover from the spot. This cover is located on the rear panel. Push this out.
- (6) Place PMC board securing posts over the securing screws. Secure these firmly.
- (7) Place the PMC card in the slot so that this firstly adjusts to the space on the device rear panel and subsequently to the two PMC connections. This operation must be carefully carried out without forcing any piece or part of the device. Check that the board is clearly settled over the PMC connectors.
- (8) Screw the PMC board to the posts using two screws with their corresponding washers. Firmly tighten the screws without damaging the board.
- (9) Close the device with the cover. To do this, place the device upside down adjusting the three slots on the underside in the device's front panel and subsequently adjust the cover. Secure the cover with the screws.
- (10) Connect and switch on the device as explained in the connection section. Should you detect any problems, switch off the device and make sure that the above steps have been carried out correctly. If the problem persists, please contact your usual supplier.
- (11) Connect a terminal to the console and check that the device detects the PMC board.

```
**************** Router Teldat **********
***********
BOOT CODE VERSION: 01.06 Jan 2 2006 10:22:22
gzip Dec 28 2005 09:54:11
P.C.B.: A0 MASK: OC10 Microcode: 00E1
START FROM FLASH
BIOS CODE DUMP.....
BIOS DATA DUMP...
End of BIOS dump
Boot-stack used: 0x00000C38
Boot-stack free: 0x000013C8
______
   BIOS TELDAT
                             (c) Teldat
______
BIOS CODE VERSION: 01.06
CLK=262144 KHz BUSCLK=65536 KHz PCICLK=65536 KHz LO
Date: 01/12/06, Thursday Time: 12:40:13
SDRAM size: 32 Megabytes
  BANK 0: 32 Megabytes (detected)
Caches: ON Write-Back
FLASH: 64 Mb.
NVRAM: 128 Kb.
EEPROM: 2048 Bytes.
DPRAM: 8192 Bytes.
ISAC
RDSI B
RDSI B
```

```
SECURITY ENGINE

PCI device: Host bridge

(Bus: 0, Device: 0, Function: 0)

(Subs. Vendor: 0x0000, Subs. Device: 0x0000)

Slot 1 - PCI device: CardBus bridge

(Bus: 0, Device: 10, Function: 0)

(Subs. Vendor: 0x0000, Subs. Device: 0x0000)

Current production date: 00 00

Current software license: 12 15

Current serial number: 550/05646

BIOS MAC Add: 00-a0-26-a0-16-0e
```

Appendix A Technical Information

A.1 Troubleshooting

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

Symptom	Solution
None of the LEDs lights up on the device.	Check the power supply to the device (power source, ON/OFF switch, main power outlet).
The S LED does not light up.	Check that all the 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 dis-	Check that the terminal has the correct port configured.
playing garbage.	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 LANx LED never lights up in green.	Check that the rear corresponding LINK LED is ON. Otherwise, check the Ethernet cable and the connection to the network (you may need a crossover cable).
The BRI LED never lights up in either yellow or green.	If your device has an ISDN interface, check that the connection to the bus is correct and that the S bus terminal switch is in the correct position.
The LEDS indicate the FE interfaces are established but there is no connectivity at the data layer.	Check the configuration (routes, IP addresses, etc).

A.2 Updating the Software

The ATLAS 150 router can be updated to new releases. Please ask your distributor for further details on new releases.

There are various ways in which you can update a Teldat router. Please see the manual on updating software for further information.

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

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the files.

A.3 Connectors

A.3.1 LAN Connector (FE x)

RJ45 LAN	RJ45 PIN	LAN
12345678	1	Tx+(input)
	2	Tx-(input)
LAN	3	Rx+(output)
	4	
	5	
	6	Rx-(output)
	7	
	8	

A.3.2 BRI Connector

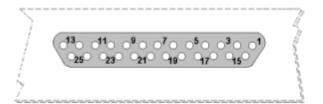
RJ45 ISDN	RJ45 PIN	ISDN
12345678	1	
THE CONTRACTOR OF THE PARTY OF	2	
ISDN	3	Tx+(output)
harmonia and a second	4	Rx+(input)
	5	Rx-(input)
	6	Tx-(output)
	7	
	8	

A.3.3 SERIAL Connector



Note

Cables used for multi-purpose Teldat drivers must not be used in this connector. You must use end-to-end pin-to-pin connector cables.



	STANDARD					
DB25	V.24		V.35		X.:	21
Pin	Signal	UIT	Signal	V.35	Signal	DB15
1	Ground	101	Ground	Α	Ground	1
2	TxD	103	TxD (A)	Р	TxD (A)	2
3	RxD	104	RxD (A)	R	RxD (A)	4
4	RTS	105	RTS	С	CONT(B)	10
5	CTS	106	CTS	D		
6	DSR	107	DSR	Е		
7	GND	102	GND	В	GND	8
8	DCD	109	DCD	F		
9			ExTxC(B)	W		
14			TxD (B)	S	TxD (B)	9
15	TxC	114	TxC (A)	Υ	IND(A)	5
16			RxD (B)	Т	RxD (B)	11
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	Н	CONT(A)	3
24	ExTxC	113	ExTxC(A)	U		

A.3.4 ANT Connectors

PIN	ANT
 Internal	RF in/out
External	GND

A.3.5 Configuration Connectors

RJ45 CONFIGURATION	RJ45 PIN	CONF
12345678	1	
	2	RxD
CONF	3	GND
	4	
	5	
	6	GND
	7	TxD
	8	

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A.4 Technical Specifications

Hardware Architecture

PROCESSORS	Motorola PowerPC MPC8272
MEMORY	128/640 Mbytes in SDRAM
STORAGE UNIT	FLASH Memory (16/64Mbytes).
	EEPROM 2 Kbytes, NVRAM 128 Kbytes.

LAN Interface

PROTOCOLS	Ethernet (802.3)
Nº OF PORTS	1+1*
SPEED	10/100 Mbps (BaseT)
CONNECTOR	RJ45 female
CABLE	STP(Length < 3m)

^{*} Depending on the model

Wireless LAN Interface*

STANDARDS	Consult the manual on Wireless LAN
SPEED	Consult the manual on Wireless LAN
CONNECTOR	2 RF

^{*} Depending on the model

SERIAL Interface*

PROTOCOLS	FRAME RELAY, X.25, PPP, SDLC, X.28, SCADA
INTERFACES	Insertable Driver: V.24 / V.35 / X.21 DTE/ DCE
Nº OF PORTS	1
SPEED	300 to 2048 Kbps
CONNECTOR	DB-25 Female

^{*} Depending on the model

ISDN Interface*

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

^{*} Depending on the model

Configuration Interface

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

Power Supply

INPUT VOLTAGE	+5 V,+12 V,-12 V DC
INPUT CURRENT	5 A (a +5 V DC), 1 A (a +12 V DC) and 0.1 A (a -12 V DC)
MAXIMUM POWER	40 W

External Power Source

INPUT VOLTAGE	100-240 V AC
INPUT CURRENT	1 A
INPUT FREQUENCY	50-60 Hz
MAXIMUM POWER	100 VA

Dimensions and Weight

TYPE	Desktop.
LENGTH x WIDTH x HEIGHT	309 x 270 x 44 mm
WEIGHT	1,5 kg

Environmental Specifications

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

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Safety information Teldat S.A.

Appendix B Safety information

B.1 Recycling and the Environment

Please do not, under any circumstances, throw away any **ATLAS 150** 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 150**, must be recycled complying with the current active laws regarding recycling materials.

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



B.2 Translated Safety Warnings

The equipment is intended to be installed by Service Personnel and only handled by qualified personnel. If not, the device may be damaged and malfunction.
El equipo está diseñado para ser instalado por personal del sevicio técnico y su manejo debe realizarlo personal cualificado. De lo contrario, el equipo puede resultar dañado y quedar inservible.
This device contains elements that are sensitive to electrostatic surges and shocks. Therefore, it is essential when handling the equipment that an antistatic wriststrap is connected to the device chassis and that this is placed on an antistatic mat. Furthermore, it is crucial to avoid any kind of contact between the device components and necklaces, bracelets, rings, ties, etc.
Este equipo contiene componentes sensibles a las sobrecargas y descargas electroestáticas. Por eso, durante la manipulación del equipo, utilice una pulsera antiestática conectada al chasis del equipo y colóquelo sobre una esterilla antiestática. Evite también el contacto de colgantes, pulseras, anillos, corbatas, etc.con cualquier componente del equipo.
The electric current in power cables, telephone lines and communication cables is dangerous. To prevent electric shocks, before installing, handling or opening the equipment covers, connect and disconnect the cables following the steps set forth in <i>Connections</i> on page 2.
La tensión eléctrica de los cables de alimentación, de los cables de la línea telefónica y de los cables de comunicación es peligrosa. Para evitar descargas, antes de instalar, mover o abrir las cubiertas de este equipo, conecte y desconecte los cables siguiendo el orden que se detalla en el apartado "Conexiones".
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.

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