



TELDAT V ROUTER

Installation Manual

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About This Manual

This is the installation manual for the Teldat V router and contains information to correctly install this device in a working environment.

Supported Devices

The information contained in this installation manual only applies to the Teldat V router, models TLDPV00A1 / TLDPV01A1 / TLDPV02A1 / TLDPV03A1 / TLDPV04A1.

Who should read this manual?

This manual should be read by the support personnel who need to install, configure, maintain and monitor the device.

When should this manual be read?

Read this guide as soon as you are ready to familiarize yourself with the device and its components.

This manual will help you understand your new device in greater depth.

What is in this manual?

This installation guide contains the following information:

- Description of the available features in the Teldat V.
- Technical specifications.
- Power supply requirements.
- Elements you can connect to the device while it is running.
- Installation and removal procedures for modules and power supplies.
- Description of the device LEDs and the connectors.
- Troubleshooting.

What is not in this manual?

This does not contain information relative to the device software nor does it contain information on the configuration. For information on configuring this device, please see the relevant protocol manuals, which can be found on the Teldat website: www.teldat.com.

How is the information organized?

Each chapter focuses on a specific part of the hardware and its components. All descriptive, technical specifications and information on a component can be found in the chapter dedicated to that component.

Technical Support

Teldat, S.A. offers a technical support service. Device software can be upgraded on a regular basis for maintenance purposes and for new features.

Contact information:

Web: www.teldat.com

Tel. N°: +34 918 076 565

Fax: +34 918 076 566

Email: support@teldat.com

Related Documentation

Dm 741-I *ADSL- VDSL2*

Dm 748-I *Software Updating*

Dm 781-I *Cellular Interface*

Teldat V Router

Features

Power supply

For further information on the power supply in the Teldat V router, please see the chapter on “[Components and power supplies](#)”, in the section on “[Power Source](#)”.

Hardware Monitoring

The only way to monitor the Teldat V router hardware is through the LEDs panel. The LEDs provide visual information on what is happening in the device. These indicate the state of the hardware components, if there is connectivity, data flow, etc.

For further information on the LEDs panel, please see the section on “[Components](#)” in the following chapter.

Components and Power Supply

The following chapter provides detailed information on the chassis of the Teldat V router and its components. This information includes:

- Components.
- Information on assembly.
- Installation and removal of modules.
- Power supply.
- RST button.
- Data connection.
- SIM card installation.

Components

Front Panel

The following figure shows the front panel. The only thing to be found here are the 3G antenna connectors.

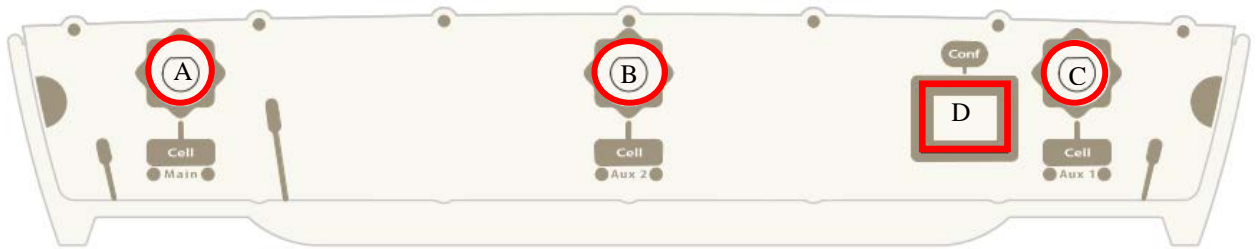


FIGURE 1. FRONT PANEL

The front panel elements are as follows:

Item	Description
A	Main antenna for the Teldat V cellular module.
B	Auxiliary antenna 2 for the Teldat V cellular module.
C	Auxiliary antenna 1 for the Teldat V cellular module.
D	RJ-45 connector to provide access to the Teldat V local console for configuring and monitoring purposes.

TABLE 1. FRONT PANEL ELEMENTS

Rear Panel

The following figure shows the rear panel. Here you can see the rest of connectors for the Teldat V router.

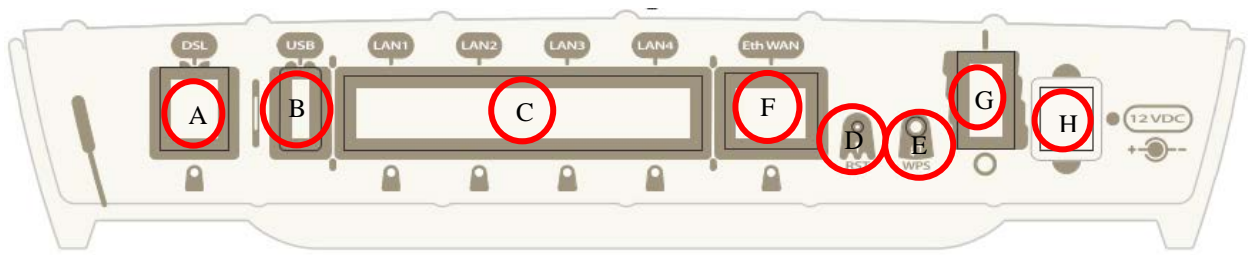


FIGURE 2. REAR PANEL

The following table provides information on each connector as well as a description:

Item	Descripción
A	DSL. DSL connector.
B	USB. Slot where you can insert a 3G USB modem.
C	4-port Gigabit Ethernet Switch.
D	RST. Reset button. For further information on how the reset button works, please see the section on “ RST Button ” in this chapter.
E	WPS (Wireless Protected Setup). This allows for easy and secure configuration of the WiFi network parameters.
F	Eth WAN. WAN Gigabit Ethernet.
G	On/Off switch.
H	Power source connection (PSU).

TABLE 2. REAR PANEL ELEMENTS

Side Panels

Two WiFi antennas are located on the side panels, one on either side.

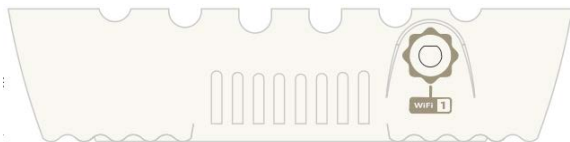


FIGURE 3. RIGHT HAND SIDE PANEL

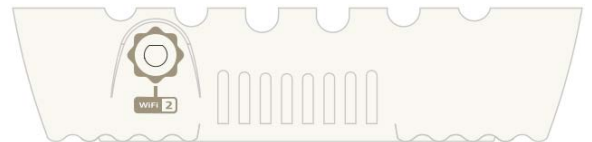


FIGURE 4. LEFT HAND SIDE PANEL

Underside Panel

The following elements can be found on the underside panel:

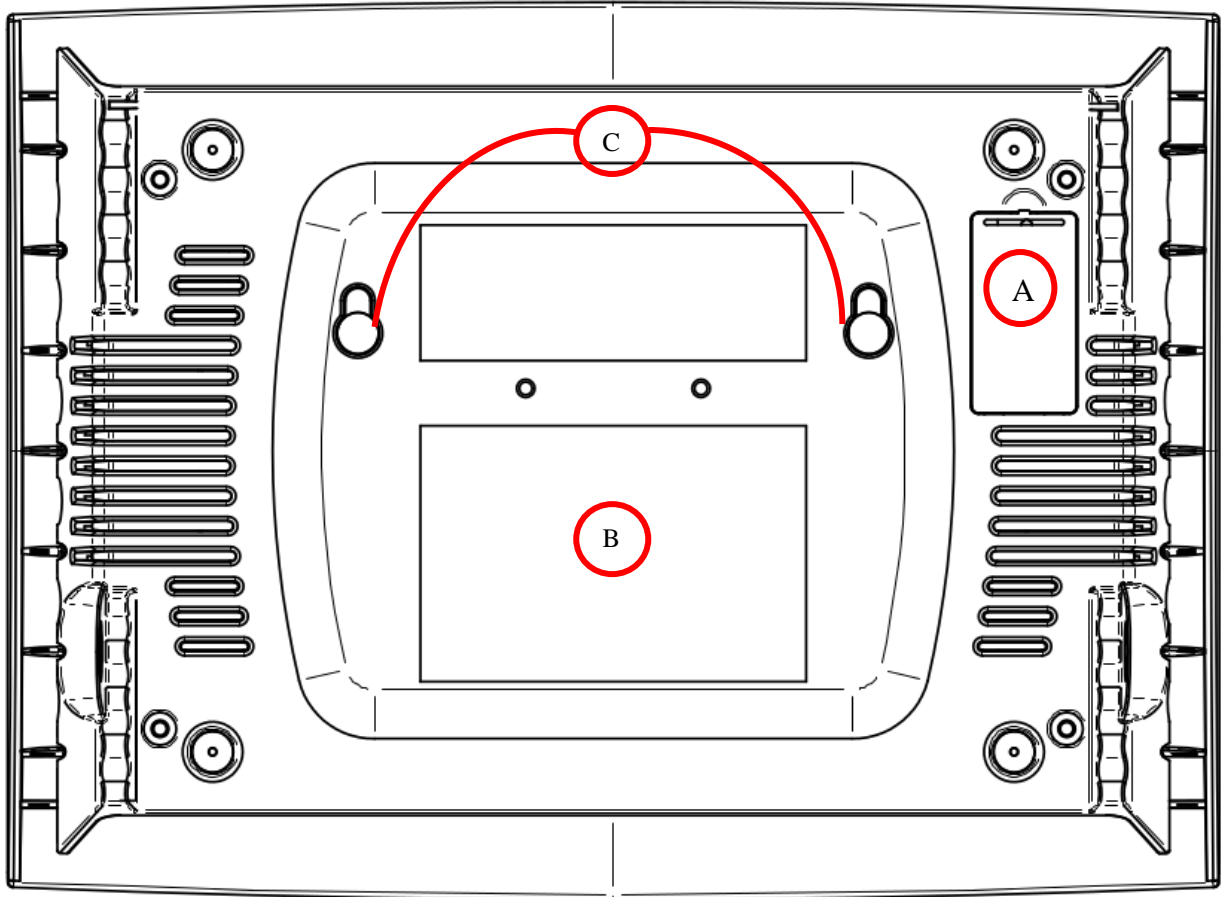


FIGURE 5. UNDERSIDE PANEL

The following table contains details on the significant elements on the underside panel.

Item	Descripción
A	SIM tray for the 3G internal module. It's accessed from the underside of the router.
B	Platform where the label containing the information on the product is placed. This label contains information on the device model, mac, serial number, etc.
C	Slots for wall mount.

TABLE 3. UNDERSIDE PANEL ELEMENTS TABLE

Top Panel (LEDs)

The LEDs panel provides information on the state of the components (whether they are active or not) or on the network activity.

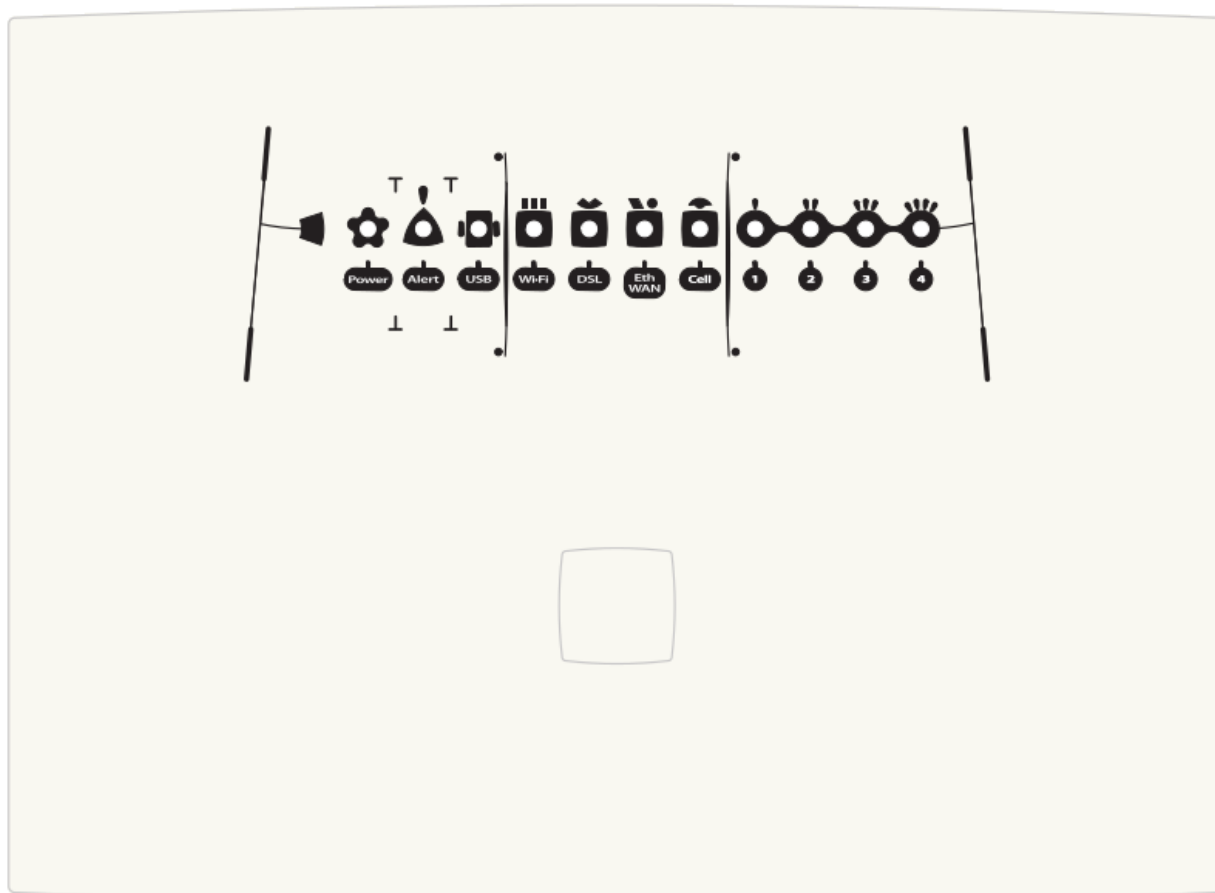


FIGURE 6. LEDS PANEL

The LEDs for the Teldat V router are shown in the above figure. The table below contains a description on them.

LED	Estado	Descripción
Power	Monochrome	Off → not being powered through PSU
	Green	On → powered through PSU
Alert	Monochrome	On → when software is running.
	Green	
USB	Tricolor	Off → system is powered off.

		<p>Red → interface is unavailable because it's in installation phase; it's not enabled (shutdown) or due to auto-test failure.</p> <p>Amber → idle.</p> <ul style="list-style-type: none"> - Rapid blinking. It hasn't registered in the network or there isn't sufficient quality to do that. - Slow blinking. GSM connection (GPRS). - Steady. WCDMA (UMTS / HSDPA) connection. <p>Green → connected. Blinking: connection data activity.</p>
Wi-Fi	Bicolor	<p>Red → interface down.</p> <p>Green → interface up.</p> <p>Blinking (green/red) → activity/maintenance.</p>
DSL	<p>Monochrome</p> <p>Green</p>	<p>Slow blinking → not connected</p> <p>Rapid blinking → the link is being established</p> <p>Steady → connected</p>
Eth WAN	Tricolor	<p>Green → connected. Blinking: connection data activity.</p> <p>Amber → blinking, auto-test.</p> <p>Red → disconnected.</p>
Cell	Tricolor	<p>Off → system is powered off.</p> <p>Red → interface is unavailable because it's in installation phase; it's not enabled (shutdown) or due to auto-test failure.</p> <p>Amber → idle.</p> <ul style="list-style-type: none"> - Rapid blinking. It hasn't registered in the network or there isn't sufficient quality to do that. - Slow blinking. GSM connection (GPRS). - Steady. WCDMA (UMTS / HSDPA)

connection.

Green → connected. Blinking: connection data activity.

Cobertura (1, 2, 3, 4)	Monochrome blue	Indicates the coverage level the 3G internal module has. 0 level (all LEDs off) to 4 (all LEDs on).
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TABLE 4. LEDs TABLE

Mounting in rack

The Teldat V router cannot be mounted in a rack. However there are other types of mounting.

Standalone

The Teldat V router can be placed as a standalone on a flat, stable surface.

You need to make sure that there is enough space around the router for ventilation purposes and ensure that the electricity cables can reach it.

Wall mounting

The Teldat V can be mounted on the wall.

There are two slots on the underside of the device which are used to fix it to the wall. You can see this in the section on the "[Underside panel](#)".

You must provide the screws and wall anchors. We recommend the following accessories for wall mounting, valid for solid wall and Gypsum board (plaster) wall:

- 2 screws: [COACH SCREW HEAD 90 DEGR.POZIDR. 3,5x30]




FIGURE 7. SCREW

- 2 wall anchors: [WHITE STRIATED WALL ANCHOR DIAM.8mm]



FIGURE 8. WALL ANCHOR

 Caution: The screws must go into a wall stud (wood) or a wall anchor of the appropriate type for the wall. Screws into drywall are not sufficient to mount the router.

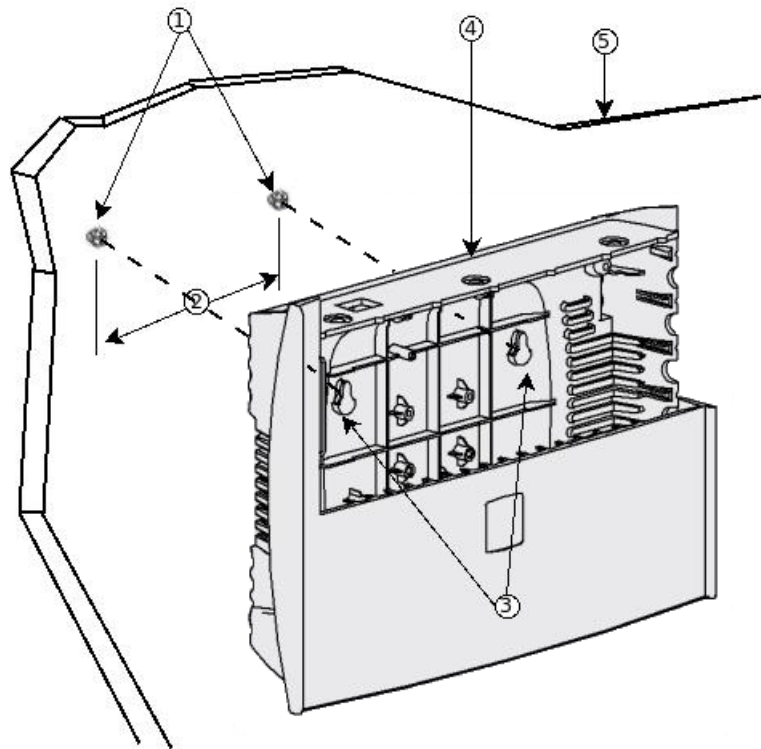


FIGURE 9. WALL-MOUNTING FEATURES ON THE TELDAT V ROUTER

Previous Figure shows the wall-mounting features on the Teldat V.


1	Wall screws	2	10.2 cm (4.02 inches)
3	Chassis mounting holes (on bottom)	4	Router chassis
5	Mounting surface		

To mount the router on a wall or any other surface, follow these steps:

Procedure

Step 1 Install the two screws (3,5x30) horizontally apart on a wall or any other vertical surface.

The screws should protrude 0.6 cm (0.25 inch) from the surface of the wall.

 **Caution:** If you install the screws in drywall, use hollow-wall anchors (8mm – 5/16 inch) to secure the screws. If the screws are not properly anchored, the strain of the cables connected to the router back panel could pull the router from the wall.

Step 2 Hang the router on the screws. This is the appropriate orientation for safe use. (See Figure 9)

Note:

- The accessories for wall mounting the device are not provided in the package, and have to be acquired separately.
- The accessories must be properly adapted to the kind of wall and must be chosen to ensure that they can support the weight of the device.

Plug-in Modules

The only module that can be inserted in the device is the USB 3G modem. In order to view the list of 3G modems that are supported, please go to the Teldat website: www.teldat.com.

Installation

In order to install the USB modem, simply insert it in the USB slot on the rear panel as shown in the following figure:

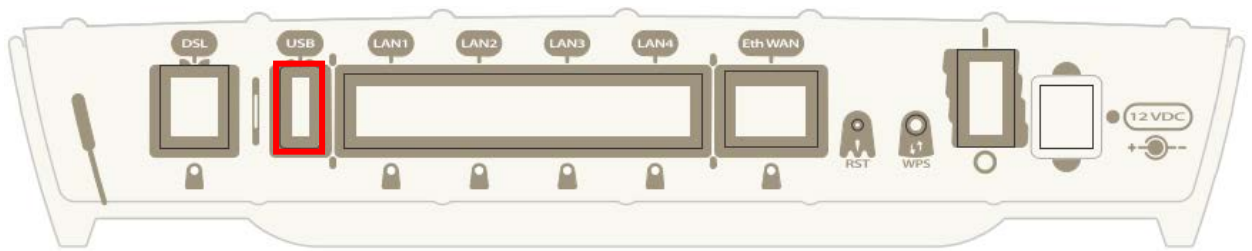


FIGURE 10. USB MODEM INSERTION SLOT

Uninstall

To remove the device, simply remove it from the slot where it was inserted. See figure 10.

Power Source

The Teldat V router is powered through an external AC/DC.

The equipment must be used with the power supply provided by manufacturer, or equivalent.

Workplace Conditions. Main Characteristics

- Avoid humid and or dusty locations.
- 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.
- 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: Electric supply current for telephone and communication cables is dangerous. To prevent electric shock while installing, moving or opening the device covers, cables should be “[Connecting](#)” and “[Disconnect](#)” as explained in the sections on this.

External Power Source

To connect the power supply to the device, please follow the steps indicated in the section on [“Connecting”](#).

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

It is highly recommended that all interconnected communication devices are 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.

Connecting

- Make sure that the router’s power supply switch is in the OFF position (0).
- Ensure that the power supply is NOT connected to either the electricity or the router.
- Connect all data cables.
- Connect the power supply cable to the device.
- Connect the power supply cable to the electricity supply.
- Put the router’s power supply switch to the ON position (1).

Disconnect

- Make sure that the router’s power supply switch is in the OFF position (0).
- Disconnect the power supply from the electricity supply.
- Disconnect the power supply from the router.
- Disconnect the data cables.

RST Button

The different features of the RST button are described below.

Rebooting the device

Once the device is operating normally, if you press the RST button, this will restart.

Default Configuration

The RST button allows you to boot the device with its default configuration through the following steps:

- With the device switched off maintain the RST button depressed and switch on the router through the ON/OFF switch (1).
- The Power LED (green) will light up and the USB LED will begin to blink (green). This blinking will continue for 10 seconds.
- So that the device boots with the default configuration, you need to release the RST button while the USB LED is blinking, i.e. before the 10 second period terminates.

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

- IP address: 192.168.1.1
- IP mask: 255.255.255.0

Some devices leave the manufacturers with a personalized configuration for the client. This personalization may mean that the default configuration establishment may be different from the one shown above.

Connecting the data

The Teldat V router has the following data connections.

4-port Ethernet Switch

The Teldat V router incorporates a 4-port 10/100/1000 BaseT Switch with automatic MDI/MDIX to connect to a local area network (LAN).

Please pay careful attention to the labeling so you do not confuse this switch with other types of ports:

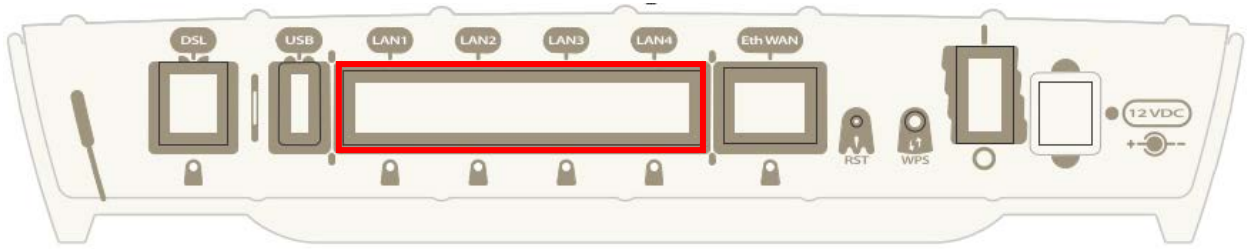


FIGURE 11. LAN SWITCH PORTS

During booting and in BIOS mode, only the LAN 1 connector is available.

WAN Connection

The Teldat V incorporates an Ethernet WAN 10/100/1000 BaseT port with automatic MDI/MDIX.

The WAN port is independent to the Switch and is handled as just one more interface.

Please pay careful attention to the labeling so you do not confuse this switch with other types of ports:

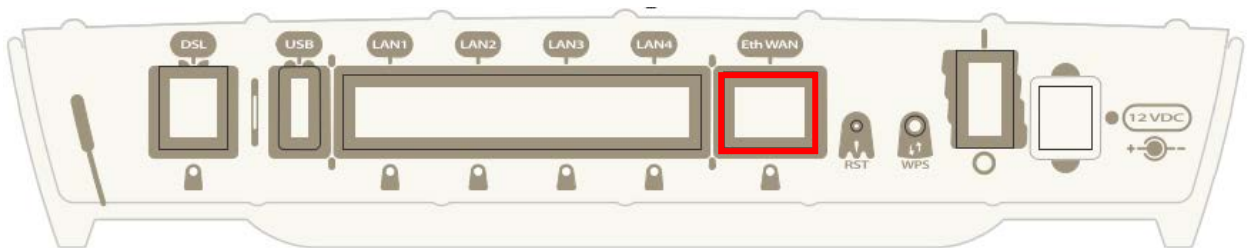


FIGURE 12. WAN PORT

During booting and in BIOS mode, the Eth WAN connector is not operative.

DSL Connection

The Teldat V has a DSL connector to connect to a VDSL2/ADSL network. This is a 4-wire female RJ11 connector where the **central pair is used** for data transmission/reception.

For connection you can use the telephone cable with male RJ11 connectors that are provided

with the device.

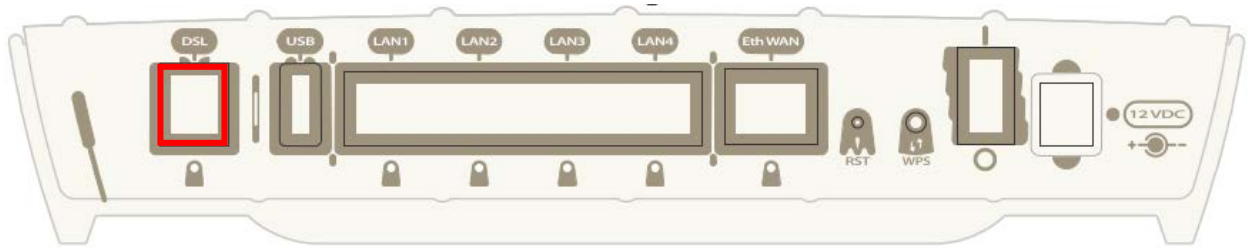


FIGURE 13. DSL PORT (VDSL2/ADSL)

The splitter

By default, the supported modes do not allow the use of the basic service device (PSTN or ISDN depending on the model) directly connected to the same line; you need to use a device known as a “splitter”, which separates the basic service frequencies band from those used by the DSL connection, thus avoiding interferences between the telephone service and DSL service.

A typical installation with a splitter is shown in figure 14.

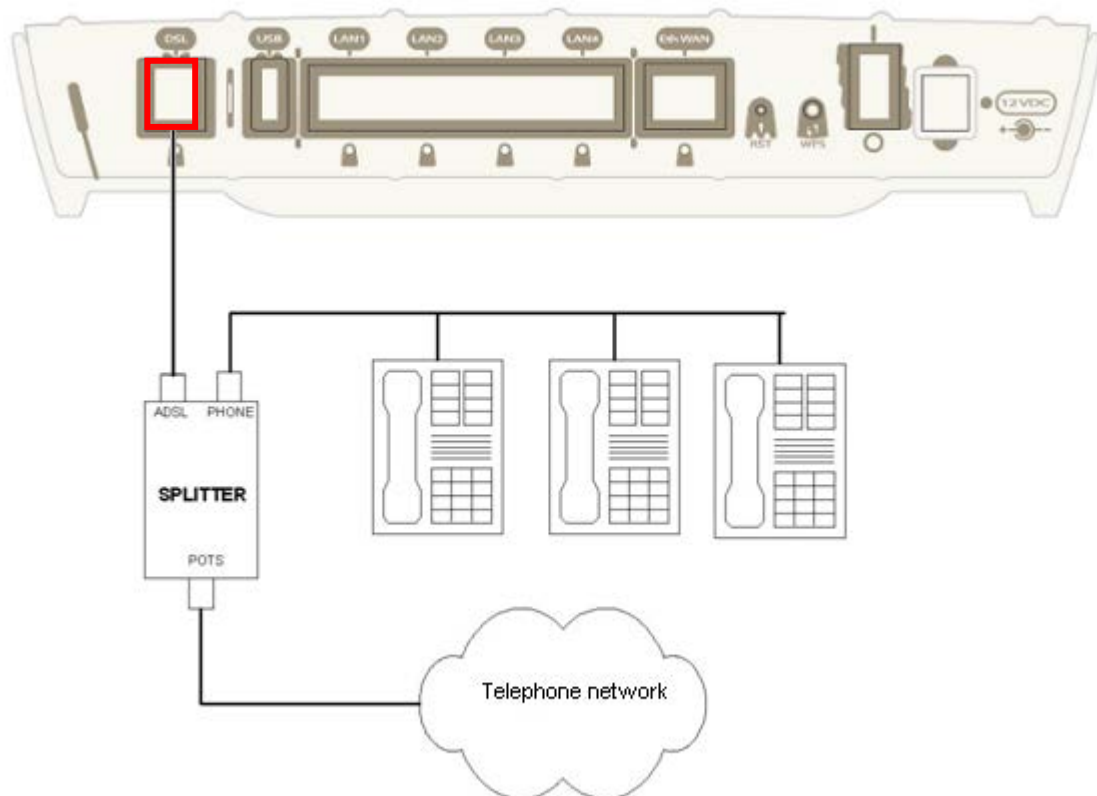


FIGURE 14. ADSL INSTALLATION WITHS PLITTER

The micro-filters

Only some DSL operating modes (eg, G.Lite or ITU G.922.2) permit the use of basic service devices (PSTN or ISDN) directly connected to the same line by using a device called “micro-filter”. This device ensures that the DSL signal does not reach the basic service device and that undesired signals generated by the device do not interfere with the DSL signal.

A typical installation with micro-filters is shown in figure 15.

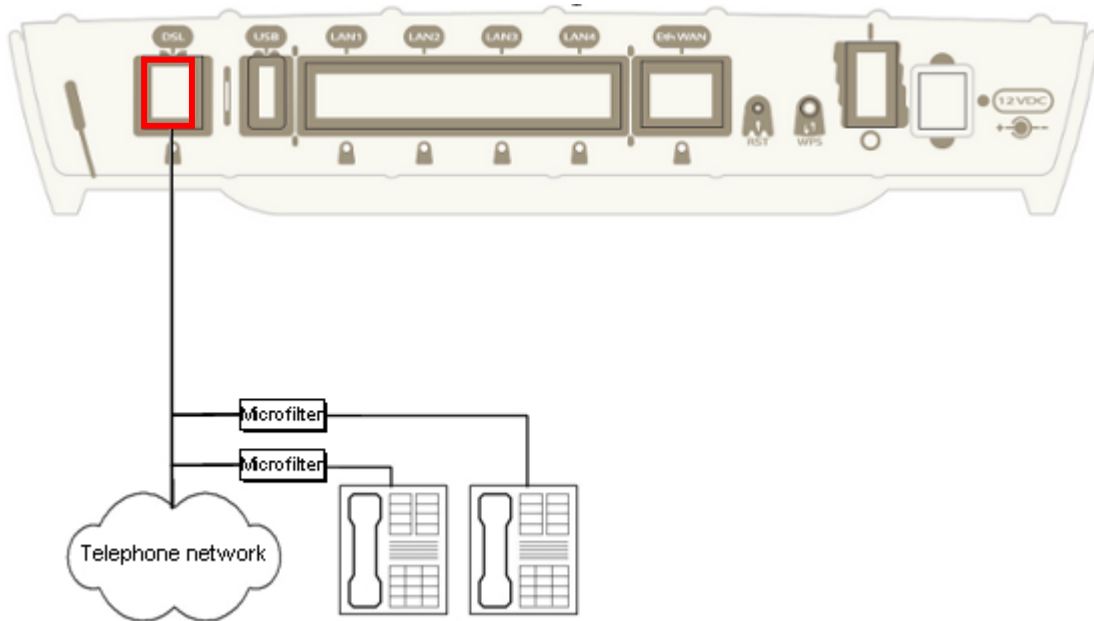


FIGURE 15. ADSL INSTALLATION WITH MICROFILTERS

WWAN Antenna Connection (Cell connector)

The Teldat V router has three connectors to connect 3G antennas. To assemble and disassemble the antennas, simply screw them into the connectors labeled *Cell* on the front panel of the router.

The installation of these antennas in the Teldat V router is essential in order to improve the quality of the signal received and transmitted by the cellular model.

So that the Wireless WAN interface is operative, the device must have a plug-in Wireless WAN card and the corresponding software license. If your device does not have the Wireless WAN module incorporated, you can obtain this later on. The manual accompanying this module will indicate how to install it as well as the corresponding antenna cables in the device.

To obtain good performance, the router should always have the WWAN antennas installed.

So the *cellular* interface is operative, the router must have the corresponding software license incorporated.

Some cellular telephony technologies use the antenna diversity technique to improve the quality of the received signal (HSUPA, CDMA EV-DO, etc.). Due to this the Teldat V router incorporates various WWAN connectors

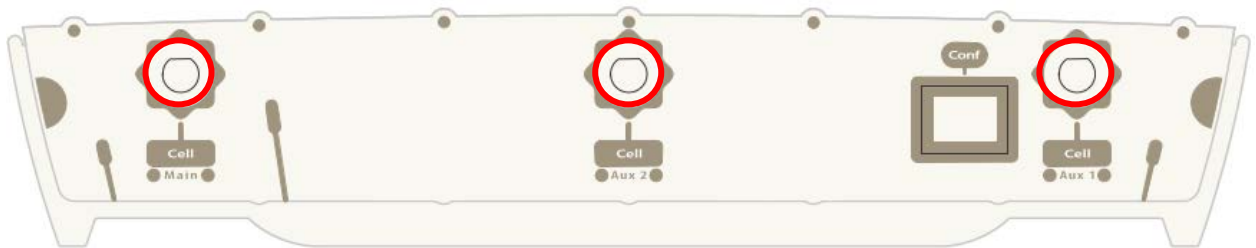


FIGURE 16. WWAN ANTENNAS

When the Main and Aux 1 antennas are not installed directly connected to the router but through extension cords, the minimum distance between the two of them must be 7cm. The maximum recommended distance between the two is 25cm.

To achieve an optimum performance, the radio frequency accessories installed (antennas and cables) should be those recommended by Teldat.

Teldat has a series of accessories available (90° mount antennas, antennas for exterior installation, antennas ceiling installation, extension cables, etc) which allow you to install the devices in different locations.

Placing the Antenna

The orientation of the antenna, its location with respect to other wireless devices or other radiation sources such as communication devices, personal computers, etc can significantly influence the performance level of the equipment.

The antennas transmit and receive radio signals. This performance is also affected by environment factors such as the distance between the device and the base station, physical obstacles and other interferences due to radiofrequencies (RF).

In order to receive better coverage, follow the instructions given below:

- Whenever possible, position the antenna in a place where there are no physical obstacles. Obstacles between the antenna and the base station degrade the wireless signal. Place the antenna above ground level and appropriately orientate it towards the nearest base station.

- The density of materials also affects the antennas. Position it away from all types of walls, metal screens, mirrors, etc.
- Do not place the antenna near columns that could throw shadows and reduce the coverage area.
- Keep the antenna away from metal ducts such as canalization, air-conditioning etc.
- Bear in mind that other wireless devices such as telephones, microwaves, etc can temporarily interfere with the quality of the wireless signal.
- We do not recommend that you install antennas in racks containing communication devices, computers, etc. Use an extension cord for this and locate the antenna outside.

The following recommendations are applicable to all wireless devices:

- Do not touch or move the antenna while the device is transmitting or receiving.
- Do not handle any equipment that contains devices which radiate so the antenna is very close or touching any exposed part of the body, particularly the face or eyes, when it is transmitting.
- Do not install the device in areas where the atmosphere is potentially explosive.
- Wireless devices can cause interferences with other devices. Do not use the device in environments where medical equipment is installed.
- To ensure the R&TTE 1999/5/EC directive is complied with, the device must be at least 15 cm away from a person's body when operating.

Wireless LAN Antenna Connection (Wi-Fi connectors)

The Teldat V router has two RF antenna connectors to connect an external antenna to improve the quality of the signal received and transmitted by the Wireless LAN module.

This module is internal and can be activated by purchasing the corresponding software license. To assemble and disassemble the antennas provided with the device, just screw them into the connectors, labeled *Wi-Fi*, which are located on both lateral panels of the router.



FIGURE 17. WI-FI ANTENNA 1

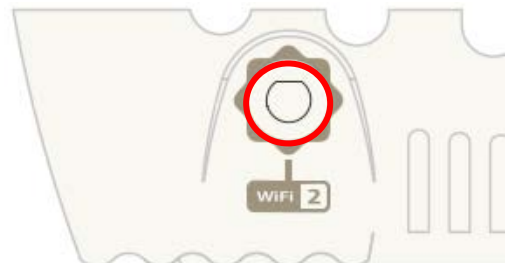


FIGURE 18. WI-FI ANTENNA 2

Connecting a 3G USB device (USB connector)

The Teldat V has a USB HOST 2.0 Type A connector interface which permits 3G USB modems to be connected. The interface can be activated by purchasing the corresponding software license.

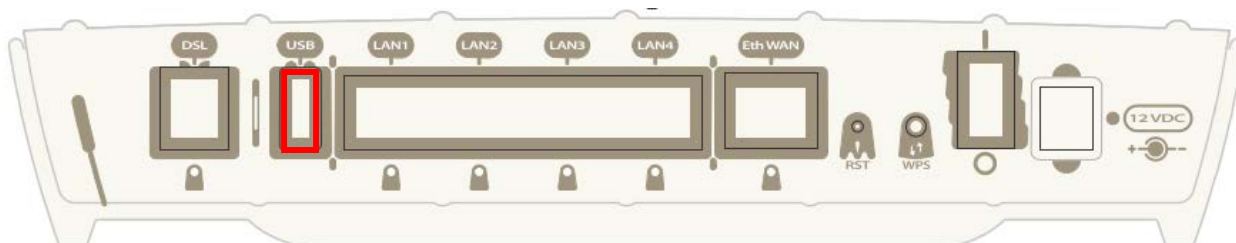


FIGURE 19. USB 3G CONNECTOR

Installing the SIM card

The Teldat V has a Wireless WAN interface that in order to operate require one SIM card that must be inserted into the device. There are determined services (CDMA) provided by some carriers in certain countries that do not require SIM cards.

To access the 3G module SIM tray, you need to go to the underside of the router, open the flap which is shown in the following figure in order to insert the SIM card.

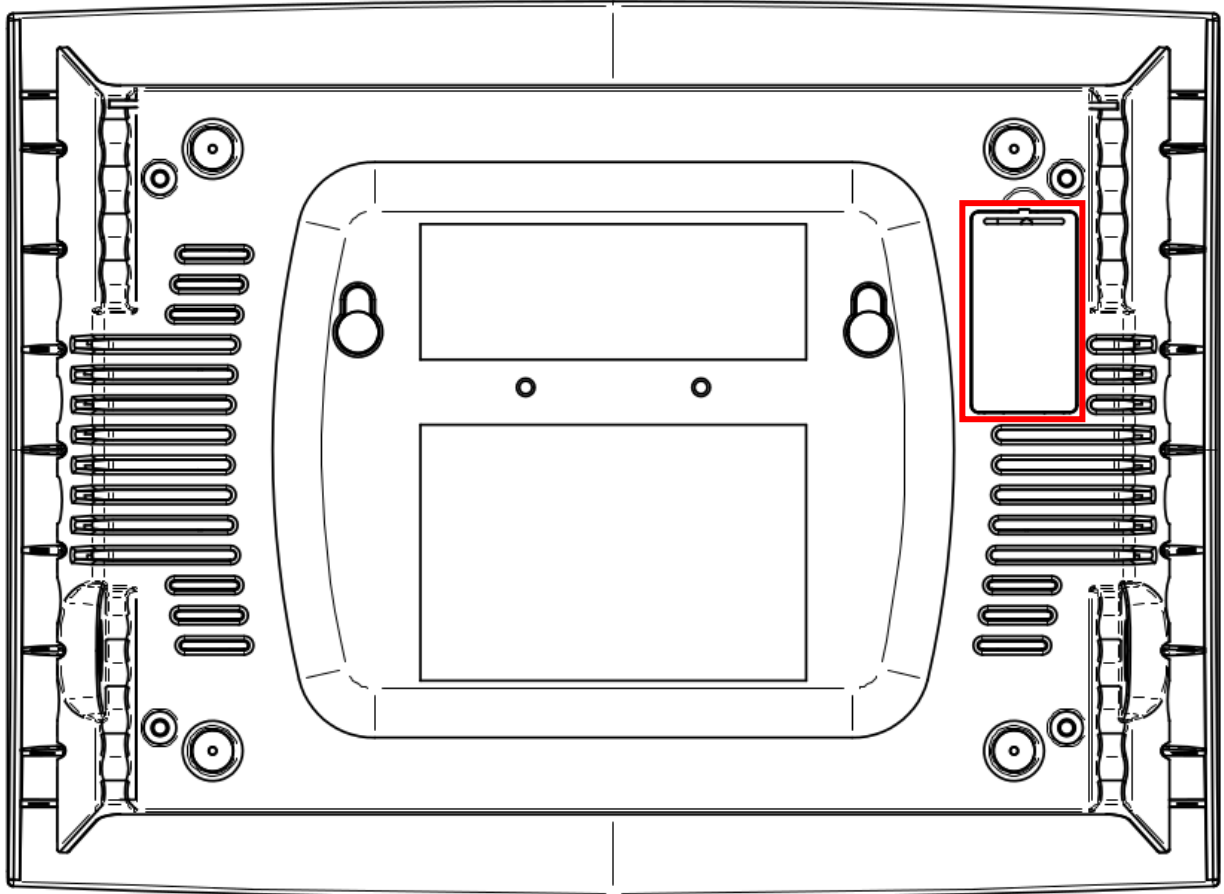


FIGURE 20. 3G MODULE SIM TRAY

You need to insert the SIM in the following way. First locate the slot and remove the flap. The SIM tray at that point is visible. Then you need to carry out the following steps:

1. Push the fastening in the direction indicated by the labelled *OPEN*.
2. Open the upper part of the tray.
3. Fully insert the SIM card using the guides.
4. Return the tray to its original position
5. While pressing on the tray, push the fastening towards the inside of the tray *OPEN* so it is completely held.

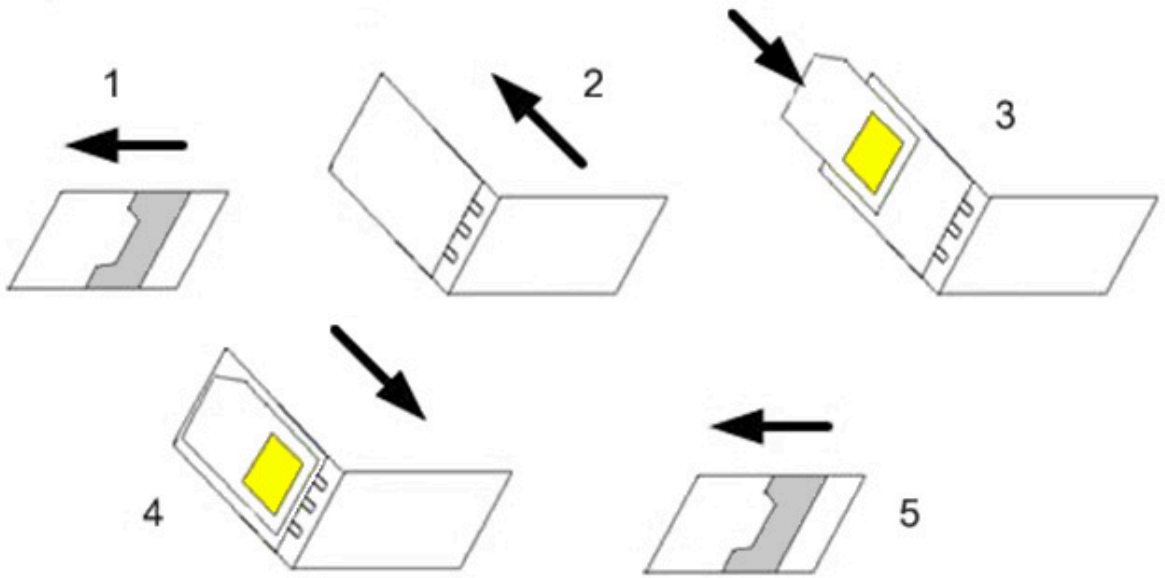


FIGURE 21. INSTRUCTIONS TO INSERT THE SIM IN THE 3G MODULE

Appendix A. Model information

Actually exists several equipments with different WWAN module configuration. Next table shows the relation between the commercial name, regulatory model and functionality.

Part Number	Comercial Name	Regulatory Name	Description
RCTVH001	Teldat V	TLDPV00A1	Teldat V: 1xVDSL2/ADSL2+, 4xGE
RCTVH003	Teldat V-H+	TLDPV01A1	Teldat V-H+: 1xVDSL2/ADSL2+, 4xGE, HSPA+
RCTVH004	Teldat V-LE	TLDPV02A1	Teldat V-LE: 1xVDSL2/ADSL2+, 4xGE, LTE (Europe)
RCTVH005	Teldat V-LA	TLDPV03A1	Teldat V-LA: 1xVDSL2/ADSL2+, 4xGE, LTE (AT&T)
RCTVH006	Teldat V-LV	TLDPV04A1	Teldat V-LV: 1xVDSL2/ADSL2+, 4xGE, LTE (Verizon)
RCTVH101	Teldat V-GE	TLDPV00A1	Teldat-V-GE: 1xGE, 4xGE
RCTVH103	Teldat V-GE-H+	TLDPV01A1	Teldat V-GE-H+: 1xGE, 4xGE, HSPA+
RCTVH104	Teldat V-GE-LE	TLDPV02A1	Teldat V-GE-LE: 1xGE, 4xGE, LTE (Europe)
RCTVH105	Teldat V-GE-LA	TLDPV03A1	Teldat V-GE-LA: 1xGE, 4xGE, LTE (AT&T)
RCTVH106	Teldat V-GE-LV	TLDPV04A1	Teldat V-GE-LV: 1xGE, 4xGE, LTE (Verizon)
RCTVH303	Teldat VB-H+	TLDPV01A1	Teldat V VB-H+: 4xGE, HSPA+
RCTVH304	Teldat VB-LE	TLDPV02A1	Teldat VB-LE: 4xGE, LTE (Europe)
RCTVH305	Teldat VB-LA	TLDPV03A1	Teldat VB-LA: 4xGE, LTE (AT&T)
RCTVH306	Teldat VB-LV	TLDPV04A1	Teldat VB-LV: 4xGE, LTE (Verizon)

Appendix B

Troubleshooting

Below, you will find a table, which will help you to solve problems during the installation of the router. If you cannot resolve the problem, please consult your distributor for additional information.

Symptom	Solution
None of the LEDs lights up on the router.	Check the power supply to the router (power source, ON/OFF switch, main power outlet).
You have forgotten the access password for the router.	Ignore the configuration through the RST button as explained in the section relative to the RST button.
The <i>DSL</i> LED never lights up in green.	If the device 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 supports xDSL service.
The <i>Eth WAN</i> LED never lights up in green.	Check the Ethernet cable and the connection to the network.
The <i>Wi-Fi</i> LED never lights up in green.	Check the router's configuration and that for the remote station(s). Check the appropriate license is available for its use.
The <i>USB</i> LED never lights up in green.	Check that the device inserted in the USB connector is supported by the router. Please check the Teldat website www.teldat.com to get the list of 3G USB modems that are supported. Check the appropriate license is available for its use.

Updating the software

The Teldat V router can be updated to new releases. Please consult your distributor for further details on new releases.

There are various ways to update a Teldat router: For further information, please see the manual on updating software: "*Dm 748-I Software Updating*".

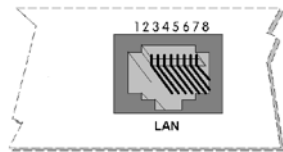
The software required to update Teldat routers is supplied in a format known as **distribution**. This consists of a single file which contains all the files needed to update your device as well as in-depth information on the contents of the files.

The Teldat V incorporates independent modules for the Wireless WAN interface. You can use modules from various manufacturers, or even various modules from the same manufacturer, depending on the technology used. Generally the modules' firmware is independent of the device's software. There is an UPGRADE file for each Wireless WAN module. Please ask your distributor for the correct UPGRADE file for the module in your device. The document describing the Cellular interface (manual Dm 781-I) explains how to UPGRADE the module.

Connectors

LAN Connector

RJ45 LAN

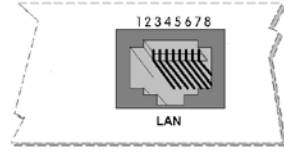


RJ45 PIN	FE Signals	GE Signals
1	BI-DA+	BI-DA+
2	BI-DA-	BI-DA-
3	BI-DB+	BI-DB+
4	--	BI-DC+
5	--	BI-DC-
6	BI-DB-	BI-DB-
7	--	BI-DD+
8	--	BI-DD-

TABLE 5. LAN CONNECTOR

WAN Connector

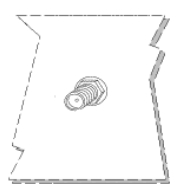
RJ45 WAN



RJ45 PIN	FE Signals	GE Signals
1	BI-DA+	BI-DA+
2	BI-DA-	BI-DA-
3	BI-DB+	BI-DB+
4	--	BI-DC+
5	--	BI-DC-
6	BI-DB-	BI-DB-
7	--	BI-DD+
8	--	BI-DD-

TABLE 6. WAN CONNECTOR

WWAN/Cell Connector (female)



PIN	ANT
Internal	RF in/out
External	GND

TABLE 7. WWAN/CELL CONNECTOR

WLAN/WiFi Connector (male)

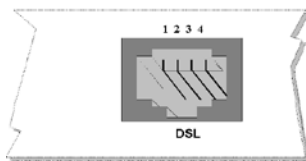


PIN	ANT
Internal	RF in/out
External	GND

TABLE 8. WLAN/WiFi CONNECTOR

DSL Connector

RJ11 DSL

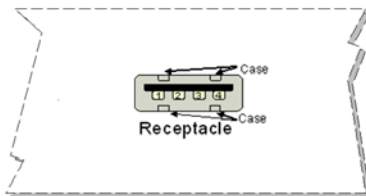


RJ11 PIN	DSL
1	Joined to 2
2	Line
3	Line
4	Joined to 3

TABLE 9. DSL CONNECTOR

USB Connector

USB Type A

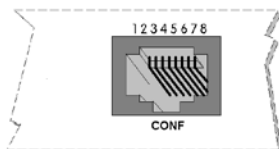


PIN	USB
1	VCC
2	DATA-
3	DATA+
4	GND
Shell	Shield

TABLE 10. USB CONNECTOR

Configuration Connector

RJ45 CONFIGURATION



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

TABLE 11. CONFIGURATION CONNECTOR

Power Supply Connector

PIN	ANT
Internal External	POSITIVE NEGATIVE

TABLE 12. POWER SUPPLY CONNECTOR

Technical Specifications

Hardware Architecture

PROCESSORS	Broadcom BCM963168
MEMORY	128 Mbytes in SDRAM.
STORAGE UNIT	FLASH Memory (32 Mbytes).

LAN Interface

PROTOCOLS	Ethernet (802.3).
PORTS	4 port Switch managed with MDI/MDX autodetection.
SPEED	10/100/1000 Mbps (BaseT).
CONNECTOR	RJ45 female.

WAN Interface

STANDARDS	Ethernet (802.3).
SPEED	10/100/1000 Mbps (BaseT)
CONNECTOR	RJ45 female.

DSL Interface

STANDARDS	Please see manual Dm 741-I
SPEED	Please see manual Dm 741-I
CONNECTOR	RJ11 female.

Wireless WAN Interface

STANDARDS	GPRS, UMTS, HSDPA, HSUPA, HSPA+, LTE ... Depending on the version of Wireless WAN interface the router has incorporated.
SPEED	Depending on the version of Wireless WAN interface the router has incorporated. Please consult the module manual.
CONNECTOR	2 RF SMA Female per module.
ANTENNA	Depends on the type of Wireless WAN module. Please consult the antenna catalog for Cellular interfaces.

Wireless LAN Interface

STANDARDS	802.11abgn
FREQUENCY	2.4 GHz / 5 GHz
SPEEDs	Supports all mandatory data rates specified in IEEE 802.11n up to 300 Mbps, and the legacy rates specified in IEEE 802.11a/b/g including 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54 Mbps
CONNECTOR	2 RF SMA Male

USB Interface

3G USB MODEMS	Please see the Teldat website www.teldat.com to get a list of the supported 3G USB modems.
SPEED	The interface complies with the USB 2.0 (480 Mbps) standard; the end 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 device front panel.

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	1.0 A
INPUT FREQUENCY	50-60 Hz

Dimensions and weight

TYPE	Desktop.
LENGTH x WIDTH x HEIGHT	242 x 179 x 48 mm.
WEIGHT	0.8 Kg.

Environmental Specifications

TEMPERATURE	OPERATING NORMALLY: 0°C to 45°C STORED: -30°C to 85°C
RELATIVE HUMIDITY	On: 5% to 90%

Appendix C. Compliance

FCC Statement

Federal Communications Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's Authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

This device and its antennas(s) must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures.

This device is going to be operated in 5.15~5.25GHz frequency range, it is restricted in indoor environment only.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

FCC 68

Customer Information

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. *On bottom* of this equipment is a label that contains, among other information, a product identifier of [US: TLDDL01BTLDPV00A1]. If requested, this number must be provided to the telephone company.

If this equipment [Enterprise Router] causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If you experience trouble with this equipment, you disconnect it from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning.

Please follow instructions for repairing if any (e.g. battery replacement section); otherwise do not alternate or repair any parts of device except specified.

If the telephone company requests information on what equipment is connected to their lines, inform them of:

- (a) The telephone number that this unit is connected to,
- (b) The ringer equivalence number [01]
- (c) The USOC jack required [RJ11C], and
- (d) The FCC Registration Number [TLD]

Items (b) and (d) are indicated on the label. The ringer equivalence number (REN) is used to determine how many devices can be connected to your telephone line. In most areas, the sum of

the RENs of all devices on any one line should not exceed five (5.0). If too many devices are attached, they may not ring properly.

Service Requirements

In the event of equipment malfunction, all repairs should be performed by our Company or an authorized agent. It is the responsibility of users requiring service to report the need for service to our Company or to one of our authorized agents. Service can be facilitated through our office at:

Company Name: Teldat Corp
Contact Name: Ignacio Loizaga
Address: 15466 Los Gatos Blvd
Suite #109-335
Los Gatos CA 95032
Telephone No: 408 892 9363
Fax No: 408-608-2172
Email: iloizaga@teldat.com

IC Statement

CAN ICES-3 (B)/NMB-3(B)

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

Pour les produits disponibles aux États-Unis / Canada du marché, seul le canal 1 à 11 peuvent être exploités. Sélection d'autres canaux n'est pas possible.

This device and it's antennas(s) must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with IC multi-transmitter product procedures.

Cet appareil et son antenne (s) ne doit pas être co-localisés ou fonctionner en association avec une autre antenne ou transmetteur.

The device could automatically discontinue transmission in case of absence of information to transmit, or operational failure. Note that this is not intended to prohibit transmission of control or signaling information or the use of repetitive codes where required by the technology.

Le dispositif pourrait automatiquement cesser d'émettre en cas d'absence d'informations à transmettre, ou une défaillance opérationnelle. Notez que ce n'est pas l'intention d'interdire la transmission des informations de contrôle ou de signalisation ou l'utilisation de codes répétitifs lorsque requis par la technologie.

The device for the band 5150-5250 MHz is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems.

Les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux.

IMPORTANT NOTE:

IC Radiation Exposure Statement:

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Déclaration d'exposition aux radiations au Canada:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé.

Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

NOTE

For Industry Canada only:

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

This radio transmitter (IC: 11046A-TLDPV00A1) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated.

Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device:

Model	Impedance	Gain	Power
EDA-8709-25GR2-A9	50 Ohm Nominal	2dBi (Typ.)	1W

IC Telecom Statement:

This product meets the applicable Industry Canada technical specifications. /

Le présent matériel est conforme aux spécifications techniques applicables d'Industrie Canada.

The Ringer Equivalence Number (REN) is an indication of the maximum number of devices allowed to be connected to a telephone interface. The termination of an interface may consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices not exceed five.

L'indice d'équivalence de la sonnerie (IES) sert à indiquer le nombre maximal de terminaux qui peuvent être raccordés à une interface téléphonique. La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas cinq.