YC-201 User's Manual

(VDSL Modem)

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YoungWoo Telecom Co.,LTD

Thank you for buying our YC-201 VDSL Modem.

Before using it, please read carefully this user's manual to use superhighway Internet service effectively.

CLASS B

This equipment, as EMI compatible equipment for home use, can be utilized at all areas including residential areas.

Before You Begin

This manual is intended for general users of YC-201 VDSL Modem.

This manual describes the introduction and installation of YC-201 VDSL Modem, network connection, Internet access over IP, and troubleshooting).

Not only the first users of VDSL modem such as YC-201 VDSL Modem but also those that much handled products similar to it must carefully read the contents of this manual before installing and using YC-201 VDSL Modem.

If there occurs any problem in the course of using YC-201 VDSL Modem including product damage, please report the fact to VDSL service provider.

Organization

Each chapter of YC-201 VDSL Modem User's Manual describes:

A Chapter 1 'Introduction' introduces the main function of YC-201 VDSL Modem and the method of using it and describes hardware configuration and specifications.

B Chapter 2 'Before You Begin' describes matters that users should be well aware of before installing YC-201 VDSL Modem.

C Chapter 3 'Installing YC-201 VDSL Modem' introduces environment where YC-201 VDSL Modem can be installed, and describes the method of actually installing products and connecting it to network.

D Chapter 4 'Accessing the Internet via YC-201 VDSL Modem' describes the method of installing and deleting emulator and accessing and disconnecting network at each PC that uses Windows 95, 98, 2000, NT as operating system.

E Appendix A 'Troubleshooting' presents problems that could occur upon use of YC-201 VDSL Modem and the troubleshooting.

F Appendix B 'Windows 95/98 Telephone Access Networking error Code' describes the code of errors that could occur in attempting telephone access networking in Windows 95 and 98, their meaning, and solutions of them.

G Appendix D 'Terminology' describes useful terms in using YC-201 VDSL Modem.

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CAUTION Appendix A is used when installation personnel or maintenance personnel of Korea Telecom, a VDSL service provider, install the products and maintain them. Therefore, general users should not refer to these contents to perform jobs, preventing problems from occurring in the products.

NOTE : FCC

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 interface 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 or more 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.

CAUTION: Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment

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Chapter 1 Introduction

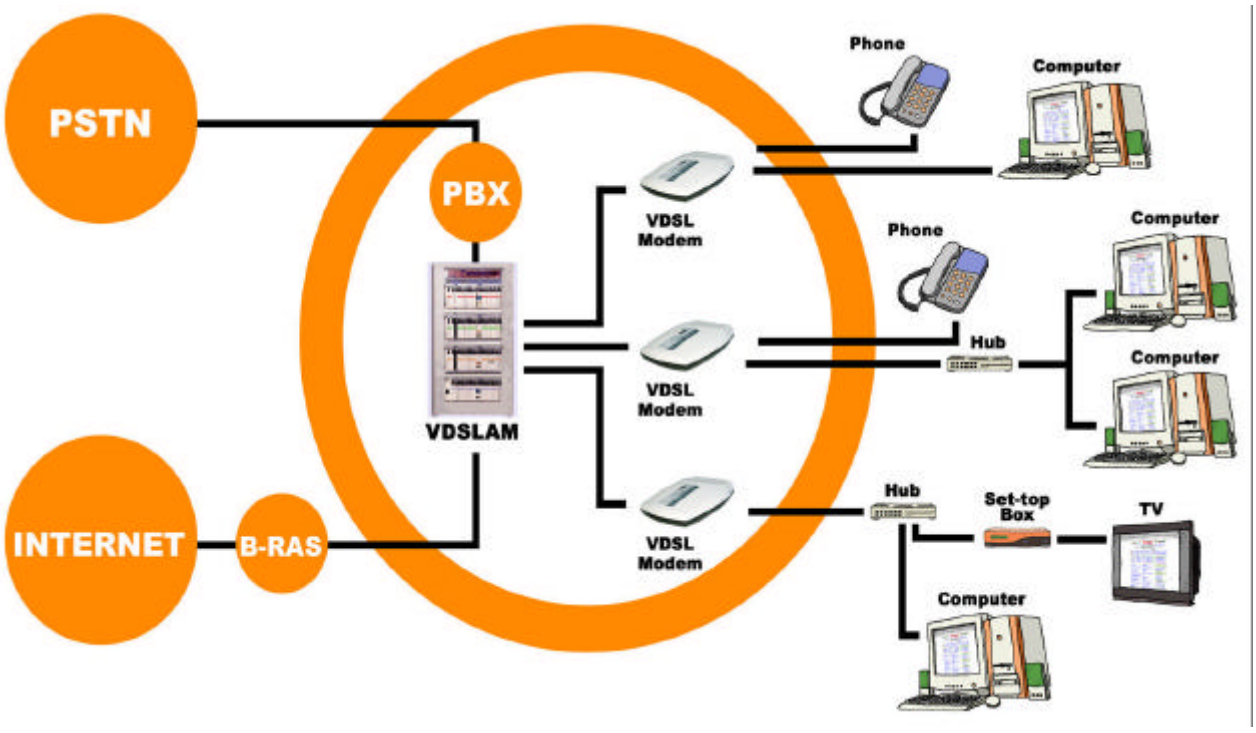
VDSL : Very High-bit rate Digital Subscriber Line

Through this technology, an operator offers multi-megabyte service to subscribers by existing copper-fiber infrastructure, and current VDSL modem provides the following according to the length of lines and modem configuration.

		Symmetric	Asymmetric
Speed	**Upload**	10~13Mbps	13Mbps
	Download	10~13Mbps	52Mbps
Transmission Distance		0~1.5Km	0~4.5Km

<Table 1> YC-201 VDSL Modem Speed and Transmission Distance

Further, it is so designed as to enable optimum service within transmission distance of 1.2Km via telephone line, and VDSL was configured in hybrid. It uses fiber from central office (switch) to street curb or ONU(Optical Network Unit) of apartment and building, and utilizes existing telephone line to the extent of indoor subscriber device.



<Figure 1> VDSL Service Network Configuration Diagram

This chapter introduces the main function of YC-201 VDSL modem and the method of using it, and describes HW configuration and specifications. The organization of this chapter is as follows:

1. Introduction of YC-201 VDSL modem
2. Name and function of each part
3. YC-201 VDSL modem specifications

1 Introduction of YC-201 VDSL modem

<Figure 2 > YC-201 VDSL Modem

With YC-201 VDSL modem, you can connect PC to the Internet or other multimedia service network by using existing PSTN.

YC-201 VDSL modem provides superhighway access and enables use of telephone during its use unlike existing dial-up modem.

YC-201 VDSL modem provides the following functions:

A Various Applications

- YC-201 VDSL modem provides various VDSL applications such as Internet access, interactive communication, e-mail, file transfer, data download and upload, etc.

B Powerful network management function

- YC-201 VDSL modem is a terminal and interworks with the host of the district central office.

Therefore, the central office can offer subscriber network management service.

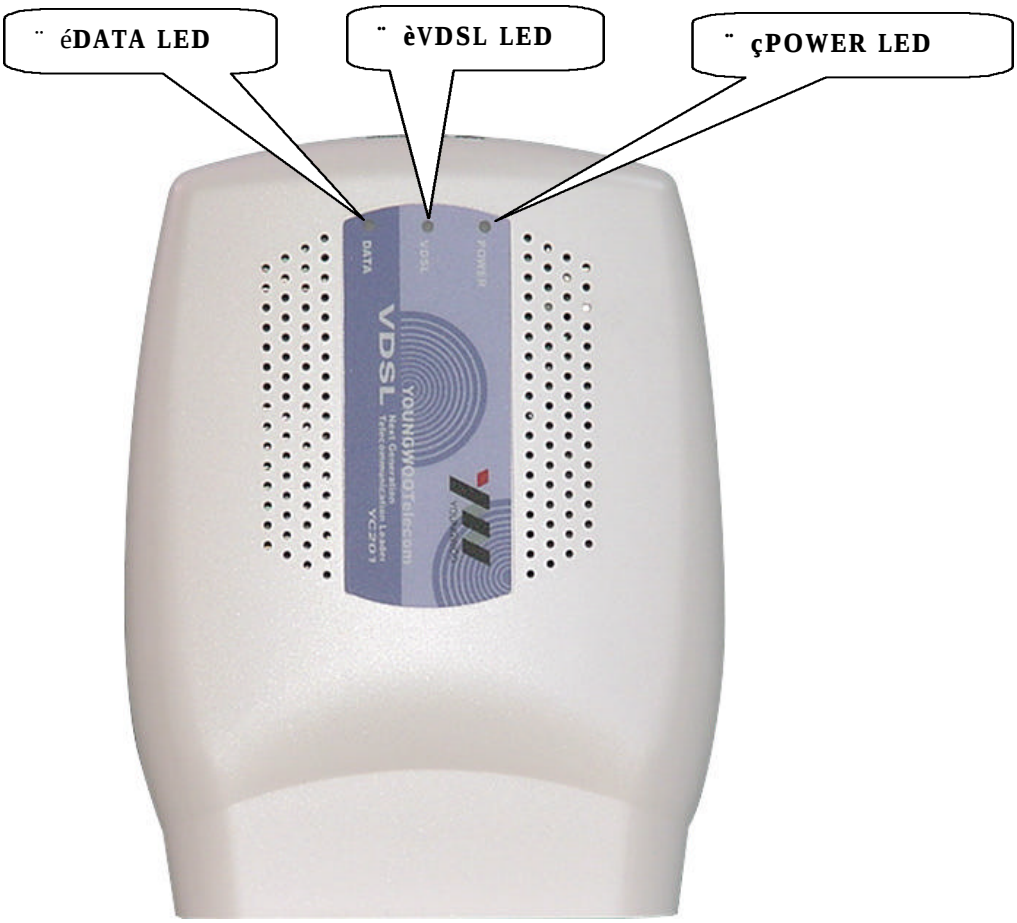
C Easy installation

- YC-201 VDSL modem is easy to install and general users can easily access ISP and get Internet service.

D Management function of web environment

- **YC-201 VDSL Modem** enables direct Internet connection, monitors the operation of the modem via serial port and telnet and can change setup.

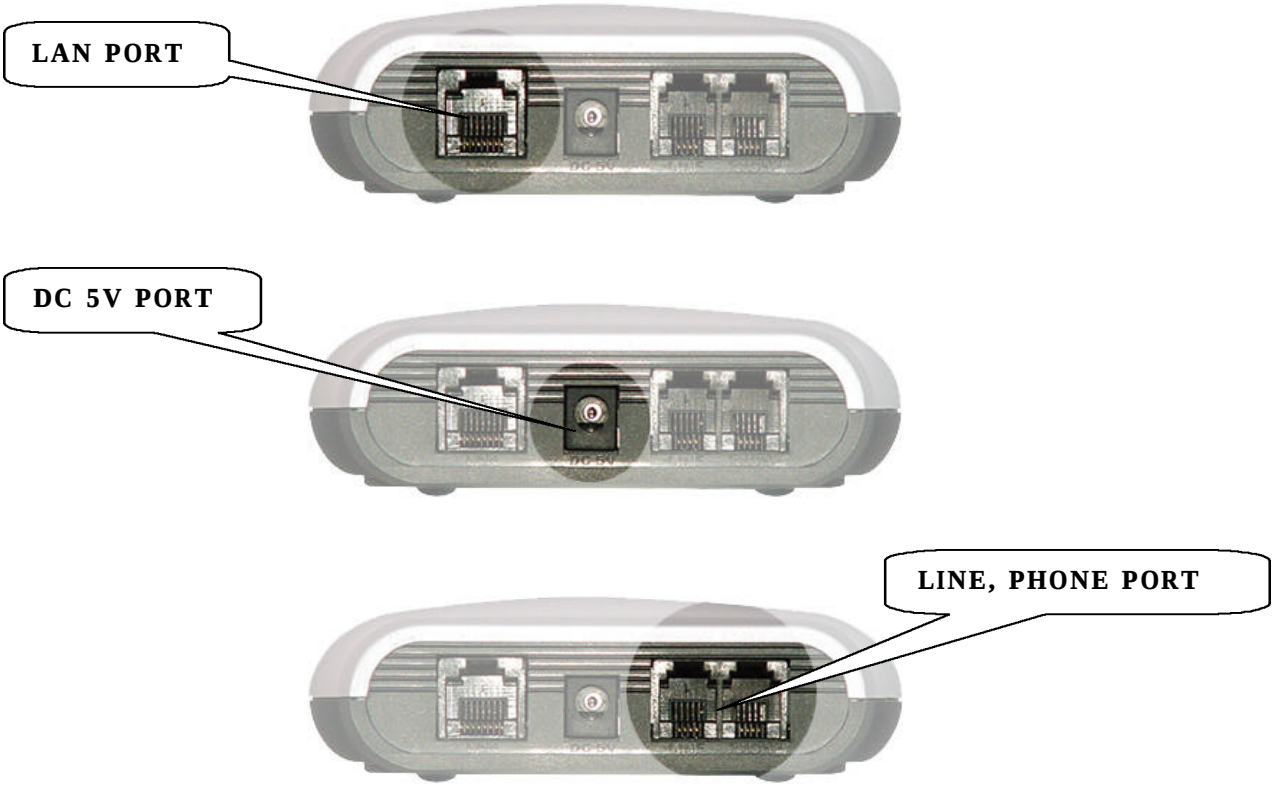
2 Name and function of YC-201 VDSL



<Figure 3> Front View of YC-201 VDSL Modem

Location	Label	Color	Function
¨ ç	POWER	Green	On while AC power is normally input.
¨ è	VDSL	Green	On while VDSL host of central office is connected.
¨ é	DATA	Green	Blink while sending and receiving data with VDSL host of central office.

<Table 1> Function of each LED of YC-201 VDSL modem



<Figure 4> Rear View of YC-201 VDSL Modem

Location	Label	Port	Function
Left	LAN	LAN port	This port uses UTP Category-3, 4, 5 Straight-through cable to connect to LAN card of PC. It supports a speed of 10/100Mbps.
Center	DC 5V	Power input port	Connects power (AC 110V/220V, DC5V Adaptor) to VDSL modem.
Right	LINE	VDSL line port	From phone socket installed on the wall, RJ-11 phone cable is connected, and VDSL data are input or output.
Right	PHONE	Phone port	Connects to phones.

<Table 2> Function of YC-201 VDSL Modem Port

3 YC-201 VDSL Modem Specifications

Item	Specifications
Product spec.	Size: 108.00(width) * 140.00(length) * 32.35(height) mm Weight: 1.2Kg(modem, power supply device, and cable included)
Operating temperature	0~50 °C
Power	Input voltage: AC 110/220V, DC 5V Frequency: 50 ~ 60 Hz Power consumption: Max. 1A
Applied standards	ANSI T1E1.4, VDSL Coalition, FSAN
Frequency band used	0.9 ~ 3.5Mhz(Down), 4.0 ~ 7.9Mhz(Up)
Modulation method	QAM (Quadrature Amplitude Modulation) conversion : QAM4 ~ QAM256

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Transmission rate	Symmetrical data rate : 0.5Mbps ~ 13Mbps. Asymmetrical data rate : 0.5 ~ 52Mbps.
Transmission distance	Symmetrical : 0~1.5Km. Asymmetrical : 0~4.5Km
Error detection	Reed-Solomon Forward Error Correction(FEC).
Multiplexing	FDD Duplex
Transmission Power	11.5dbm
PC interface	10/100 Base-T LAN

<Table 3> YC-201 VDSL Modem Specifications

Chapter 2 Before Installation

This chapter describes matters that users should be full aware of before installing the product. Before you install the product, you must read the contents of this chapter, and should install the product always in consideration of the contents of this chapter.

The organization of this chapter is as follows:

1. Safety checkup
2. Before installation
3. Cable preparation

1 Safety checkup

When installing or using **YC-201 VDSL Modem,** you must check up the following matters:

A Safety checkup related to electricity

- Users should not directly remove/attach or disassemble/assemble the cover of the product. In particular, if you do so while the power is On, it might be dangerous.
  - Check whether there is a possibility of danger at the installation space. Be sure to check if there are wet floor or ungrounded power extension cable, worn-out power code, ungrounded floor, etc.

B Installation space checkup

- Electronic goods generate heat in operation. If the installation place does not allow appropriate air circulation, the product may not normally operate due to generated heat. Check whether air circulation of the installation place is well done.
- Check if power supplied to the installation place is clean. If power with lots of spark or noise is supplied, power adjustment device should be installed.

2 Before installation

Before installing **YC-201 VDSL Modem**, check up the following matters:

A Telephone network service

- **YC-201 VDSL Modem** should be installed at places to which telephone network service is offered.
  - For subscribers using the current phone, they can use the phone line as it is, and if there is no phone line used, you should have new phone line installed at the district central office.
- Phone network service should support **YC-201 VDSL Modem** connection.

B Not all phone network services provide VDSL application to subscribers. By asking if the district central office offers such services in advance, subscribe to VDSL service at your local central office.

C PC specification check

- To have **YC-201 VDSL Modem** connected to PC, first, PC should have LAN card (10/100Base-T) installed. LAN card can be purchased at your PC distributor.

3 Cable Preparation

A Before network connection, first, prepare cables to be used upon network access. Upon connection of **YC-201 VDSL Modem** to the network, the following types of cables are necessary for each port.

Port	Cables used
Phone line port (PHONE)	One RJ-11 phone cable
LAN port(10/100Base-T)	RJ-45 UTP Category-3,4,5 Straight-through cable

<Table 4> Cables used for YC-201 VDSL Modem

B RJ-11 phone cable: Connect one side of RJ-11 phone cable to phone line port (PHONE) at the back side of **YC-201 VDSL Modem** and connect other side to phone. Also, connect phone line from existing wall to VDSL LINE Port.

C RJ-45 UTP LAN cable: Connect one jack of RJ-45 UTP LAN cable to LAN port (10/100Base-T) at the back of **YC-201 VDSL Modem** and connect other jack to LAN card of PC.

CAUTION Although cables look same, the type of cables and internal pin connection can be different. Therefore, you must attach a label to cables together used with YC-201 VDSL Modem to avoid them to be mixed with those used by other products.

Chapter 3 Installing YC-201 VDSL Modem

This chapter introduces environment where **YC-201 VDSL Modem** is to be installed and describes the method of actually installing the product and connecting it to the network.

The organization of this chapter is as follows:

1. Installation environment
2. Unpacking and checking the contents
3. Modem installation

1 Installation environment

Let's see installation environment to be set up in order to safely install and use YC-201 VDSL Modem.

A **YC-201 VDSL Modem** should have constant temperature and humidity and the environment scope is as follows:

- Operating temperature: within 0~50 °C
- Relative humidity: 10% ~ 90%(upon non-condensation)
- Power consumption: 2 Watts(max.)
- Input voltage: AC 110/220V, DC 5V
- Frequency: 50/60Hz

CAUTION In case of input voltage upon system operation, voltage variation range should be within 5% of the regulated voltage, and power outlet must be grounded. Do not use electric appliances such as hair dryer, iron, refrigerator, etc. together with the outlet of the power connector of YC-201 VDSL Modem. For stable power supply, use AVR(Automatic Voltage Regulator).

2 Unpacking and checking the contents

After purchasing YC-201 VDSL Modem package, unpack it and check if the following contents are all included.

A 1 set of YC-201 VDSL Modem

B 1 copy of User's Manual

C 1EA of RJ-45 UTP Ethernet Cable

D 1EA of RJ-11 Phone Cable

E 1EA of Power Adaptor or Power Cable

<Figure 5> Contents when unpacked

3 Modem Installation

Let's see how to configure networks by using **YC-201 VDSL Modem**.

The procedure of network configuration is as follows:

- Drawing network configuration diagram
- Unplugging power code
- Connecting modem to PC Ethernet Cable
- Connecting VDSL LINE to modem
- Connecting phone line to modem
- Connecting power to modem
- Checking the specification, operation environment, and connection status of PC

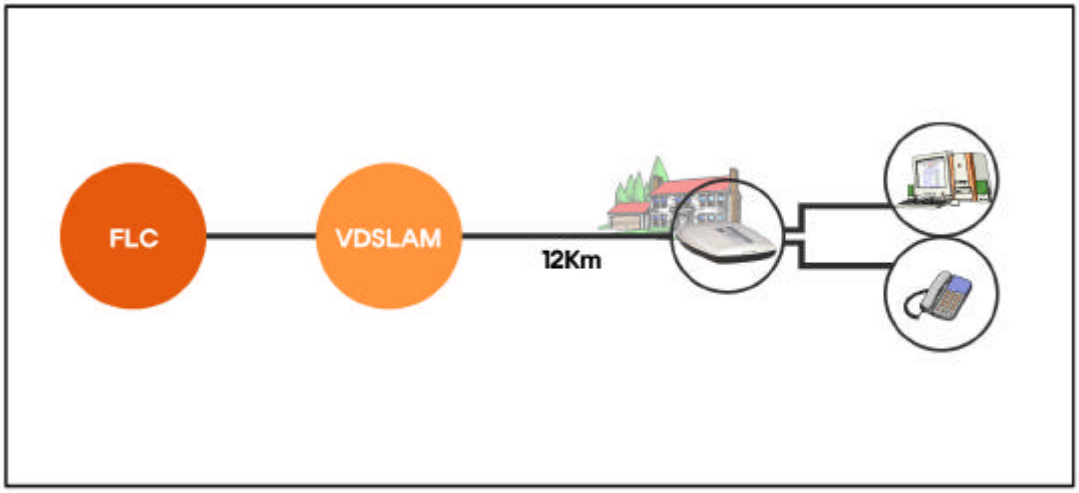
The following are detailed description of it for each step.

Drawing network configuration diagram

First, draw the configuration diagram of a network to configure through the use of **YC-201 VDSL Modem**. Upon drawing of network configuration diagram, you must consider the following matters:

- Where is YC-201 VDSL Modem used?
- Are you going to use YC-201 VDSL Modem together with phone?
- Were PC, phone, network cable, etc. prepared?

- The following figure is an example of the connection of YC-201 VDSL Modem to PC, phone, etc. By referring to it, draw a configuration diagram in consideration of user's intention.



<Figure 6> Network Configuration Diagram

Unplugging power code

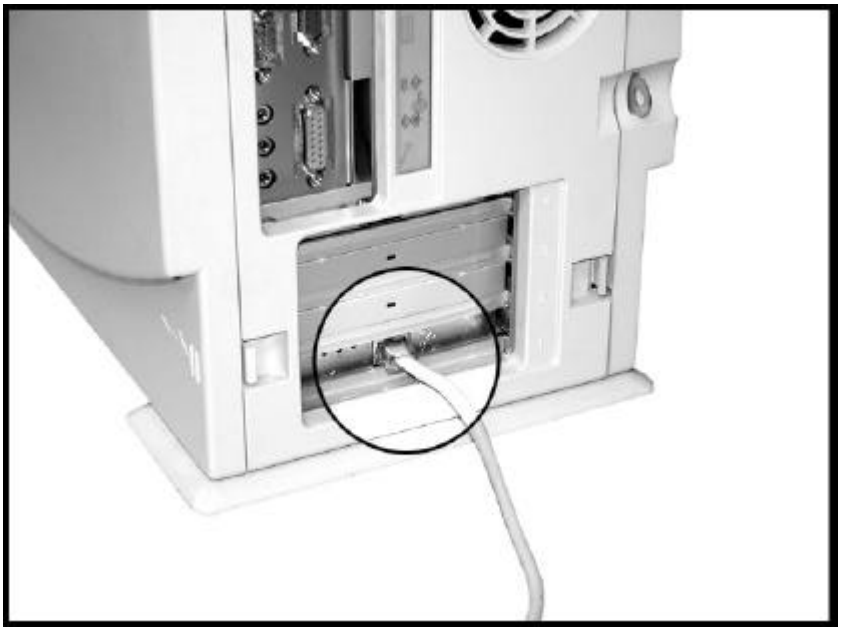
If power is supplied to **YC-201 VDSL Modem**, plug out the jack of corresponding adaptor from the power input port and block the power before connecting it to other device.

CAUTION Power adaptor shall comply with corresponding standards, and in case of using an adaptor with other specifications, there is a danger of shortcut or fire. So, users must use a standard adaptor, and if there occurs a problem in the adaptor, immediately report the fact to our service center or VDSL service provider.

<Figure 7> Unplugging Power Code

Connecting modem to PC Ethernet Cable

Connect one side of RJ-45, UTP LAN cable to the LAN port of **YC-201 VDSL Modem** (10/100Base-T), and connect other jack to the LAN card mounted on PC.



<Figure 8> Connecting Ethernet Cable to PC

<Figure 9> Connecting Ethernet Cable to Modem

NOTE	PC to connect to **YC-201 VDSL Modem** should have 10Mbps or 10/100Mbps LAN card mounted. See User's Manual provided together with LAN card for the method of installing and configuring LAN card in PC.

Connecting VDSL LINE to modem

In the following procedure, connect VDSL LINE to modem.

Connect the phone line, which was disconnected from the existing phone, to the line port of **YC-201 VDSL Modem**.

<Figure 10> Connecting phone line to modem

Connecting phone line to modem

First, plug out existing phone line from currently used phone and then connect RJ-11 phone cable provided with the product to the phone port of the modem and connect other side to phone.

<Figure 11> Connecting phone line to modem

Connecting power to modem

Connect power adaptor to power input port (DC 5V) of **YC-201 VDSL Modem** and connect the adaptor to the outlet.

<Figure 12> Connecting Power Code

Checking PC specifications, operating environment and connection status.

To connect **YC-201 VDSL Modem** to PC for use, the PC should have the Ethernet card of 10Base-T or 10/100 Base-T installed and check if Microsoft Windows95/98 was installed.

- Setting up PC operating environment
- If the installation of **YC-201 VDSL Modem** and PC is completed, activate control panel/network configuration program and set up service type, IP address to **YC-201 VDSL Modem** to use superhighway Internet service. As this is Operator's Manual, only **YC-201 VDSL Modem** installation personnel can use it.
- Checking modem power connection status
- Supply power to **YC-201 VDSL Modem.** If POWER LED in front of the modem is ON, it is normal.
- Checking VDSL LINE connection status
- After power was supplied to **YC-201 VDSL Modem**, if within several seconds, VDSL LED is ON, it means that VDSL LINE was normally connected.
- Checking Ethernet Cable Connection Status between modem and PC
- If Ethernet LED inside of **YC-201 VDSL Modem** is ON, it is normal.

¢ Ï This LED requires frame dismantling. To check the connection status, user should note this. If green LED of PC LAN Card is ON, it is normal. If LED is not switched ON, do not dismantle the frame and report the fact to **VDSL service provider**.

- Checking phone connection status
- Upon off-hook, if a normal tone goes off, there is no cross during a call, and a call condition is good, it is a good connection.

Chapter 4 Internet Access via YC-201 VDSL Modem

YC-201 VDSL Modem applies to the operation system such as Microsoft Windows or Linux or Macintosh System. This chapter describes, in detail, the method of installing and removing modem in PC that uses Windows 95/98, 2000 as OS and the method of accessing and disconnecting the Internet.

The organization of this chapter is as follows:

A Checkup before installing **YC-201 VDSL Modem**

B About **YC-201 VDSL Modem**

C System Specifications for the installation of **YC-201 VDSL Modem**

D Viewing **YC-201 VDSL Modem** network information

E Internet Access via **YC-201 VDSL Modem**

F Internet Disconnection via **YC-201 VDSL Modem**

G Troubleshooting

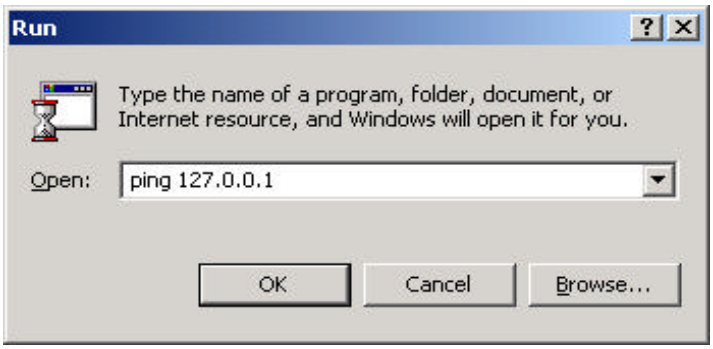
1 Checkup before YC-201 VDSL Modem installation

This chapter describes the function of the operator menu of the modem used by VDSL service provider. General subscribers are not allowed to use this menu without prior agreement with VDSL service provider. If you disregard the fact, it may cause a trouble in superhighway Internet service.

If you want to normally use superhighway Internet service and modem operator menu via **YC-201 VDSL Modem**, then configure network information of PC connected to **YC-201 VDSL Modem** via Ethernet cables as follows:

A **If you connect YC-201 VDSL Modem** and switches on it, the modem runs by automatically sending and receiving data to/from corresponding VDSLAM. If the modem normally operates, the installer should check up the following status:

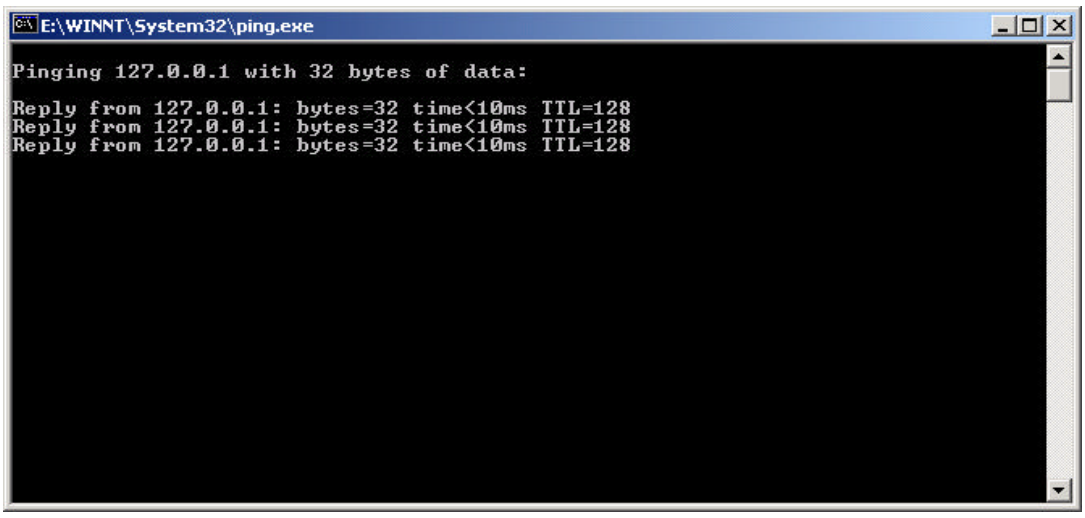
In the display screen, press [Start] ➔ [Run].



<Figure 13> PING Execution Command

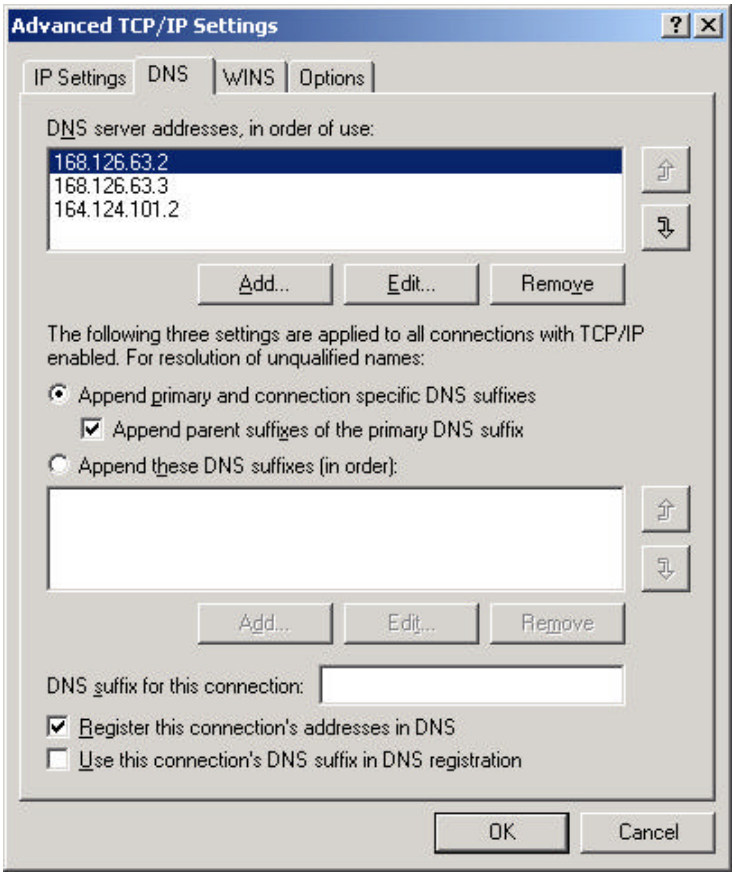
Execute PING 127.0.0.1 and check up if LAN card normally operates.

If it normally operates, the following window is displayed.



<Figure 14> PING TEST Window in DOS Window

Execute PING TEST to the extent of DNS 127.0.0.1 server and check if the network is normal to the extent of data of **VDSL service provider** (KT).

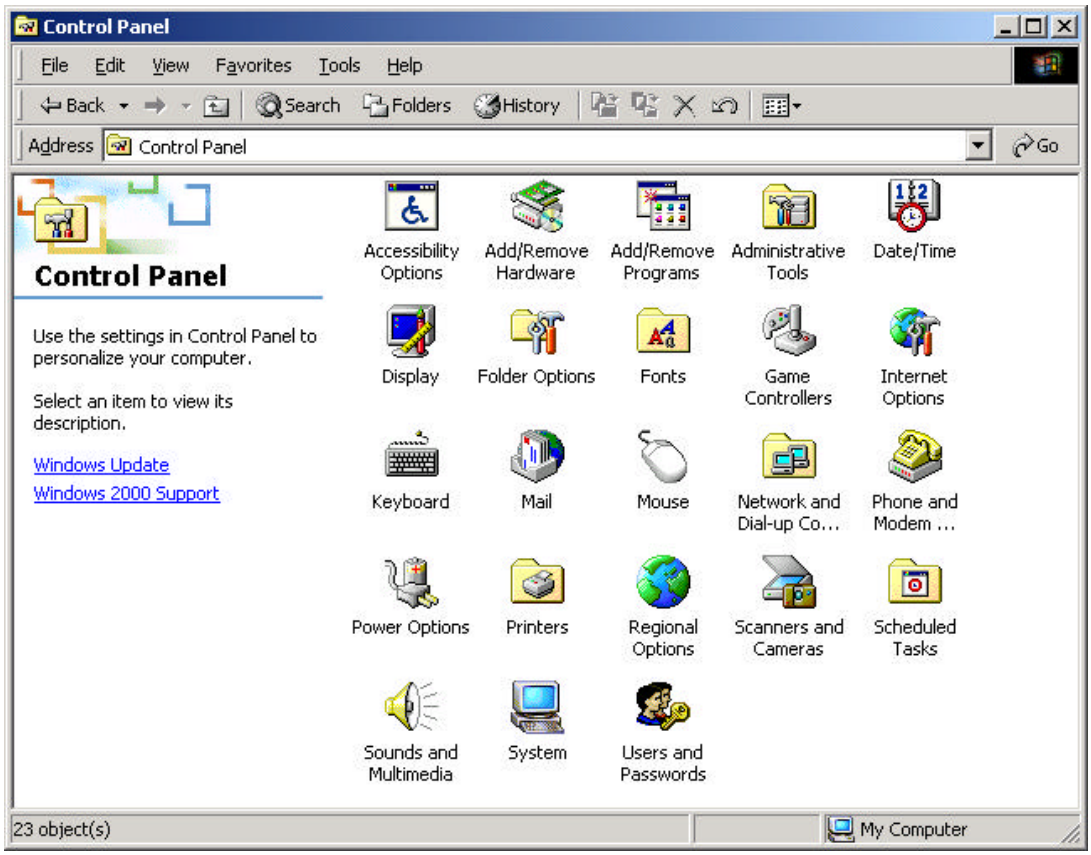


<Figure 15> DNS Setup Window of TCP/IP Registration

B TCP/IP Setup

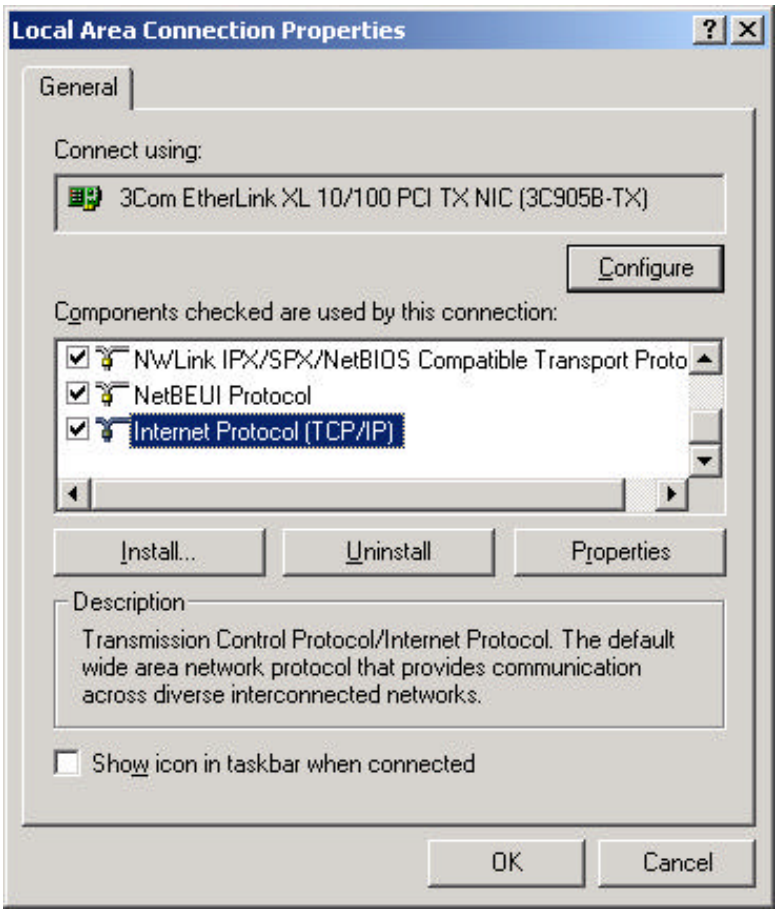
If the modem is registered, set up network environment to access the Internet as follows. In the display screen, choose [My Computer] ➔ [Control Panel] ➔ [Network].

<Figure 16> My Computer



<Figure 17> Control Panel

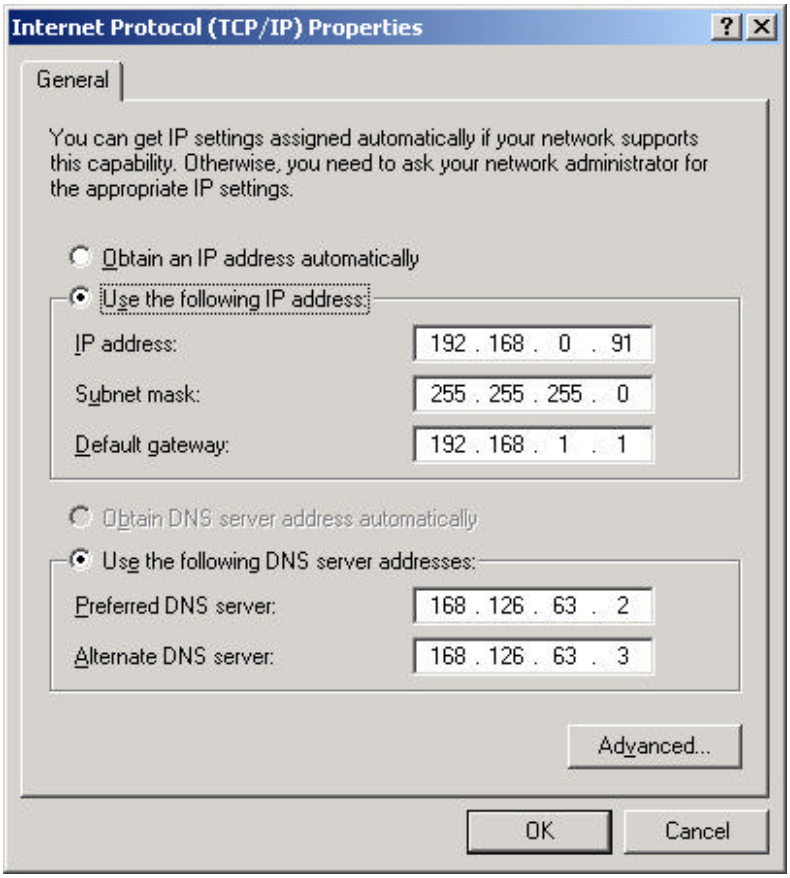
Before installing **YC-201 VDSL Modem,** in Start ➔ Setup ➔ Control Panel of the display screen, choose “Network” icon and then in “Network Configuration” list, check if [Microsoft Network Client] and [TCP/IP] were set up.



<Figure 18> Microsoft Network Client

[Microsoft Network Client] and [TCP/IP] will be automatically configured if LAN card is successfully installed. If not configured, set up LAN card again. In [TCP/IP], input next registration information.

Regardless of home use and office use, in IP address menu, choose [Auto IP Address assignment] to automatically get IP from DHCP server.



<Figure 19> Microsoft TCP/IP

Once LAN card is installed, the following window is displayed:

<Figure 20> System Setup Change

C **If YC-201 VDSL Modem** and LAN card were installed and TCP/IP was set up, the installer should end the installation and sign for [Installation Confirmation Document] and [Modem Rental Agreement].

The installer demands payment of installation cost after signing for Installation Confirmation Document and Rental Agreement.

The installation confirmation document and rental agreement are sent to the main office of **VDSL service provider** for opening and from the point of opening, service and charging start.

If [System Setup Change] window is displayed, choose "Yes(Y)" to apply changed network configuration to PC.

2 About YC-201 VDSL Modem

YC-201 VDSL Modem enables high-speed network service such as VDSL by IP method in Windows 95/98, 2000, Linux, or Mac OS, etc.

The advantages of YC-201 VDSL Modem include:

A Runs in various OSs and systems. (Windows 95/98, 2000, NT, Linux, Mac OS)

B Perfectly compatible with LAN cards of various companies.

C Supports detailed network statistics information and monitoring function.

D Auto connection and disconnection enabled.

3 System Specifications for YC-201 VDSL Modem Installation

HW Specifications

If you want to install and use **YC-201 VDSL Modem,** prepare PC with the following specifications:

A Pentium class or above

B Main memory 16M or above

C Hard disk space 4MB or above

D LAN card compatible with Microsoft more than NDIS 3.0

OS spec.

A In case of using Windows as OS, the following network components should be installed by type:

OS / Network components	Windows 95/98/2000	Windows NT
Client	MS network client	Remote access service
Adaptor	10/100Mbps LAN Adaptor	10/100Mbps LAN Adaptor
Protocol	TCP/IP	TCP/IP

<Table 5> Network Components to be installed

Network access status setup

If you access the Internet via **YC-201 VDSL Modem,** you can check the current access status through network access status icon to be added to the work indication line of the display screen and see various network information.

4 Viewing Network Information

A If you double-click network access status indication icon added to the work indication line, the following <Connected to> window that shows network access status is displayed.

- Each item in <Connected to> window means the following network information:
- Connected on: Network access time.
- Connection: Pass time after network access.
- Activity: Shows data transmission status through network (Tx, Rx).

5 Internet Access

Through various available Internet access programs, you can directly access the Internet. After accessing the Internet, execute the browser that you want and use Internet service.

<Figure 22> Various Web Browser Window 1

<Figure 23> Various Web Browser Window 2

6 Internet Disconnection

To disconnect the Internet, perform the following procedures:

A On the menu of web browser, execute File ➔ Close, first.

B Right-click the mouse network access status icon in the work indication line of the display screen.

C Then, the following menu is displayed, and only to disconnect the Internet, on the menu, click on Disconnect.

D Simultaneously with disconnecting the Internet, click on Exit to end **YC-201 VDSL Modem**.

NOTE If you end the system or power off while connected to the Internet, there may occur an error when you restart the system and access the Internet. In this case, contact **VDSL service provider**.

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7 Troubleshooting

If there occurs a problem in installing or using **YC-201 VDSL Modem,** then check if it is related to the following description and attempt to solve the problem according to the description. If the problem continues, see Appendix A or contact **VDSL service provider**.

Problem upon installation

Q. Upon installation of **YC-201 VDSL Modem,** "Unable to Connect to Server" is displayed and installation is not made.

A. As existing **YC-201 VDSL modem** was not removed or there is a problem in LAN card, remove LAN card and then install it again.

Problem upon Internet access

Q. If you try to access KORNET by using **YC-201 VDSL Modem**, 'Beginning Negotiation' is displayed and connection is not made.

A. This message is displayed when you attempt to access KORNET. If this message continues and connection is impossible, check the physical status of VDSL. Contact **VDSL service provider**.

Q. If you want to access KORNET by using **YC-201 VDSL Modem,** 'Authentication' is displayed and connection is impossible.

A. This message is displayed while you attempt authentication with the authentication server of KORNET. If this message continues, and Internet access is impossible, you might have input wrong user ID or are accessed to the Internet by using user ID in other system. Check user ID, input correct ID and reattempt access or check if other person uses user ID.

Q. If you try to access KORNET by using **YC-201 VDSL Modem,** 'Receiving Network parameters' is displayed and connection is impossible.

A. This message is displayed when you assign IP address in KORNET or authentication was completed. If this message continues and connection is not made, contract **VDSL service provider**.

Q. If you try to access KORNET by using **YC-201 VDSL Modem,** 'Updating Network Parameters' is displayed for a time.

A. This message is displayed while binding IP address assigned in KORNET with **YC-201 VDSL Modem** Adaptor. As this process requires some time, do not disconnect that and wait for a while.

Appendix A Troubleshooting

Appendix A presents frequent problems in using **YC-201 VDSL Modem** and their solutions. The organization of it is as follows:

- Basic things to know before contacting **VDSL service provider**.
- Problems and solutions

A Basic things to know before contacting **VDSL service provider**.

If there occurs a problem that can't be solved by users during its use, you must contact **VDSL service provider**.

Before contacting **VDSL service provider,** the following product information and memo should be prepared.

- Product Model name (e.g.: YOUNGWOO TELECOM VDSL MODEM-MODEL NAME:YC-201)
- Product Serial No.
- Product Purchase Date
- Memo of problems
- Memo by step of actions by users

B Problems and solutions

Presents, in detail, problems that may occur by type and introduces the solutions.

- Possible problem type: The following are problem types that may occur in using **YC-201 VDSL Modem**.
  - Power related problem
  - Network access related problem

C Power related problem : The following power related problems may occur.

- Though power adaptor was connected and power cable connected to power adaptor was inserted into the outlet, DC 5V LED is not switched on to green. ➔ If this problem occurs, check up the following matters:
- Check up power outlet.
- Plug out jack from power input port at the back of **YC-201 VDSL Modem**, connect it again after 10 seconds or so and restarts **YC-201 VDSL Modem**.
- If the problem continues, immediately plug out the jack from power input port of **YC-201 VDSL Modem** and then contact **VDSL service provider**.

D Network access related problem ➔ access related problem below may occur.

- Unable to access the Internet.
- VDSL LED is OFF. ➔ if this problem occurs, check up the following matters:
  - Check up again the connection of various cables connected to **YC-201 VDSL Modem** and PC.
  - Check up the status of LAN card of PC.
  - Check up the operation of PC.
  - Check up if IP address was assigned in accordance with the access service of **VDSL service provider**.
  - If problem continues, immediately plug out the jack from power input port of **YC-201 VDSL Modem** and then contact **VDSL service provider**.

Appendix B Windows 95/98 Phone Access Networking Error Code

Appendix B presents the codes of errors that may occur in attempting phone access networking in Windows 95 and 98, their meaning and solutions.

600-609

600 Operation Holding.

Windows problem. If it continues even after reboot, reinstall phone access networking.

601 Wrong port handle.

Windows problem. If it continues even after reboot, reinstall phone access networking.

602 Modem is used in other phone access networking or other program, or modem port is wrongly assigned.

End other communication program or power off PC. After a while, power on it and restart that. Such error occurs in the following case:

Other program controls modem function.

A The modem malfunctions in HD.

B While one system uses several communication programs,

C The registry of Windows 95 is not properly updated.

- Solution : Power off the system for reboot, or end other communication program to solve it. Another method includes pressing CTRL + ALT + DEL and opening program end window.

603 Caller buffer too small

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

604 Wrong information.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

605 Port information setup impossible.

Wrong configuration information of phone access networking. Check if phone access networking setup is correct. In case of having changed telecom equipment(serial port or modem), correctly change phone access networking setup.

606 Port not connected.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

607 Wrong event.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

608 No device.

Wrong configuration information of phone access networking. Check if phone access networking setup is correct. In case of having changed telecom equipment(serial port or modem), correctly change phone access networking setup.

609 No device type.

Wrong configuration information of phone access networking. Check if phone access networking setup is correct. In case of having changed telecom equipment(serial port or modem), correctly change phone access networking setup.

If error continues, erase phone access icon item in phone access networking folder and create another one.

610-619

610 Wrong buffer

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

611 Route use impossible.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

612 No route assigned.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

613 Wrong compression.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

614 Buffer is insufficient.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

615 Unable to find port.

Wrong configuration information of phone access networking. Check if phone access networking setup is correct. In case of having changed telecom equipment(serial port or modem), correctly change phone access networking setup.

If error continues, erase phone access icon item in phone access networking folder and create another one.

616 Asynchronous request held.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

617 Port or device connection already released.

End phone access program and reconnect it after a while.

618 Port not open.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

619 Port disconnected.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

620-629

620 No end point.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

621 Unable to open phone book file.

Problem in phone book configuration information. Reinstall phone access networking.

622 Unable to read phone book file.

Problem in phone book configuration information. Reinstall phone access networking.

623 Unable to find phone book item.

Problem in phone book configuration information. Reinstall phone access networking.

624 Unable to record phone book file.

Problem in phone book configuration information. Reinstall phone access networking.

625 Wrong information found in phone book.

Problem in phone book configuration information. Reinstall phone access networking.

626 Unable to read string.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

627 Unable to find key.

Problem in phone book configuration information. Reinstall phone access networking.

628 Port disconnected.

If this message continues, decrease modem access rate and re-access it.

629 Unable to connect to phone access networking of the called PC.

Check the password and reattempt that. Such error occurs in the following case:

A Wrong user ID or password

B In consideration of modem and line characteristics, normal connection to terminal server for PPP access is not made.

C Phone access networking not normally installed

D msvcrt40.dll missing

E Wrong RASAPI32.DLL version

F Wrong WINS Resolution setup

SOLUTION

A Erase the password and re-input that. The password needs division of upper-case character and lower-case character, so input it again correctly. Also, check if Caps Lock is ON, and check if Korean/English conversion key was properly pressed.

B For some modems, owing to actual HD problems, such errors occur. In this case, do not use the controller provided by the manufacturer and set up standard modem driver that can be set up in Windows. If it continues, replace the modem. The modem generates heavy noise, and repeats the same tone for a long time. In most cases where this error occurs before checking ID and password, it is modem or line problems.

C Check if phone access networking necessary for TCP/IP access is normal, and double-click My Computer ➔ Control Panel ➔ Network to open <Network> window and check the contents of installed network components. If all are normal, it means file damage, so reinstall that after deletion.

D As a file related to password authentication, in general cases, it is installed with Internet Explorer 4.0. However, it is omitted, such error may occur. Click Start ➔ Find ➔ File or Folder, input 'msvcrt40.dll' to 'Name ', check 'C' in 'location' and click [Find Now]. If this file does not exist, reinstall Internet Explorer or purchase up-to-date file and copy that.

E Copy up-to-date RASAPI32.DLL.

F Set it to "WINS Resolution not used" and the method is as follows. In the display screen, choose network, right-click the mouse to open registration information and then choose 'TCP/IP' item or 'TCP/IP ➔ Phone Access'. Then double-click that and open registration information window. Here, choose 'WINS Resolution not used'.

630-639

630 No response from modem.

Check the modem is on and if necessary, reset the PC. The reason for such error is as follows:

A Unrecoverable error occurrence in user modem (or other communication device)

B Unrecoverable error occurrence in user communication port

C User modem cable open

Method of diagnosing and correcting the problem

A For external modem, check if the modem is ON and cable was safely attached.

B Check if the modem normally operates.

C Test the modem.

631 User port disconnected.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

632 Wrong structure size.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

633 Unable to find designated modem in phone access networking.

Before calling, install the modem or choose new modem.

Such error is divided into the following 3 cases:

A It occurs in cases where modem driver of users is not normally installed. In such cases, delete existing modem in My Computer ➔ Control Panel ➔ Modem and reinstall that.

B It may occur if more than 2 types of modem driver are installed. If modem is one, for stable installation, delete all of modem drivers in My Computer ➔ Control Panel ➔ Modem and reinstall only one more driver.

C With very few cases, it occurs if the modem encounters a HW problem. After replacing the modem, reinstall that.

634 Unable to register PC in remote network.

Unable to register user PC name from remote access server.

635 Unknown error.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

636 Wrong device connected to port.

HD configuration does not correspond to phone access networking configuration information.

637 Unable to convert string.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

638 Request time overdue.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

639 No available asynchronous network.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

640-649

640 NetBIOS error.

It may occur when connection is not properly set up from the modem or there are a lot of noises in line. After setting the access rate of modem to low, place a call once again.

645 Unable to connect to server.

The cause occurs when TCP/IP related installation is abnormal. If it occurs upon access via modem and it has been normally used, this error results from TCP/IP module damage. If you reinstall phone access networking, the error is solved.

650-659

650 No response from phone access networking server.

It may occur when connection is not properly set up from the modem or there are a lot of noises in line. After setting the access rate of modem to low, place a call once again.

651 Modem (or other access device) error.

Check if modem configuration is correct and reattempt that. If the problem occurs again, delete installed modem from the control panel and then reinstall that. Also, you must power off PC and power on it again after a while to start Windows. For external modem, power off modem and power on it again.

652 Unable to recognize response from device.

Check if modem configuration is correct and reattempt that. If the problem occurs again, delete installed modem from the control panel and then reinstall that. Also, you must power OFF PC and power on it again after a while to start Windows. For external modem, power off modem and power on it again.

653 Unable to find necessary macro in device .INF file section.

Reinstall phone access networking. If it continues, replace the modem.

654 Referring to macro undefined in command or response of device .INF file section.

Reinstall phone access networking. If it continues, replace the modem.

655 Unable to find macro in device .INF file section.

Reinstall phone access networking. If it continues, replace the modem.

656 Macro in device .INF file section includes undefined macro.

Reinstall phone access networking. If it continues, replace the modem.

657 Unable to open device .INF file.

Reinstall phone access networking. If it continues, replace the modem.

658 Device name of device .INF or medium .INF file is too long.

Reinstall phone access networking. If it continues, replace the modem.

659 Referring to unknown device name in medium .INI file.

Reinstall phone access networking. If it continues, replace the modem.

660-669

660 Device .INF file does not include response to command.

Reinstall phone access networking. If it continues, replace the modem.

661 In device .INI file, command was lost.

Reinstall phone access networking. If it continues, replace the modem.

663 Medium .INI file refers to unknown device type.

Reinstall phone access networking. If it continues, replace the modem.

664 Unable to allocate memory.

System memory is insufficient. End some application programs and place a call again.

665 Port was not configured in accordance with phone access networking.

If port is already used in other connection, disconnect corresponding port, or edit item to use other communication port. If the port is not used, reinstall phone access networking. If the problem continues, replace the modem.

666 Modem (or other connection device) not properly operates.

Owing to one of the following reasons, no response is made from modem(or other connection device).

A Modem OFF.

B Modem not properly connected to PC.

C Check if cable was properly connected to modem and PC.

D Serial cable is not appropriate specifications required by remote access.

E HD glitch occurred in modem. Power off modem, wait for 20 seconds and then restart the modem.

667 Unable to read medium .INI file.

Reinstall phone access networking. If it continues, replace the modem.

668 Disconnected.

It may occur when connection is not properly set up from the modem or there are a lot of noises in line. After setting the access rate of modem to low, place a call once again.

669 Incorrect usage medium variable of medium .INI file.

Reinstall phone access networking. If it continues, replace the modem.

670-679

670 Unable to read section name from medium .INI file.

Reinstall phone access networking. If it continues, replace the modem.

671 Unable to read device type from medium .INI file.

Reinstall phone access networking. If it continues, replace the modem.

672 Unable to read device name from medium .INI file.

Reinstall phone access networking. If it continues, replace the modem.

673 Unable to read usage from medium .INI file.

Reinstall phone access networking. If it continues, replace the modem.

674 Unable to read maximum connection BPS rate from medium .INI file.

Reinstall phone access networking. If it continues, replace the modem.

675 Unable to read maximum transfer medium BPS rate from medium .INI file.

Reinstall phone access networking. If it continues, replace the modem.

676 ‘ Busy. To next number.’ . ‘ Busy.’

Reinstall phone access networking. If it continues, replace the modem.

677 Person response instead of modem.

Check if access number is correct. If the same problem occurs, place a call to another access number.

678 No response from the modem of the called PC.

Check if access number is correct and reattempt that after a while.

A Modem does not answer. Check if access number is correct. If the same problem occurs, place a call to another access number.

B This error may occur though modem did not place a call. In this case, Windows modem and phone access networking part were damaged. But, in normal cases, it is a temporary case. Reattempt that in the following procedure:

- Power on and off PC and reattempt that.
- In <control panel/modem>, install modem and reattempt that.

C It may occur while a call is placed and tone is repeated and disconnected. It occurs if phone access networking function was damaged or line is busy and it also results from temporary status owing to Windows environment. Reattempt that in the following procedure:

- In <My Computer/Phone Access Networking>, delete phone access icon, check if phone number is correct and then reattempt that.
- Open Start ➔ Run and execute winipcfg. Check if DNS and IP address are all displayed with 210.115.XXX.XXX. If not, there is a problem in modem or phone access networking.
- Open Start ➔ Program ➔ Korean MS DOS, enter Ping 127.0.0.1 and run it. If “ Requested time was passed” is displayed, it means that TCP/IP module was damaged. So, in <Control Panel/Network>, delete components, reinstall that and attempt connection.

679 Unable to retrieve transfer medium.

There is no modem carrier signal or the modem does not receive a call. Check if the access number is correct

and place a call again. If the same problem occurs, place a call with other access number.

680-689

680 No dial tone.

Check if modem was properly connected to phone line. Check if phone line is inserted into the socket of the modem. In addition, in case of using switch at office, check if external line number '9' was correctly input.

681 General error reported from device.

Reinstall phone access networking. If it continues, replace the modem.

682 ERROR_WRITING_SECTIONNAME

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

683 ERROR_WRITING_DEVICETYPE

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

684 ERROR_WRITING_DEVICENAME

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

685 ERROR_WRITING_MAXCONNECTBPS

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

686 ERROR_WRITING_MAXCARRIERBPS

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

687 ERROR_WRITING_USAGE

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

688 ERROR_WRITING_DEFAULTOFF

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

689 ERROR_READING_DEFAULTOFF

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

690-699

690 ERROR_EMPTY_INI FILE

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

691 Authentication failure from server.

Wrong authentication protocol. Reattempt access. If it continues, reopen phone access networking folder.

692 HD error occurred in port or connected device.

Owing to one of the following reasons, no response is made from modem(or other connection device).

A Modem OFF.(For externally-mounted modem)

B Modem not properly connected to PC. Check if cable was properly connected to modem and PC.

C Replace the modem and then reattempt that.

693 ERROR_NOT_BINARY_MACRO

Reinstall phone access networking. If it continues, replace the modem.

694 ERROR_DCB_NOT_FOUND

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

695 ERROR_STATE_MACHINES_NOT_STARTED

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

696 ERROR_STATE_MACHINES_ALREADY_SRARTED

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

697 ERROR_PARTIAL_RESPONSE_LOOPING

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

698 Answer key name of device .INI file does nor correspond to the expected format.

Reinstall phone access networking. If it continues, replace the modem.

699 Buffer overflow owing to device answer.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

700-709

700 Extension command of device .INI file too long.

Command that can be used in script file is restricted to 256 characters. Corresponding command should be divided into several commands. See command.

701 Device move to BPS rate not supported by COM controller.

Modem attempted connection at the rate that can not be translated by serial port. Reset initial rate to 38400,19200,9600,2400bps.

702 Unexpected answer from device.

Reinstall phone access networking. If it continues, replace the modem.

704 ERROR_BAD_CALLBACK_NUMBER

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

705 ERROR_INVALID_AUTH_STATE

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

706 ERROR_WRITING_INITBPS

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

707 X.25 diagnosis order.

X.25 connection returns error. Request translation of diagnosis information provided to X.25 provider.

710-719

710 Serial overrun error retrieval during modem communications.

It may occur when connection is nor properly set up from the modem or there are a lot of noises in line. After setting the access rate of modem to low, place a call once again.

711 RasMan initialization error. Check event record.

Windows problem. If the same problem occurs even after reboot, reinstall phone access networking.

713 Unable to use active ISDN line.

Check if ISDN line was properly inserted, check termination register was properly installed and then place a call again. If this error continues, contact ISDN card seller's service center or ISDN phone company.

714 Unable to place a call by using ISDN channel.

All available ISDN channels are in use. Disconnect the call and reattempt that.

715 Too much error owing to low phone line quality.

It may occur when connection is not properly set up from the modem or there are a lot of noises in line. After setting the access rate of modem to low, place a call once again.

716 ERROR_IP_CONFIGURATOIN

Wrong configuration information of phone access networking. Check if phone access networking setup is correct. In case of having changed telecom equipment(serial port or modem), correctly change phone access networking setup.

718 ERROR_PPP_TIMEOUT

Although PPP dialogue started, it was ended owing to untimely response from remote PC. This case may occur owing to line quality defect or server problem. After a while, reattempt that or use other access number.

719 ERROR_PPP_REMOTE_TERMINATED

Although PPP dialogue started, it was ended owing to remote PC's request. Most cases result from server error. After a while, reattempt that or use other access number.

720-729

720 Temporary line trouble or phone access networking setup trouble.

Wrong configuration information of phone access networking. Check if phone access networking setup is

correct. In case of having changed telecom equipment (serial port or modem), correctly change phone access networking setup.

721 ERROR_PPP_NO_RESPONSE

Wrong configuration information of phone access networking. Check if phone access networking setup is correct. In case of having changed telecom equipment (serial port or modem), correctly change phone access networking setup.

722 ERROR_PPP_INVALID_PACKET

PPP packet was received in a wrong format. It may result from line defect. So, after a while, reattempt that or use other access number.

723 ERROR_PHONE_NMBER_TOO__LONG

Maximum length of phone number including prefix and suffix is 128 characters. Check if the phone number is correct.

727 ERROR_ACCESSING_TCPCFGDLL

Wrong configuration information of phone access networking. Check if phone access networking setup is correct. In case of having changed telecom equipment(serial port or modem), correctly change phone access networking setup.

728 ERROR_NO_IP_RAS_ADAPTER

Wrong configuration information of phone access networking. Check if phone access networking setup is correct. In case of having changed telecom equipment(serial port or modem), correctly change phone access networking setup.

729 ERROR_SLIP_REQUIRES_IP

Use [Control Panel ➔ Network] and install TCP/IP.

730-739

731 Temporary line trouble or phone access networking setup trouble.

Such error results from the following:

A Network protocol installed in the system is not TCP/IP or the setup is wrong.

B The quality of phone line used for communication is bad.

SOLUTION

A If IPX/SPX compatible protocol, NETBEUI, etc. are installed in My computer ➔ Control panel ➔ Network, delete that. And, check call access icon setup.

B It may occur temporarily if phone line status is bad. In this case, attempt that after a while or use other

number. For other reason, If you use extension line to access and the switch is by digital method(key phone), communication using modem is impossible. If analog line is connected together, it is sometimes connected. In this case, normal use is impossible, so use general line. As ISDN line also uses digital method, the same error occurs if you directly connect modem other than dedicated equipment.

732 ERROR_PPP_NOT_CONVERGING

Wrong configuration information of phone access networking. Check if phone access networking setup is correct. In case of having changed telecom equipment(serial port or modem), correctly change phone access networking setup.

733 ERROR_PPP_CP_REJECTED

Wrong configuration information of phone access networking. Check if phone access networking setup is correct. In case of having changed telecom equipment(serial port or modem), correctly change phone access networking setup.

734 ERROR_PPP_LCP_TERMINATED

Wrong configuration information of phone access networking. Check if phone access networking setup is correct. In case of having changed telecom equipment(serial port or modem), correctly change phone access networking setup.

736 ERROR_PPP_NCP_TERMINATED

Wrong configuration information of phone access networking. Check if phone access networking setup is correct. In case of having changed telecom equipment(serial port or modem), correctly change phone access networking setup.

740-749

740 ERROR_TAPI_CONFIGURATION

Wrong configuration information of phone access networking. Check if phone access networking setup is correct. In case of having changed telecom equipment(serial port or modem), correctly change phone access networking setup.

741 ERROR_NO_LOCAL_ENCRYPTION

Wrong configuration information of phone access networking. Check if phone access networking setup is correct. In case of having changed telecom equipment(serial port or modem), correctly change phone access networking setup.

742 ERROR_NO_REMOTE_ENCRYPTION

Wrong configuration information of phone access networking. Check if phone access networking setup is correct. In case of having changed telecom equipment(serial port or modem), correctly change phone access networking setup.

743 ERROR_REMOTE_REQUIRES_ENCRYPTION

Wrong configuration information of phone access networking. Check if phone access networking setup is

correct. In case of having changed telecom equipment(serial port or modem), correctly change phone access networking setup.

750-752

752 Syntax error during script execution.

Syntax error occurrence in phone access script related to phone book item.

Appendix C Terminology

VDSL(Very high-bit rate Digital Subscriber Line)

This is modem technology that enables operator to offer multi-megabyte service to subscriber by existing copper-fiber infrastructure.

Base-T

With bandwidth that supports up to 10Mbps transmission rate, it is LAN interface that uses category 5 cable.

ATM

ATM is an acronym of Asynchronous Transfer Mode. This is one of communication transfer methods. ATM refers to a control method that enables other multiple terminals to simultaneously send data when a certain terminal sends data to have a piece of transmission line shared by several terminals for communication.

Ethernet

This is a major LAN access method jointly developed by Xerox, Intel, and DEC. It uses transmission cable 10BASE standard. Transmission rate is about 10Mbps or so, and a node monitors signals on transmission line. It uses CSMA/CD access method that sends data after checking that all other nodes do not transmit signals.

LAN

This is a major LAN access method jointly developed by Xerox, Intel, and DEC. It uses transmission cable 10BASE standard. Transmission rate is about 10Mbps or so, and a node monitors signals on transmission line. It uses CSMA/CD access method that sends data after checking that all other nodes do not transmit signals.

FTP (File Transfer Protocol)

FTP is an acronym of File Transfer Protocol. FTP transmits files between host and host and between host and PC in network.

IP Address

IP(Internet Protocol) address is the address of host or device in the Internet. It consists of 4 bytes, and each byte is divided into periods. To avoid redundancy, it assigns IP address by IANA(Internet Assigned Numbers Authority).

KT KORNET (Internet Service Provider)

Korea Telecom KORNET means Internet Service Provider. KT KORNET maintains network connected to the Internet through high speed link known as T1, and dedicated communication circuit. KT KORNET provides usage right of dedicated lines to companies or individuals. Modem users connects their PCs to the Internet by paying some charges. When data moves through network, data is sent divided into packets. At this time, they can place a call to KT KORNET.

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Switch

The switch is a network device that filters and transmits frames according to the destination address of each frame. The switch runs in data link layer among OSI layer models.

TCP/IP (Transmission Control Protocol/Internet Protocol)

TCP/IP(transmission control protocol/Internet protocol) is one of network protocols mainly used in LAN. IP moves data packet from one place to other place and TCP manages data flow and checks if data is correct.

PHONEnet (remote access)

PHONEnet is one of Internet services used to access other PC in the Internet. It is used in case of remotely controlling PC. Therefore, to access other PC, it requires user number and password to use the PC. To access domestic phone in the Internet, 'PHONEnet' is used. Therefore, people with domestic communication ID can directly access domestic communication network through 'PHONEnet'.

PSTN(Public Switched Telephone Network)

PSTN is an acronym of Public Switched Telephone network. PSTN is the public communication network for common users to utilize and has switched connection form provided by VDSL service provider. It was originally used for phones. With the development of telecom equipment, it is also used for communication between FAX and PC. In other words, it is called POTS.

Router

Router is HD and SW devices that help to communicate from one network to other network by connecting two or more networks. The router transfers packet, converts address between networks in the network layer of OSI model, and converts that according to protocol.

POTS(Plain Old Telephone Service)

POTS is an acronym of Plain Old Telephone Service. POTS means general telephone network to which supplementary service is not supported

WWW(World Wide Web)

WWW is an acronym of World Wide Web. WWW is multimedia services last developed among a lot of services in the Internet. This service enables users to transfer and retrieve picture, graphic, voice and animation by hyper text other than character-based Internet services. The advent of WWW offered wide use of the Internet. WWW is also called W3, Web, etc.

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