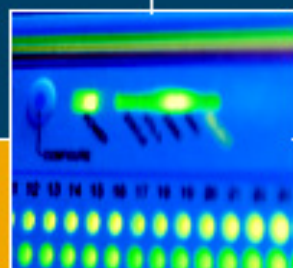# AT-RG613/623TX Residential VoIP Gateway

USER MANUAL

Allied Telesyn

AT-RG613/623 TX - Series Residential VoIP Gateway - User Manual

This User Manual covers the following products:
  AT-RG613TX
  AT-RG623TX

For installation and safety instructions please refer to this User Manual.
For a description of detailed functionality please refer to the Software Reference Manual (available on our website http://www.alliedtelesyn.com from the 'products/residential gateways' menu).

Document Number M613-00002-01 REV D

Contents

1. IMPORTANT SAFETY INSTRUCTIONS

Please observe the following instructions, non-observance could lead to serious injury or even death, through fire or electric shock

Save these instructions

Do not open the unit

Do not open this product except when there is a specific indication in the manual.
To prevent ELECTRIC shock, do not remove the cover.
This unit contains HAZARDOUS VOLTAGES and should only be opened by a trained and qualified technician. To avoid the possibility of ELECTRIC SHOCK, disconnect electric power to the product before connecting or disconnecting the LAN cables.

Figure 1: Do not open

Lightning

DANGER: DO NOT WORK on equipment or CABLES during periods of LIGHTNING ACTIVITY to avoid ELECTRIC SHOCK.

Figure 2: Do not touch during a storm

Gas Leak

Do not use the telephone to report a gas leak in the vicinity of the leak.

Figure 3: Gas Leak
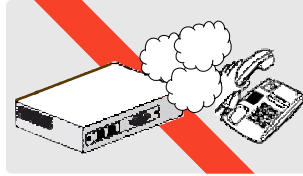
Avoid harmful substances

Be careful not to drop water or any other harmful substance onto the product. This could lead to fire or electric shock. If water or other substances enter the unit, unplug the power and please contact your support centre or sales stores. Do not use this product near water for example near a bathtub, washbowl, kitchen sink, laundry tub in a wet basement or near a swimming pool

Figure 4: Harmful substances

Do not cover air vents

Air vents must not be blocked and must have free access to the ambient air for cooling to prevent fire caused an excessive heating.

Figure 5: Do not cover

Do not place in a wet, dusty, smoky or steamy environment

To avoid the possibility of ELECTRIC SHOCK or FIRE caused by a short in internal circuits, do not place the device in any of the above listed environments.

Figure 6: Pay attention to environmental conditions

Do not use with non- standard plugs or wiring

This could lead to fire, only use with industry standard plugs and wiring suitable for your territory.

Figure 7: Do not use unsuitable plugs

Unplug when installing or moving

to avoid the risk of electric shock.

Figure 8: Unplug

Do not damage the power cable

This could lead to fire or electric shock.

Figure 9: Do not damage power cable

Take care when handling the power cable and plug:

- Do not strain the power cable.

- Do not place near a heater.

- Unplug the power cable using the plug.

Use the power adapter supplied

Only the power adapter supplied with this unit is guaranteed to function correctly with this unit.

Figure 10: Only use the power adapter supplied with this unit.
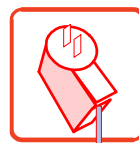
Conditions of use

Do not use or store the device:

- In direct sunlight.

- Near a heater or in a hot place.

- Where there could be a sudden temperature change

- In a damp place or near a liquid such as water. Humidity must be less then 80%.

- In areas subject to a lot of vibration.

- In dusty and/or carpeted areas.

- In the presence of corrosive gases.

Figure 11: Notice of use

Avoid static shock

This product contains parts that are sensitive to static shock. Please avoid touching interface connectors with bare hands.

Figure 12: Static shock danger

Handling

Do not drop the unit, handle with care.

Figure 13: Handling

Product care

Cleaning

Keep the product free from dust and maintain in a clean condition.

Figure 14: Before cleaning

Clean the device with a dry, soft cloth

In case of heavy dirt, clean using a soft, damp cloth with a neutral detergent then dry with a soft cloth.

Figure 15: Cleaning procedures

Do not use following materials for cleaning

oil, cleanser, thinner, petrol, wax, boiled water and powdered soap; please follow the instructions when you use a chemical duster.

Figure 16: Do not use thinner

Attention

All the information in this manual is property of Allied Telesis, please do not copy or reproduce all or part of this manual without permission. The company may change or revise all or part of this manual. It may also change the specification of the product for purposes of improvement without notice.

Emission Statement

CE Marking Warning: This is a class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.
Please install and use it in accordance with this user manual.

Manual version

March 2004 Rev. D

About this manual

Thank you for choosing the AT-RG613/623TX Series Residential VoIP Gateway.

Please read this manual carefully and use the device correctly.
Please see below for the meaning of the icons used in this manual.
"The device", "This product", "AT-RG613", "AT-RG623", "RG613TX", "RG623TX", "RG623" or "RG613" all refer to the Residential VoIP Gateway unit.

Table 1: Icons

Icon	Meaning
	Useful information
	Indication of risk of a serious injury and/or damage to the environment
	As above
	Indication of reference page and information

2. Contents of the package

Figure 17: Contents of the package

RG613/623 TX

Power Adapter

Wall Bracket

User Manual   Warranty Card
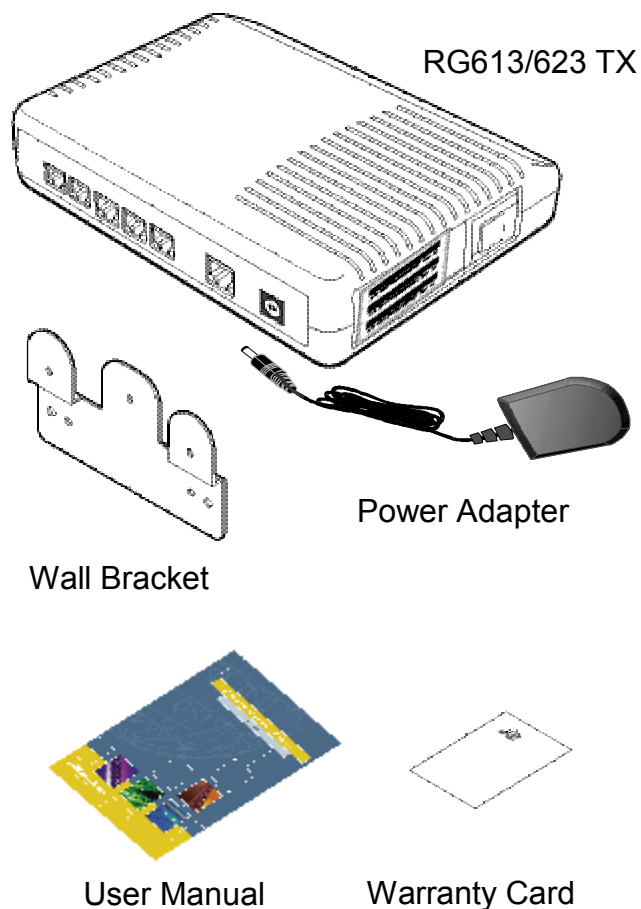
(Notice) The package does not contain screws.

The following items are included with each AT-RG613/623TX. Contact your sales representative if any items are damaged or missing.

- One AT-RG613/623 TX
- One AC/DC power adapter
- One wall bracket
- One AT-RG613/623 TX Series Residential VoIP Gateway User Manual
- One warranty card

3. What can the AT-RG613/623TX do for you?

The AT-RG613/623TX is a Customer Premise Equipment (CPE) designed to be installed in a customer residence, it interfaces with new generation fibre/copper networks designed to support broadband communications.

Using this intelligent equipment, called a "residential gateway", you can use broadband integrated services for telephony, Internet and Internet Video.

The VoIP residential gateway is fitted with a number of ports for connection of telephones, faxes, PC's and a set top box for TV.
Using the internal Ethernet router you can easily build a firewall-protected Local Area Network (LAN) in your home supporting multiple PC's as well as a set top box for TV/video services (see figure below).

Figure 18: LAN connections
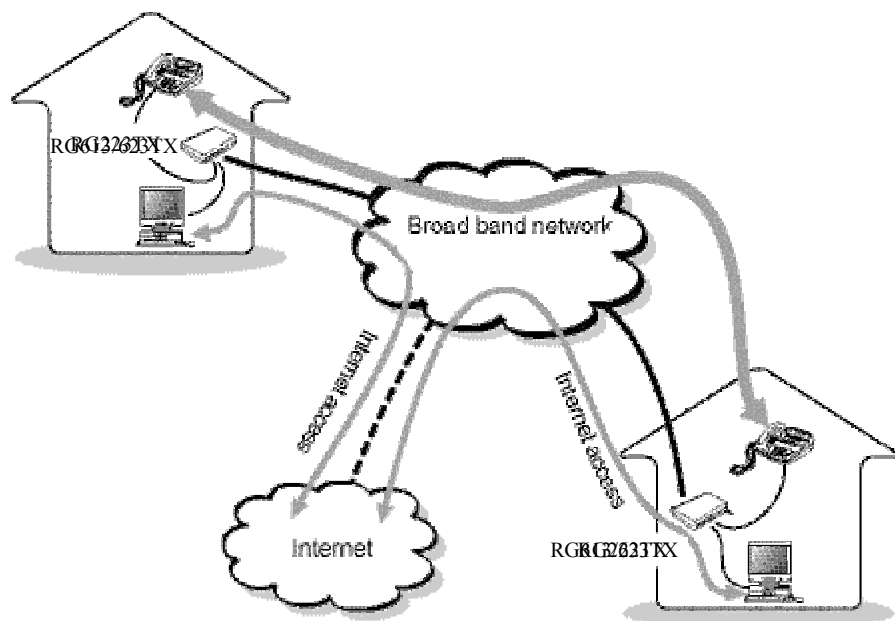
4. Product Details

Top view of Unit

Figure 19: Top view
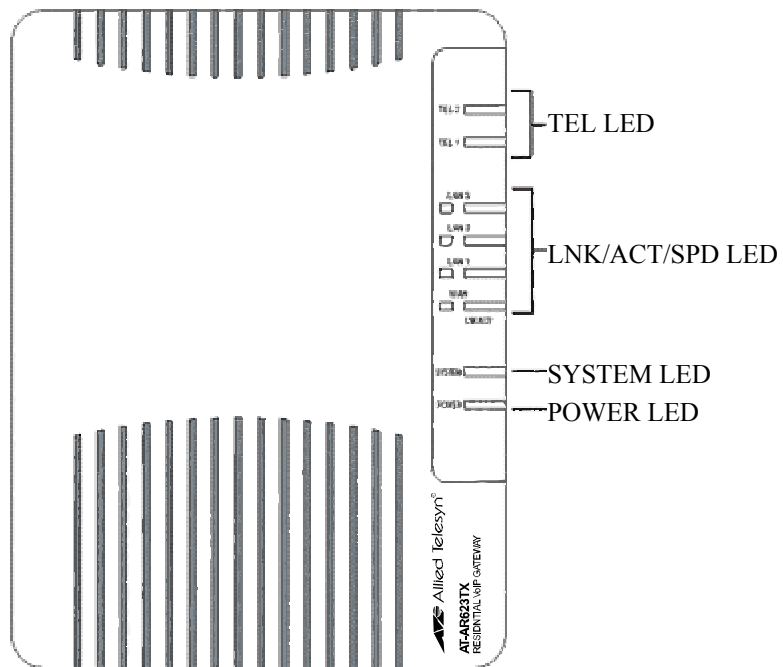
Table 2: TEL LED indications RG613TX

Led	State	Function
TEL	Green light on	LED turns on green when you lift the receiver of the telephone or fax connected to TEL port and remains on during the call.
	Green light flashing	The VoIP network is operating.

Table 3: TEL LED indications RG623TX

Led	State	Function
TEL 1	Green light on	ISDN bearer channel B1 is in use
	Green light flashing	The VoIP network is operating.
TEL 2	Green light on	ISDN bear channel B2 is in use
	Green light flashing	The VoIP network is operating.

Table 4: Ethernet Power/System LED indications RG623TX

LNK/ACT/SPD	Green light on	Establishment of the link as 100 BASE – TX.
	Green light flashing	Transmission and Reception of packets as 100 BASE – TX.
SYSTEM	Orange light on	In case of system error
	Orange light flashing	Power charging
POWER	Green light on	The device is receiving power and the voltage is within the acceptable range

Rear view of unit

Figure 20: Back view AT-RG613TX   Back view AT-RG623TX

- TEL port

- LAN port

- WAN port

- Power cable

- ISDN port

- LAN port

- WAN port

- Power cable
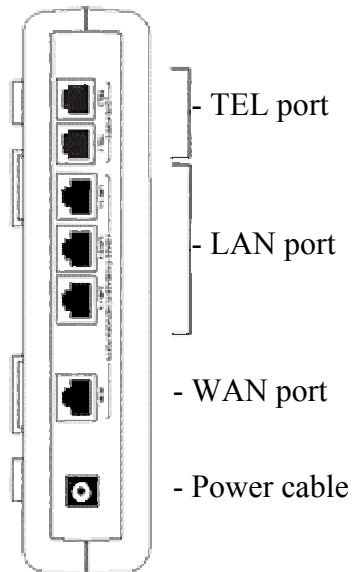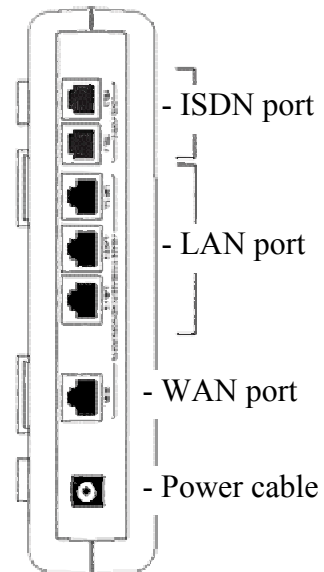
Table 5: Ports description

Port	Function
TEL PORT(RG613)	Connects analog telephone and fax with telephone cord.
ISDN PORT(RG623)	Connects ISDN telephone and fax with telephone cord.
LAN PORT (MDI-X)	Connects computer, HUB and switch with UTP cable.
WAN PORT	Connects UTP or fibre cable from the Wide Area Network (WAN). For Fibre, MTRJ or SC connectors are used.
POWER CABLE	Provides the 12V DC power to this product. This product doesn't have a power switch, you have to plug or unplug the power cable to turn the unit off.

5. Telephones and cables

AT-RG613 - POTS Telephone and Fax Operation

Check if the dial mode is set up for tone mode (T, Tone). If not, set the switch as shown below.

Figure 21: Dial mode setting
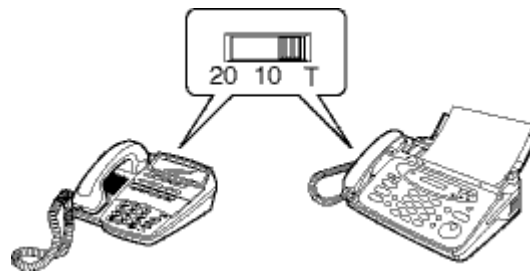
Some models do not have this switch or the possibility to set up the tone mode with a button. In this case please follow the instructions of the telephone and fax used.

AT-RG623TX - ISDN Telephone and Fax Operations

Only telephony equipment designed to use the IDSN network may be connected to the AT-RG623TX.

The connection for ISDN telephony equipment uses the larger RJ45 connector. If the smaller RJ11 telephone cord is connected there will be excess space around the connection.

Telephone cord and UTP cable

There are 2 kinds of user connection cables: telephone cables and Unshielded Twisted Pair (UTP) cables used for data/ISDN.
See Below.

This product does not include any LAN or phone cables. These must be provided by the service provider or end user.

Figure 22: Telephone cable

Note: The telephone cable uses the RJ11 connector

CAUTION: To reduce the risk of fire, use only No. 26AWG or larger telecommunication line cord.

Figure 23: ISDN cable

Use UTP cable category 3 or higher with RJ45 connector

Figure 24: LAN cables

Use UTP cable category 3 or higher on 10Base-T, and UTP cable category 5 or higher on 100BASE-T.

There are two types of LAN cable, straight cable and crossed cable; for the AT-RE613/623, it does not matter which of these types of LAN cable you use. The LAN interfaces on the AT-RG613/623 can autosense whether the cable is straight or crossed.

If you buy a new cable, it is recommended that you choose UTP cable - category 5 or higher.

6. Installing the AT-RG613/623TX

Installation

Before installing the AT-RG613/623TX, please read the safety information "For your Safety" in Chapter 1.

When deciding the location of the device, please observe the following instructions:

- Do not install in direct sunlight, or a damp or dusty place.

- Do not install on an inclined or unstable surface.

- Do not cover air vents on the side or the back of the device.

- Do not install near a TV, radio or mobile phone.

- Do not place anything on top of the product.

- Do not install this product outdoors.

- Do not touch the connector terminals.

Wall Positioning

With the wall bracket in the package, you can hang the device on the wall. Before proceeding you will need to insure that the position chosen makes it possible to:
  a. Connect the UTP cables and AC power cable
  b. View the LED indications on the top of the unit.

You will need the following items to complete the installation of the router:
  - Philips head screw driver
  - 1 – 30 cm x 30cm (1 ft x 1 ft) square section of wall preferably covered with 2 cm plywood (If wall mounting the router)
  - 3 – 3mm x 2.5 cm (1/8in. x 1 inch) screws
  - 3 – 3 drywall anchors if mounting on drywall

Provided in the installation kit:
  - 1 – RG613TX or RG623TX
  - 1 – Wall mount bracket

Wall mounting the RG613/623TX:

1. Using the wall mount bracket as a template drive 3 drywall screws horizontally into the plywood towards the top and to either side of the available space. If plywood is not available, then use the wall mount bracket to mark the 3 hole locations and pre-drill for the drywall anchors, then drive the screws through the holes.

2. Hang the RG613/623TX as described in Figure 26.

Figure 25: Positioning of the wall bracket

The diameter of screw hole is 3.5mm.
Use 3mm x 2.5 cm screws and, if necessary, drywall anchors.
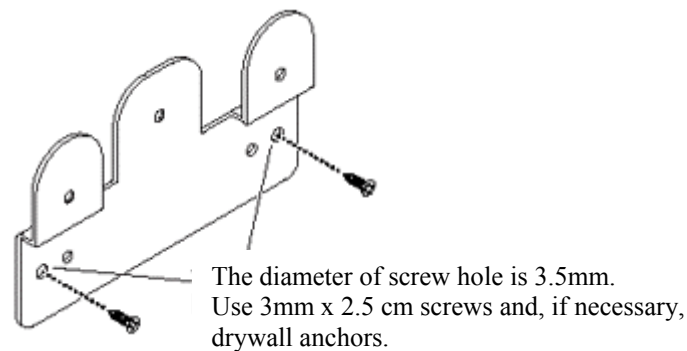
Figure 26: Possible layouts
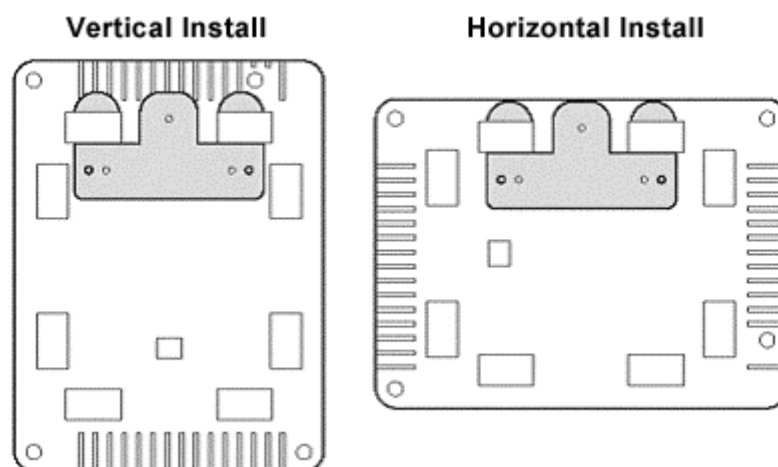
If you install the device in an elevated position, ensure it is securely connected to the wall, if not it may drop and cause injury or it may be damaged itself. Do not install where there may be vibrations, shocks or in an unsuitable place.

When you install this product on the wall it could be damaged if the unit should drop. Please be careful.

Please note that the maximum recommended operating ambient is 40ºC

7.   Connecting the AT-RG613/623TX

AT-RG613TX Connecting the PSTN telephone ports

Connect PSTN (POTS) telephone and PSTN fax units to the TEL ports with the appropriate telephone cords. Push in the plug of the telephone cord to the TEL port until you hear a "click" and make sure it is correctly fixed by pulling the telephone cord lightly.

⚠️   *Connect to TEL 1 when you use only one telephone or fax machine*

Figure 27: Telephone ports connection

Telephone cord (⚠️ min 26AWG)
☞ See p.14
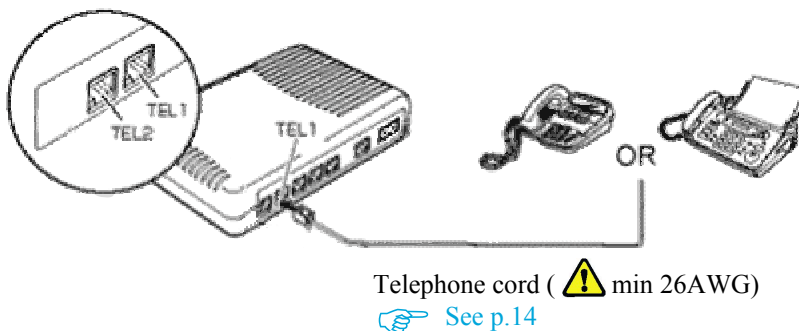
AT-RG623TX Connecting the ISDN ports

Connect ISDN telephone and ISDN fax units to the ISDN ports with the appropriate UTP cable. Push the plug of the UTP cable into the ISDN port until you hear a "click" and make sure it is correctly fixed by pulling the telephone cord lightly.

⚠ *Connect to ISDN 1 when you use only one telephone or fax machine*

Figure 28: ISDN ports connection
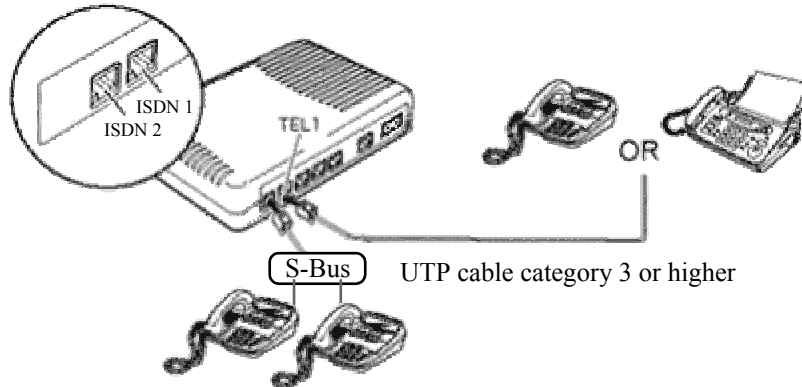
UTP CABLE CONNECTION

To connect devices to the WAN and LAN ports using UTP cables follow the steps below:

1. Ensure that all cables are the right length to reach each device.
2. Plug the UTP cable into the WAN port until you hear a "click" and make sure it is correctly fixed by pulling the UTP cable lightly. In the same way, connect the plug on the other end of the UTP cable to the WAN device.

> ⚠️ *The type of UTP cable (straight cable or crossed cable) depends on the kind of WAN connection device being used (e.g. cable modem / ADSL modem etc.).*

3. If you only need VoIP functions, your connection operation ends here. If you are connecting devices to the LAN port of this product, please follow the procedure as described in Fig 29 below.

Figure 29: UTP cable connections
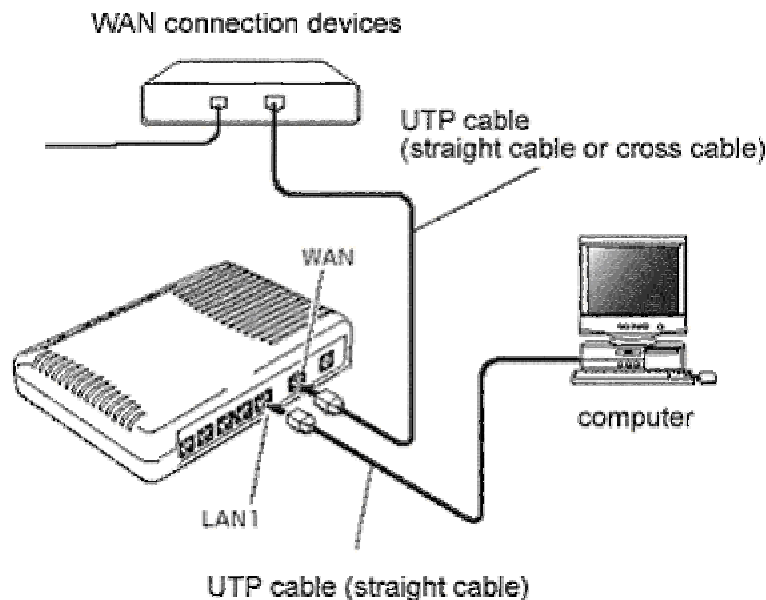
4. Push in the plug of the UTP cable to the LAN port until you hear a "click" and make sure it is correctly fixed by pulling the UTP cable lightly. In the same way connect the plug on the other end of the UTP cable to the network interface card of the computer, or other LAN device.

> ⚠️ *The length of each cable must be less than 100 m.*

DISCONNECTING POWER SUPPLY

This product doesn't have a power switch; it automatically turns on when you connect the power cable.

When you want to turn it off, just unplug the power plug.

Figure 30: Power cable
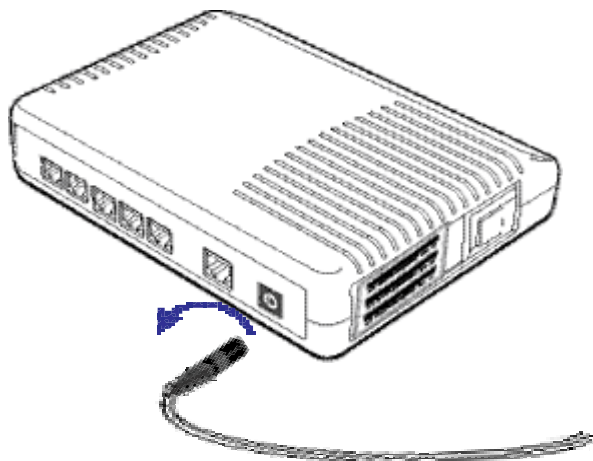
Notice about functions and services

When using the VoIP telephony service there may be some services offered by the standard telephone network that are not available. Similarly, some telephone or fax functions may not be available on the VoIP network. Please contact your VoIP Telephony provider for further details.

Appendix A: Troubleshooting

This Appendix describes some of the more common problems that may occur during AT-RG613/623TX installation and use.
In the event of a problem, please look at the LED indications and then refer to this Appendix.

LED indication

10BASE-T/100BASE-TX Port LED
This indicates the status of the 10BASE-T/100BASE-TX Port.

Table 6: 10BASE-T/100BASE-TX Port LED

LED	Colour	Statement	Detail
LINK/ACT/SPD	Green	light on	Establishment of the link as 10/100 BASE – TX.
		flash	Establishment of the link as 10/100 BASE – TX.
		off	The link is not established.

STATUS LED
This indicates the status of the system.

Table 7: Status Led

LED	Statement	Detail
SYSTEM	Orange light on	An abnormal operating condition.
	Off	The system is working normally.
Power	Green lights on	The device is receiving power and the voltage is within the acceptable range.
	Off	The device is not receiving power.

TEL LED
It indicates the status of telephone.

Table 8: Status Led

LED	Statement	Detail
TEL	Green light on	LED light turns green when you lift the

	receiver of the telephone or fax connected to the TEL ports or you make a call.
Green light flashes	Attached telephone or fax machine is in use.
Off	The attached telephone is not in use.

Fault Finding

- **Is the POWER LED on?**

  If the power LED is off please check if the power cable is not damaged, the power cable is correctly connected and you are using the plug with the correct power voltage.

  Check if the AC plug of the power cable of the product is connected correctly. This product doesn't have a power switch. To turn the unit on or off you have to plug or unplug the power cable.

- **Is the SYSTEM LED orange?**

  If the SYSTEM LED lights up orange, unplug the AC plug and plug it in again after 20 seconds. If you do not resolve the problem, unplug the power plug of this product and contact your supplier

- **Are the LNK/ACT/SPD LEDs on?**

  Check if the power of the connected device is on, check that there are no problems with the network interface cards installed in the attached devices, also check if the cables are correctly connected to the network interface cards and that the correct cable is being used (i.e. straight or crossover).

  Check also if the length of the cable is over the limit. UTP cable must be less than 100 m.

  To connect this product to a computer, you must use a straight cable. To connect this product to a HUB or switch, you must use a crossover cable. Please check if you're using the correct cable.

- **Do you have a problem with the UTP cable?**

  Swap out with a known good cable.

- **Does TEL LED light up when you lift up the receiver?**

  Please ensure that the telephone cable is connected correctly, that the correct cable is being used and that the cable is not damaged.

- **Do you have a problem with the telephone cord?**

  Swap out with a known good telephone cord.

  Check if the setting of the dial mode for the telephone and fax is correct, follow the instructions of the telephone and/or fax device.

☞   *For further information on dial mode set up please refer to Chapter 5.*

  Ensure that there is no problem with the telephone or fax machine.

Appendix B: Technical Specifications

Product Specifications AT-RG613TX

Supported standards	
	IEEE 802.3 10 BASE-T,
	IEEE 802.3u 100 BASE-TX,
	RFC 791, RFC1144, RFC1112, RFC2236, RFC 2516,
	RFC 1334, RFC 1994, RFC 1631, RFC 2131,
	RFC 3261, RFC 1350, RFC 318, RFC 826,
	RTP/RTCP, H.323 4.0, MGCP/NCS 1.0, SNMP v1
Interface	
WAN port	1 10/100BASE-TX (8 pin RJ45 connector)
LAN port	3 10/100BASE-TX (8 pin RJ45 connector)
TEL port	2 FXS (6 pin RJ11 connector)
Power	
AC Input voltage	AC100-240V
Standard Frequency	50-60Hz
AC Input current	0.1A (240V)
Average power	9.7W (Max.9.8W)
Average heat	8.3kcal/h (Max. 8.4kcal/h)
Environment condition	
Storage Temperature	-20° – 40°C
Humidity	Less than 95% (non condensing)
Operating Temperature	0° - 40° C
Humidity	Less than 80% (non condensing)
Size (with no projection)	
	200(W) x 150 (D) x48 (H) mm
Weight	
	510g
MAC address table size	
	1024
Memory Capacity	
RAM memory	16Mbyte
Flash memory	4Mbyte
Product Certification	
	CE, FCC, UL

Compliances	
	IEC60950, UL1950, EN 60950
	EN55022, EN61000-3-2, EN61000-3-3, EN55024
	FCC CFR 47 Part 15 Sub B

Product Specifications AT-RG623TX

Supported standards	
	IEEE 802.3 10 BASE-T,
	IEEE 802.3u 100 BASE-TX,
	RFC 791, RFC1144, RFC1112, RFC2236, RFC 2516,
	RFC 1334, RFC 1994, RFC 1631, RFC 2131,
	RFC 3261, RFC 1350, RFC 318, RFC 826,
	RTP/RTCP, H.323 4.0, MGCP/NCS 1.0, SNMP v1,
	I.430, Q.921, Q.931
Interface	
WAN port	1 10/100BASE-TX (8 pin RJ45 connector)
LAN port	3 10/100BASE-TX (8 pin RJ45 connector)
TEL port	1 ISDN S/T (8 pin RJ45 connector)
Power	
AC Input voltage	AC100-240V
Standard Frequency	50-60Hz
AC Input current	0.1A (240V)
Average power	7.7W (Max.8W)
Average heat	11.28kcal/h (Max. 11.39kcal/h)
Environment condition	
Storage Temperature	-20° – 40°C
Humidity	Less than 95% (non condensing)
Operating Temperature	0° - 40° C
Humidity	Less than 80% (non condensing)
Size (with no projection)	
	200(W) x 150 (D) x48 (H) mm
Weight	
	510g
MAC address table size	
	1024
Memory Capacity	
RAM memory	16Mbyte
Flash memory	4Mbyte
Product Certification	
	CE
Compliances	
	IEC60950, EN 60950
	EN55022, EN61000-3-2, EN61000-3-3, EN55024

Appendix C: Contact information

In the event of any problem please contact your service provider or installer.