

## Teldat Connect-104 Router

Teldat-Dm 493-I

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## I Important Information



### Note

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

The images showing the front and rear panels of the router are for information purposes only. Some small modification may exist in the actual device.

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 **Teldat Connect-104** is a general purpose router suitable for a wide range of applications (personal, SOHO/SME and corporate environments). Thanks to its USB interface, where 3G USB modems can be connected, it covers access needs using ADSL, ADSL2+ (over PSTN) and 3G access. For LANs (local area networks), the device incorporates a 4-port Ethernet LAN Switch and an integrated Wireless LAN module.

The **Teldat Connect-104** adapts to plenty of IP scenarios, providing simultaneous access to Internet for private LAN users and/or for corporations through Virtual Private Networks (VPNs), as well as accommodating teleprocessing networks. The most common applications are as follows:

- ADSL access router.
- ADSL access router with 3G backup.

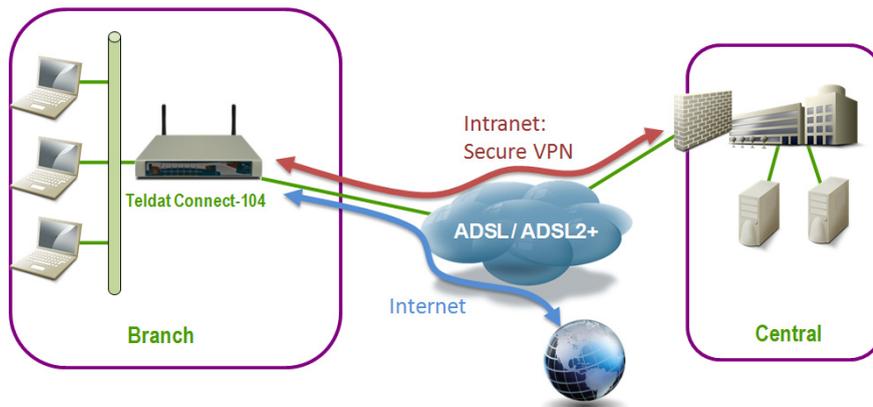


Fig. 1: ADSL access router

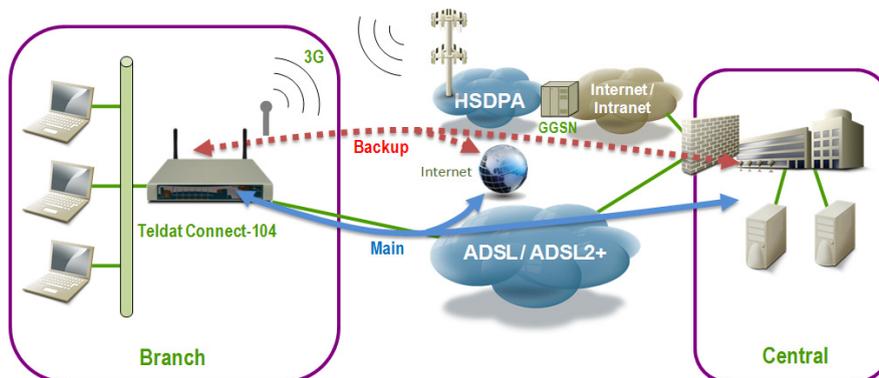


Fig. 2: ADSL access router with 3G backup

This manual shows how to install and connect these routers.



Fig. 3: **Teldat Connect-104** : External aspect

### 1.1.1 Recycling and the Environment

Please do not, under any circumstances, throw away any **Teldat Connect-104** routers with normal domestic waste. Ask your local town hall for information on how to correctly dispose of them in order to protect the environment against e-waste. Always respect the current laws regarding waste material. Anyone found violating the environmental laws will be subject to fines and any additional steps established by law.

All the packing materials, i.e. the cardboard box, plastic and any other packaging, together with the pieces making up a **Teldat Connect-104** , must be recycled complying with the current applicable laws.

The symbol shown below, 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 will be disposed of in an environmentally responsible manner and separately from normal domestic waste.



## 1.2 Connections



### Note

BEFORE CONNECTING THE ROUTER, PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

#### Workplace Conditions. Main Characteristics

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



**Warning**

The electric current in power cables, telephone lines and communication cables is dangerous. To prevent electric shocks, before installing, handling or opening the equipment covers, connect and disconnect the cables following the steps set forth in the following section.

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

### 1.2.1 Power Source Connection

The **Teldat Connect-104** is powered with an external AC/DC source.

To avoid electric shocks, residual current circulation and any other unwanted effects that may disrupt communication, the following is recommended:



**Warning**

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

**Whether the workplace is provided with an uninterruptible 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. 4: Connecting the power with an external source

To connect the power source to the router, follow the steps listed in the previous table: ensure the switch is OFF (0) and the power supply is **NOT connected** to the main electricity supply. Locate the 12 VDC connector, which is on the rear panel of the router, and plug it into the power source.

## 1.2.2 Data Connections

The **Teldat Connect-104** is equipped with the following connectors:

### 1.2.2.1 4 port Ethernet Switch (connectors LAN1..4)

The **Teldat Connect-104** is equipped with a 410/100BaseT switch, with an automatic MDI/MDIX to connect to the LAN (local area network).

Please pay close attention to the labelling to avoid confusing the switch with other port types.



Fig. 5: LAN switch ports (4)

### 1.2.2.2 ADSL/ADSL2+ connection over PSTN (DSL connector)

The **Teldat Connect-104** incorporates a DSL connector to connect to an ADSL/ASDL2+ network over PSTN. This is a female RJ11 connector with 4 wires. Only the **central pair is used** for data transmission/reception.

For connection purposes, use the telephone cable with male RJ11 connectors (provided with the router).



Fig. 6: DSL connector (ADSL and ADSL2+)

#### The splitter

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

A typical installation with a splitter is shown in Figure 7 .

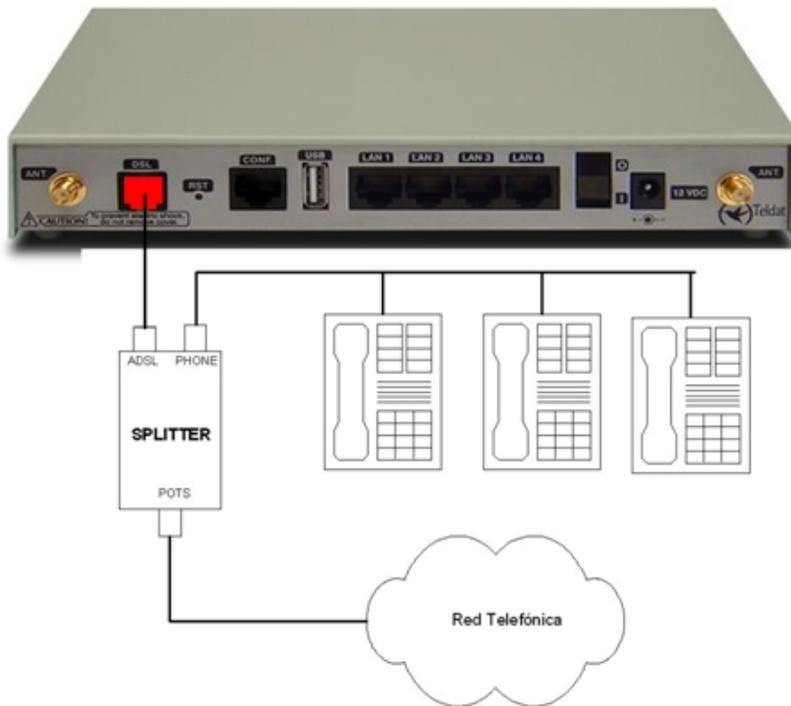


Fig. 7: ADSL installation with a splitter

### The microfilters

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

A typical installation with a splitter is shown in Figure 8.

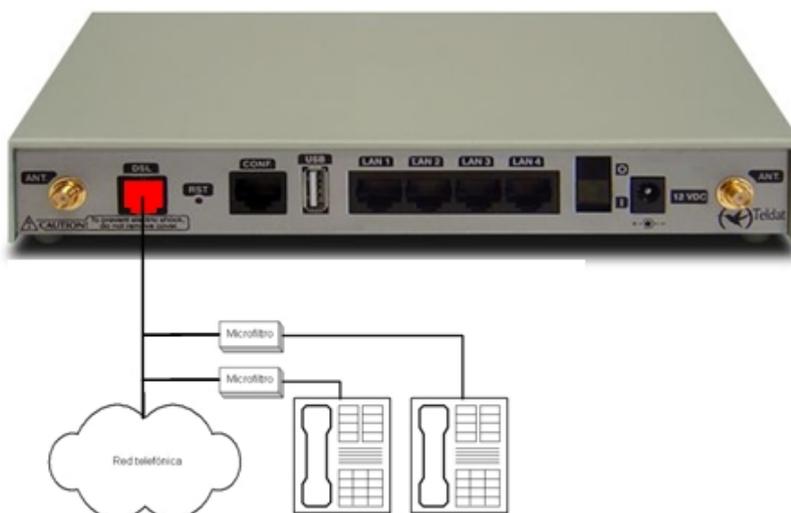


Fig. 8: ADSL installation with microfilter

### 1.2.2.3 Wireless LAN connection (ANT connectors)

The **Teldat Connect-104** has two RF antenna connectors to connect an external antenna. This improves the quality of the signal received and transmitted by the internal Wireless LAN module. To assemble and disassemble the antennas provided, simply screw/unscrew them into/from the connectors labeled ANT (located at the rear of the device).



Fig. 9: Wireless LAN antenna connectors

### 1.2.2.4 Connecting a 3G USB device (USB connector)

The **Teldat Connect-104** has a USB HOST 2.0 Type A connector interface, allowing 3G USB modems to be connected. This interface can be activated through the purchase of the appropriate software license.



Fig. 10: USB Connector

## 1.2.3 Configuring Connections

### 1.2.3.1 Configuring using a local console (CONF connector)

The **Teldat Connect-104** has a female RJ45 connector on the rear panel labeled Conf. This provides access to the router's local console. Configuration entails connecting the Conf. port to an asynchronous terminal (or to a PC with terminal emulation).



Fig. 11: Configuration connector

The terminal configuration is as follows:

- Speed: 9600 bps
- Eight data bits
- One stop bit
- No bit parity
- No type of flow control

To connect to the configuration port, use the RJ45 cables supplied with the router, together with the female RJ45-female DB9 adapter.



#### Note

The female RJ45-female DB9 adapter is not provided and must be acquired separately.

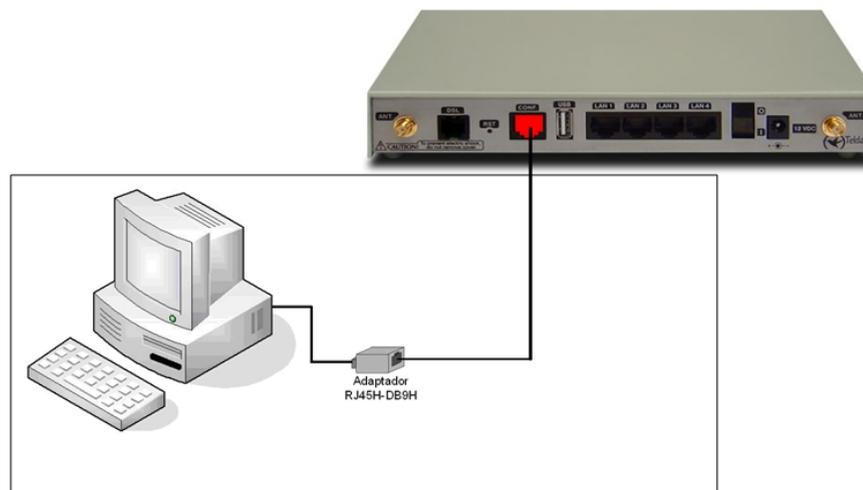


Fig. 12: Configuration Connection

### 1.2.3.2 Configuring using an IP terminal (connectors LAN1..4)

The **Teldat Connect-104** includes a default configuration that activates if the router has not been previous configured, or, if the **Procedure to establish the default configuration** has been executed (this is explained further on).

The router's default configuration establishes the following IP address and the access mask:

- IP address: 192.168.1.1
- IP mask: 255.255.255.0



### Note

Some devices leave the factory with customized settings. This personalization can mean that the default configuration is different from the one shown above.

This initial configuration allows you access the router configuration console through the Telnet IP protocol. To do this, follow these steps:

- Configure the IP terminal Ethernet interface (normally a PC) with IP address in the range of [192.168.1.2, 192.168.1.254] and mask 255.255.255.0. E.g. 192.168.1.2, 255.255.255.0.
- Connect the IP terminal Ethernet interface to any of the **Teldat Connect-104** Ethernet switch ports (LAN 1..4 connectors) through the Ethernet cable (RJ45), supplied with the router.
- Start a Telnet session from the IP terminal to IP address 192.168.1.1 ( **Teldat Connect-104** default address).
- The default configuration does not ask for login credentials (user/password) to access the console.

For further information on how to fully configure the router, please see the manuals on the CD supplied with the **Teldat Connect-104** .

## 1.3 Meaning of the LEDs

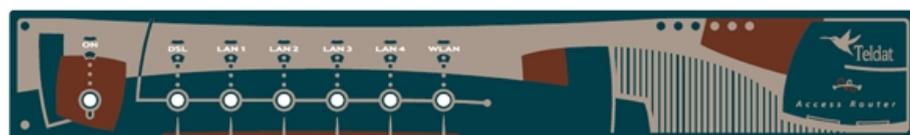


Fig. 13: Front panel

<b>ON</b>	Power-on indicator. It lights up when connected to the power.
<b>LAN1..4</b>	<p><b>LAN Ethernet Switch:</b></p> <p><b>OFF:</b> The link hasn't established in this port.</p> <p><b>GREEN:</b> A link has established in this port.</p> <p>Intermittent traffic in the port.</p>
<b>DSL</b>	<p><b>DSL Interface:</b></p> <p><b>SLOW BLINKING:</b> The link hasn't established.</p> <p><b>FAST BLINKING:</b> The link is being established.</p> <p><b>GREEN:</b> The link has established.</p>
<b>WLAN</b>	<p><b>WLAN Interface:</b></p> <p><b>OFF:</b> No data in the interface.</p> <p><b>GREEN:</b> Intermittent traffic in the interface.</p>

## 1.4 RST Pushbutton

The **Teldat Connect-104 RST** button allows you to ignore the current configuration and establish the default configuration.

The RST pushbutton is located on the rear of the **Teldat Connect-104** . It is protected in such a way that it's only accessible from the outside of the router, and can only be activated using a sharp-pointed object.



Fig. 14: RST Pushbutton

This pushbutton should not be handled by the user unless it is necessary to re-establish the default configuration. This forces startup in either BOOT mode (updating from BOOT), or in BIOS mode (to re-license and delete the configuration files).

### 1.4.1 Procedure to ignore the current configuration and to establish the default configuration

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

- Turn off the device by means of the ON/OFF switch.
- Using a sharp object, press the RST pushbutton and hold it down.
- Turn the device on with the ON/OFF switch.
- Wait until the WLAN LED begins to blink (see Figure 15) and release the RST pushbutton.
- Once the pushbutton has been released, the WLAN LED turns off and the process to boot the router with the default configuration begins.



Fig. 15: Once the WLAN LED is blinking you can release the pushbutton



#### Note

When the RST pushbutton is released, a message similar to the one shown below will appear on the configuration console.

```
CFE version XXXX
Build Date: XXXX

Parallel flash device: name AM29LV320MT, id 0x2201, size 16384KB
CPU type 0x2A010: 300MHz, Bus: 133MHz, Ref: 64MHz
CPU running TP0
Total memory: 67108864 bytes (64MB)
Boot Address 0xbe000000

*** default configuration required ***

Board IP address       : 172.24.251.14:ffff0000
Host IP address        : 172.24.75.193
Gateway IP address     :
Run from flash/host (f/h) : f
Default host run file name :
```

```

Default host flash file name      :
Boot delay (0-9 seconds)         : 3
Boot image (0=latest, 1=previous) : 1
Board Id (0-0)                   : 96358C1PL
Number of MAC Addresses (1-32)   : 4
Base MAC Address                  : 22:22:22:22:22:22
PSI Size (1-64) KBytes           : 24
Main Thread Number [0|1]         : 0

*** Press any key to stop auto run (3 seconds) ***
Auto run second count down: 0
Booting from only image (0xbe8a0000) ...
Code Address: 0x80010000, Entry Address: 0x80330000
Booting version 10.08.00-00.00
Decompression OK!
Entry at 0x80330000
Closing network.
Closing DMA Channels.
Starting program at 0x80330000
CIT release: XXXXX

Current software license: XX XX
S/N: XXX/XXXXX
.....
Default configuration used
Parsing text mode configuration ...
Configuration parsed
Initializing

Press any key to get started

```

This process does not delete the configuration that was previously stored; it simply re-establishes the default configuration.

## 1.4.2 Procedure to force startup in BOOT mode

Carry out this process if you need to force the router to startup in BOOT mode to load/upgrade the C.I.T. image from BOOT. For further information, please see the manual on software updating (*Dm748-I Software Updating*).

Follow these steps:

- Turn off the device by means of the ON/OFF switch.
- Using a sharp object, press the RST pushbutton and hold it down.
- Turn the device on with the ON/OFF switch.
- Wait until the WLAN LED begins to blink (see Figure 16). Keep the RST pushbutton held down.



Fig. 16: The WLAN LED blinks

- After about 15 seconds, the WLAN LED goes out and the DSL LED lights up (see Figure 17). Keep the pushbutton held down.

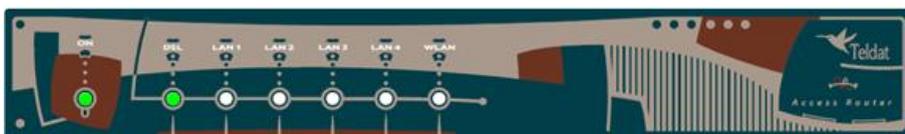


Fig. 17: The WLAN LED goes out and the DSL lights up

- After about 3 seconds, the WLAN LED lights up. This time it's steady i.e. not blinking (see Figure 18) and the DSL goes out. Release the reset button at this point.

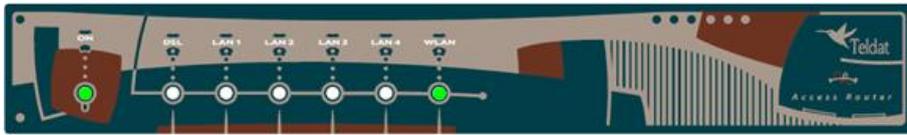


Fig. 18: The WLAN LED lights up without blinking and the DSL goes out.

- Wait for a few seconds until the router completes startup. If you have a local console connected to the **CONF.** port, you can see that the router has initiated using the default parameters from the BOOT configuration, and paused startup in the BOOT menu (CFE> prompt):

```
CFE version 1.0.37-102.9-01 for BCM96358 (32bit,SP,BE)
Build Date: Fri Dec  4 12:10:54 CET 2009 (jsirodey@orion)
Copyright (C) 2000-2008 Broadcom Corporation.

Parallel flash device: name AM29LV320MT, id 0x2201, size 16384KB
CPU type 0x2A010: 300MHz, Bus: 133MHz, Ref: 64MHz
CPU running TP0
Total memory: 67108864 bytes (64MB)
Boot Address 0xbe000000

*** Break into CFE console ***

Use default boot line parameters: e=192.168.1.1:ffffff00 h=192.168.1.100 g= r=f f= i= d=3 p=0
DHCP running
Board IP address      : 192.168.1.1:ffffff00
Host IP address      : 192.168.1.100
Gateway IP address   :
Run from flash/host (f/h) : f
Default host run file name :
Default host flash file name :
Boot delay (0-9 seconds) : 3
Boot image (0=latest, 1=previous) : 0
Board Id (0-0)       : 96358C1PL
Number of MAC Addresses (1-32) : 4
Base MAC Address     : 00:a0:26:6e:00:58
PSI Size (1-64) KBytes : 24
Main Thread Number [0|1] : 0

DHCP running
web info: Waiting for connection on socket 0.
```

- The router is now in BOOT mode with the default IP configuration from BOOT (IP address 192.168.1.1 and mask 255.255.255.0).

#### Accessing the BOOT menu from the console without using the RST button

You can also access the BOOT menu without using the RST button, provided you can access the router local console. Simply press any key on the console during the startup process, when the following text appears: “\*\*\* Press any key to stop auto run (x seconds) \*\*\*” and before the indicated seconds run out. The C.I.T. startup will cancel and the router pauses at the BOOT prompt: **CFE>**. From this menu, you can access all the BOOT menu commands. This is an example of a **Teldat Connect-104** startup:

```
CFE version 1.0.37-102.9-01 for BCM96358 (32bit,SP,BE)
Build Date: Thu Dec  3 11:02:34 CET 2009 (jsirodey@orion)
Copyright (C) 2000-2008 Broadcom Corporation.
Parallel flash device: name AM29LV320MT, id 0x2201, size 16384KB
CPU type 0x2A010: 300MHz, Bus: 133MHz, Ref: 64MHz
CPU running TP0
Total memory: 67108864 bytes (64MB)
Boot Address 0xbe000000
Board IP address      : 192.168.1.1:ffffff00
Host IP address      : 192.168.1.100
Gateway IP address   :
Run from flash/host (f/h) : f
Default host run file name :
Default host flash file name :
Boot delay (0-9 seconds) : 3
```

```

Boot image (0=latest, 1=previous) : 0
Board Id (0-0)                   : 96358C1PL
Number of MAC Addresses (1-32)   : 4
Base MAC Address                  : 00:a0:26:6e:00:58
PSI Size (1-64) KBytes           : 24
Main Thread Number [0|1]         : 0

DHCP running
*** Press any key to stop auto run (3 seconds) ***
Auto run second count down: 3
web info: Waiting for connection on socket 0.
CFE>

```

### 1.4.3 Procedure to force startup in BIOS mode

Please follow these steps if you want to force router startup in BIOS mode and access the BIOS menu. From there, you can relicense, delete the configuration files and access the rest of the commands.

- Turn off the router by means of the ON/OFF switch.
- Using a sharp object, press the RST pushbutton and hold it down.
- Turn the device on with the ON/OFF switch.
- Wait until the WLAN LED begins to blink (see Figure 19). Keep the RST pushbutton held down.

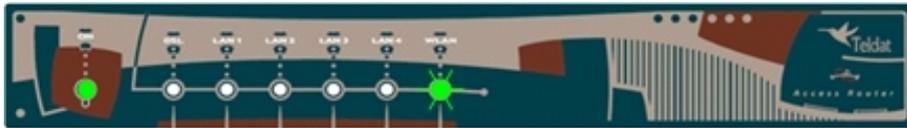


Fig. 19: The WLAN LED blinking.

- After about 15 seconds, the WLAN LED goes out and the DSL LED lights up (see Figure 20). At this point, release the reset button.

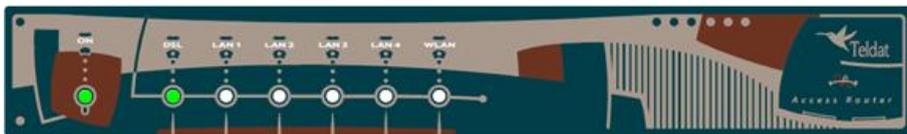


Fig. 20: WLAN LED goes out and the DSL lights up

- Wait for a few seconds until the router completes startup. If you have a local console connected to the CONF. port, you can see the router has paused startup in the BIOS menu (>> prompt):

```

•CFE version 1.0.37-102.9-01 for BCM96358 (32bit,SP,BE)
•Build Date: Fri Dec 4 12:10:54 CET 2009 (jsirodey@orion)
•Copyright (C) 2000-2008 Broadcom Corporation.
•Parallel flash device: name AM29LV320MT, id 0x2201, size 16384KB
•CPU type 0x2A010: 300MHz, Bus: 133MHz, Ref: 64MHz
•CPU running TP0
Total memory: 67108864 bytes (64MB)
Boot Address 0xbe000000

*** Break into BIOS menu ***

Board IP address      : 192.168.1.1:ffffff00
Host IP address      : 192.168.1.100
Gateway IP address   :
Run from flash/host (f/h) : f
Default host run file name :
Default host flash file name :
Boot delay (0-9 seconds) : 3
Boot image (0=latest, 1=previous) : 0
Board Id (0-0)       : 96358C1PL
Number of MAC Addresses (1-32) : 4
Base MAC Address     : 00:a0:26:6e:00:58
PSI Size (1-64) KBytes : 24

```

```

Main Thread Number [0|1]          : 0

DHCP running
*** Press any key to stop auto run (3 seconds) ***
Auto run second count down: 0
Booting from latest image (0xbe160000) ...
Code Address: 0x80010000, Entry Address: 0x80330000
Booting version 10.08.01
Decompression OK!
Entry at 0x80330000
Closing network.
Closing DMA Channels.
Starting program at 0x80330000

CIT software version: XXXXX
Current software license: XX XX
S/N: XXX/XXXXX

    === INITIAL MENU ===
a) Set Date and Time
c) Change Code to Run
d) Change Licence
f) Disk menu
l) Load from lan
r) Reset
v) Change version control for loading
w) Reset and break into boot
0) Exit
>>

```

- The router is now in BIOS mode with the IP configuration established in BOOT (default: IP address 192.168.1.1 and mask 255.255.255.0).
- You can execute Telnet to access the BIOS menu. Once executed, you are in the BIOS menu:

```

•CIT software version: XXXXX
•Current software license: XX XX
•S/N: XXX/XXXXX
•
•
•    === INITIAL MENU ===
•
•  a) Set Date and Time
•  c) Change Code to Run
•  d) Change Licence
•  f) Disk menu
•  l) Load from lan
•  r) Reset
•  v) Change version control for loading
•  w) Reset and break into boot
•  0) Exit
•  >>

```

#### 1.4.4 Accessing the BIOS menu from the console without using the RST button

You can also access the BIOS menu without using the RST button, provided you can access the router's local console. Simply access the BOOT menu and, from there, enter the **rb** command. This is an example of a **Teldat Connect-104** in BIOS mode startup:

```

CFE> rb
Booting from latest image (0xbe160000) ...
Code Address: 0x80010000, Entry Address: 0x80330000
Booting version 10.08.01
Decompression OK!
Entry at 0x80330000
Closing network.
Closing DMA Channels.

```

```
Starting program at 0x80330000
```

```
CIT software version: XXXXX
```

```
Current software license: XX XX
```

```
S/N: XXX/XXXXX
```

```
=== INITIAL MENU ===
```

- a) Set Date and Time
  - c) Change Code to Run
  - d) Change Licence
  - f) Disk menu
  - l) Load from lan
  - r) Reset
  - v) Change version control for loading
  - w) Reset and break into boot
  - 0) Exit
- ```
>>
```

## Chapter 2 Appendix

### 2.1 Troubleshooting

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

| Problem                                                         | Solution                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| None of the LEDs light up on the router.                        | Check the power supply to the router (power source, ON/OFF switch, main power outlet).                                                                                                                                                                                                         |
| The local console doesn't respond.                              | Check that the console cable is the correct one and that it is connected to the device and to the asynchronous terminal.<br><br>Check the terminal has the correct port configured.<br><br>Check that the terminal configuration is 9600 8N1. Check that the console is not processing events. |
| The local console only displays odd characters.                 | Check the terminal has the correct port configured.<br><br>Check that the terminal configuration is 9600 8N1.                                                                                                                                                                                  |
| You have forgotten the router password.                         | Ignore the configuration by means of the RST pushbutton, as explained in the relevant section.                                                                                                                                                                                                 |
| The LAN LED never lights up in green.                           | Check the Ethernet cable and the connection to the network (you may need a crossover cable).                                                                                                                                                                                                   |
| The DSL LED never lights up in green.                           | If the router has an xDSL interface available, check the connection to the network, or to the splitter, and make sure that the telephone line you are connected to supports xDSL service.                                                                                                      |
| The WLAN LED never lights up in green.                          | Check both your router configuration and that for the remote station(s).                                                                                                                                                                                                                       |
| The date and time configured in the router are lost on restart. | If these parameters were configured through the <i>time set</i> command, they will be lost when the router is restarted. To keep the date and time configuration, use NTP.                                                                                                                     |

### 2.2 Software Updating

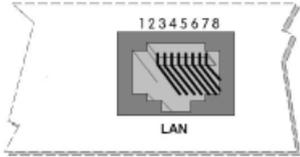
The **Teldat Connect-104** can be updated to newer versions. Please contact your dealer for further details on new versions.

There are several ways to update a Teldat router. For further information, please see the software updating manual.

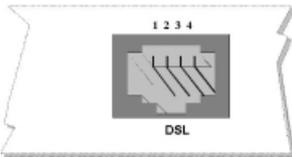
The software required to update Teldat routers is supplied in a format known as **distribution**. This consists of a single file that contains all the files needed to update your device, as well as detailed information on the content.

### 2.3 Connectors

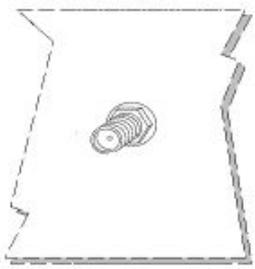
### 2.3.1 LAN Connector

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

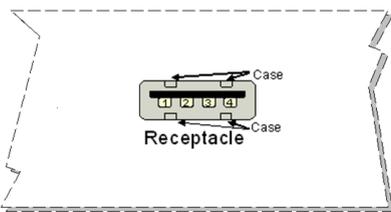
### 2.3.2 DSL Connector

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

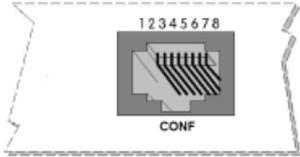
### 2.3.3 ANT Connectors

|                                                                                     | PIN             | ANT       |
|-------------------------------------------------------------------------------------|-----------------|-----------|
|  | <b>Internal</b> | RF in/out |
|                                                                                     | <b>External</b> | GND       |

### 2.3.4 USB Connector

| USB Type A                                                                          | PIN          | USB    |
|-------------------------------------------------------------------------------------|--------------|--------|
|  | 1            | VCC    |
|                                                                                     | 2            | DATA-  |
|                                                                                     | 3            | DATA+  |
|                                                                                     | 4            | GND    |
|                                                                                     | <b>Shell</b> | Shield |

### 2.3.5 Configuration Connector

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

## 2.4 Technical Specifications

### Hardware Architecture

|              |                           |
|--------------|---------------------------|
| PROCESSORS   | Broadcom BCM6358.         |
| MEMORY       | 64 Mbytes in SDRAM.       |
| STORAGE UNIT | FLASH Memory (16 Mbytes). |

### LAN Interface

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

### DSL Interface

|           |                               |
|-----------|-------------------------------|
| STANDARDS | Please see the manual on DSL. |
| SPEED     | Please see the manual on DSL. |
| CONNECTOR | RJ11 female.                  |

### Wireless LAN Interface

|           |                                        |
|-----------|----------------------------------------|
| STANDARDS | Please see the manual on Wireless LAN. |
| SPEED     | Please see the manual on Wireless LAN. |
| CONNECTOR | 2 RF SMA female.                       |

### USB Interface

|               |                                                                                                                                     |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------|
| 3G USB MODEMS | Please consult the Teldat webpage <a href="http://www.teldat.com">www.teldat.com</a> to obtain the list of supported 3G USB modems. |
| SPEED         | The interface complies with the USB 2.0 standard (480 Mbps); the final speed depends on the 3G USB modem used.                      |

|           |             |
|-----------|-------------|
| CONNECTOR | USB Type A. |
|-----------|-------------|

#### Configuration Interface

|                |                                             |
|----------------|---------------------------------------------|
| LOCAL TERMINAL | V.24 9.600-8-N-1- without flow control.     |
| CONNECTOR      | RJ45 female on the rear part of the router. |

#### Power Supply

|               |          |
|---------------|----------|
| INPUT VOLTAGE | +12V DC. |
| INPUT CURRENT | 1200 mA. |
| JACK          | 5.5 mm.  |
| INTERNAL PIN  | 2.5 mm.  |

#### External power supply

|                 |              |
|-----------------|--------------|
| INPUT VOLTAGE   | 100-240V AC. |
| INPUT CURRENT   | 600 mA.      |
| INPUT FREQUENCY | 50-60 Hz.    |

#### Dimensions and weight

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

#### Environmental Specifications

|                     |                                                            |
|---------------------|------------------------------------------------------------|
| AMBIENT TEMPERATURE | OPERATING NORMALLY: 0°C to 45°C.<br>STORED: -30°C to 85°C. |
| RELATIVE HUMDITY    | On: 5% to 90%.                                             |

## 2.5 Compliance Information

### 2.5.1 Compliance Information for Teldat CONNECT-104 Routers Relevant to the European Union and Other Countries Following EU Directive 1999/5/EC (R&TTE Directive)

This section contains compliance information for **Teldat Connect-104** . This information is relevant to the European Union and other countries that are following EU Directive 1999/5/EC. You will find the following information in this section:

- Declaration of Conformity with Regard to the EU Directive 1999/5/EC (R&TTE Directive)
- Countries where the equipment is intended to be used
- CE Marking

Standards

National Restrictions

- Product Usage Restrictions

#### 2.4 Restrictions

- Third-Party Software or Firmware
- Technical Documents on [www.teldat.com](http://www.teldat.com)

### 2.5.1.1 Declaration of Conformity with Regard to EU Directive 1999/5/EC (R&TTE Directive)

|                           |                                                                                                                            |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Български<br>[Bulgarian]: | Това оборудване отговаря на съществените изисквания и приложими клаузи на Директива 1999/5/EC.                             |
| Česky<br>[Czech]:         | Toto zařízení je v souladu se základními požadavky a ostatními odpovídajícími ustanoveními Směrnice 1999/5/EC.             |
| Dansk<br>[Danish]:        | Dette udstyr er i overensstemmelse med de væsentlige krav og andre relevante bestemmelser i Direktiv 1999/5/EF.            |
| Deutsch<br>[German]:      | Dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprechenden Vorgaben der Richtlinie 1999/5/EU. |
| Eesti<br>[Estonian]:      | See seade vastab direktiivi 1999/5/EU olulistele nõuetele ja teistele asjakohastele sätetele.                              |
| English:                  | This equipment is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.      |
| Espanol<br>[Spanish]:     | Este equipo cumple con los requisitos esenciales así como con otras disposiciones de la Directiva 1999/5/CE.               |
| Ελληνική<br>[Greek]:      | Αυτός ο εξοπλισμός είναι σε συμμόρφωση με τις ουσιαστικές απαιτήσεις και άλλες σχετικές διατάξεις της Οδηγίας 1999/5/EC.   |
| Français<br>[French]:     | Cet appareil est conforme aux exigences essentielles et aux autres dispositions pertinentes de la Directive 1999/5/EC.     |
| Íslenska<br>[Icelandic]:  | Tetta taki er samkvamt grunnkrofum og öðrum viðeigandi ákvæðum Tilskipunar 1999/5/EC.                                      |
| Italiano<br>[Italian]:    | Questo apparato è conforme ai requisiti essenziali ed agli altri principi sanciti dalla Direttiva 1999/5/CE.               |
| Latviski<br>[Latvian]:    | Šī iekārta atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.                      |
| Lietuvių<br>[Lithuanian]: | Šis įrenginys tenkina 1999/5/EB Direktyvos esminius reikalavimus ir kitas šios direktyvos nuostatas.                       |
| Nederlands<br>[Dutch]:    | Dit apparaat voldoet aan de essentiële eisen en andere van toepassing zijnde bepalingen van de Richtlijn 1999/5/EC.        |
| Malti<br>[Maltese]:       | Dan l-apparat huwa konformi mal-ħtiġiet essenzjali u l-provedimenti l-oħra rilevanti tad-Direttiva 1999/5/EC.              |
| Magyar<br>[Hungarian]:    | Ez a készülék teljesíti az alapvető követelményeket és más 1999/5/EK irányelvben meghatározott vonatkozó rendelkezéseket.  |
| Norsk<br>[Norwegian]:     | Dette utstyret er i samsvar med de grunnleggende krav og andre relevante bestemmelser i EU-direktiv 1999/5/EF.             |

|                            |                                                                                                                                        |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Polski<br>[Polish]:        | Urządzenie jest zgodne z ogólnymi wymaganiami oraz szczególnymi warunkami określonymi Dyrektywą UE: 1999/5/EC.                         |
| Portugues<br>[Portuguese]: | Este equipamento esta em conformidade com os requisitos essenciais e outras provisoes relevantes da Directiva 1999/5/EC.               |
| Romană<br>[Romanian]:      | Acest echipament este in conformitate cu cerintele esentiale si cu alte prevederi relevante ale Directivei 1999/5/EC.                  |
| Slovensko<br>[Slovenian]:  | Ta naprava je skladna z bistvenimi zahtevami in ostalimi relevantnimi pogoji Direktive 1999/5/EC.                                      |
| Slovensky<br>[Slovak]:     | Toto zariadenie je v zhode so zakladnymi požiadavkami a inymi prislusnymi nariadeniami direktiv: 1999/5/EC.                            |
| Suomi<br>[Finnish]:        | Tämä laite täyttää direktiivin 1999/5/EY olennaiset vaatimukset ja on siinä asetettujen muiden laitetta koskevien määräysten mukainen. |
| Svenska<br>[Swedish]:      | Denna utrustning är i överensstämmelse med de väsentliga kraven och andra relevanta bestämmelser i Direktiv 1999/5/EC.                 |



#### Note

A copy of the signed Declaration of Conformity can be obtained from this postal address:

TELDAT Madrid

Isaac Newton, 10 - (Parque Tecnológico de Madrid)

28760 Tres Cantos, Madrid (Spain)

Tel.: +34 918 076 565 - Fax: +34 918 076 566 - International Tel.: +34 918 076 630

### 2.5.1.2 Countries where the equipment is intended to be used

| This equipment may be operated in |    |    |    |    |    |    |    |
|-----------------------------------|----|----|----|----|----|----|----|
| AT                                | BE | CY | CZ | DK | EE | FI | FR |
| DE                                | GR | HU | IE | IT | LV | LT | LU |
| MT                                | NL | PL | PT | SK | SI | ES | SE |
| GB                                | IS | LI | NO | CH | BG | RO | TR |

### 2.5.1.3 CE Marking

For the **Teldat Connect-104** , the following CE tag and class 2 identifier are added to the equipment.



Usage restrictions apply.  
See documentation

#### Standards

The following standards were applied during the assessment of the product against the

requirements of the Directive 1999/5/EC:

- Radio: EN 300 328
- EMC: EN 301 489-1, EN 301 489-17
- Safety: EN 60950-1 and EN 50385

#### National Restrictions

This product may be used in all EU countries (and other countries following EU directive 1999/5/EC) without any limitation except for the countries mentioned below:

Ce produit peut être utilisé dans tous les pays de l'UE (et dans tous les pays ayant transposés la directive 1999/5/CE) sans aucune limitation, excepté pour les pays mentionnés ci-dessous:

Questo prodotto è utilizzabile in tutte i paesi EU (ed in tutti gli altri paesi che seguono le direttive EU 1999/5/EC) senza nessuna limitazione, eccetto per i paesi menzionati di seguito:

Das Produkt kann in allen EU Staaten ohne Einschränkungen eingesetzt werden (sowie in anderen Staaten die der EU Direktive 1999/5/CE folgen) mit Ausnahme der folgenden aufgeführten Staaten:

In the majority of the EU and other European countries, the 2.4- GHz band has been made available for the use of wireless local area networks (LANs). Table 1 provides an overview of the regulatory requirements applicable for the 2.4 GHz band.

Later in this paragraph you will find an overview of countries in which additional restrictions or requirements or both are applicable.

The requirements for any country may evolve. Teldat recommends that you check with the local authorities for the latest status of their national regulations for 2.4 wireless LANs.

| <b>Table 1. Overview of Regulatory Requirements for 2.4 Wireless LANs</b> |                             |             |                  |
|---------------------------------------------------------------------------|-----------------------------|-------------|------------------|
| Frequency Band (MHz)                                                      | Max Power Level (EIRP) (mW) | Indoor ONLY | Indoor & Outdoor |
| 2400-2483,5                                                               | 100                         |             | X                |

The following countries have restrictions and/or requirements in addition to those given in the Table 1:

#### Belgium

For 2.4 GHz, the product should not be used outdoors in the band 2400 - 2454 MHz.

#### France

For 2.4 GHz, the product should not be used outdoors in the band 2454 - 2483,5 MHz. There are no restrictions when used in other parts of the 2,4 GHz band OR when used indoors. Check <http://www.arcep.fr/> for more details.

Pour la bande 2,4 GHz, l' équipement ne doit pas être utilisé en extérieur dans la bande 2454- 2483,5 MHz. Il n'y a aucune restriction pour son utilisation dans d'autres parties de la bande des 2,4 GHz ainsi que pour une utilisation en intérieur. Consultez <http://www.arcep.fr/> pour de plus amples détails.

| <b>Applicable Power Levels in France (2.4 GHz only)</b> |                       |                 |
|---------------------------------------------------------|-----------------------|-----------------|
| Location                                                | Frequency Range (MHz) | Power (EIRP)    |
| Indoor (No restriction)                                 | 2400-2483,5           | 100 mW (20dBm)  |
| Outdoor                                                 | 2400-2454             | 100 mW (20 dBm) |
|                                                         | 2454-2483,5           | 10 mW (10 dBm)  |

#### Italy

This product meets the National Radio Interface and the requirements specified in the National Frequency Allocation Table for Italy. Unless this 2,4-GHz wireless LAN product is operating within the boundaries of the owner's property, its use requires a "general authorization." Please check <http://www.comunicazioni.it/it/> for more details.

Questo prodotto è conforme alle specifiche di Interfaccia Radio Nazionali e rispetta il Piano Nazionale di ripartizione delle frequenze in Italia. Se non viene installato all'interno del proprio fondo, l'utilizzo di prodotti Wireless LAN a 2,4 GHz richiede una "Autorizzazione Generale." Consultare <http://www.comunicazioni.it/it/> per maggiori dettagli.

### Latvia

The outdoor usage of the 2,4 GHz band requires an authorization from the Electronic Communications Office. Please check <http://www.esd.lv> for more details.

2,4 GHz frekvenču izmantošanai nepieciešama atļauja no Elektronisko sakaru direkcijas. Vairāk informācijas: <http://www.esd.lv>.



#### Note

(1) Although Norway, Switzerland and Liechtenstein are not EU member states, EU Directive 1999/5/EC has also been implemented in those countries.

(2) The regulatory limits for maximum output power are specified in EIRP. The EIRP level of a device can be calculated by adding the gain of the antenna used (specified in dBi) to the output power available at the connector (specified in dBm).

### 2.5.1.4 Product Usage Restrictions

This product is designed for indoor usage only. Outdoor usage is not recommended, unless otherwise noted.

#### 2.4 GHz Restrictions

This product is meant to be used with the standard, integral or dedicated (external) antenna(s) that is/are shipped together with the equipment.

### 2.5.1.5 Third-Party Software or Firmware

The use of software or firmware not supported/provided by Teldat may cause the equipment to be no longer compliant with the regulatory requirements.

### 2.5.1.6 Technical Documents on [www.teldat.com](http://www.teldat.com)

For further information on how to find Technical documents on the Teldat website, please see our corporate page: <http://www.teldat.com>.

## 2.6 Translated safety warnings

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