About This Manual

This manual provides the basic information required for installing the DCS-VIP router, and connecting to your Internet Service Provider (ISP) for Internet navigation. You should refer to the **DCS-VIP User Guide** for detailed specifications of the DCS-VIP, the names and functions of components, how to use it and how to solve problems. You can download the **DCS-VIP User Guide** at the following web site.

http://www.samsungnetwork.com

Before You Start

Before installing and setting up the DCS-VIP:

- Call your ISDN service provider and apply for an ISDN BRI line.
- You should have a network card installed in the PC to be connected to the DCS-VIP Ethernet port. Check that the TCP/IP protocol is also installed.
- If you want to connect network equipment such as a Hub or Router to the Ethernet port of the DCS-VIP, prepare UTP category 3, 4, or 5 crossover cables separately as required.

Information Required

In order to setup the DCS-VIP system you will need the following information.

- The IP address and subnet mask of your PC
- The IP address and subnet mask of the DCS-VIP
- The ISDN phone number of your ISP
- The Account ID name(Host name) and password of your ISP account
- The DNS Server IP address of your ISP

Product Specifications

Hardware Specifications

CPU	Router Module	Motorola MC68EN360
	Keyphone Module	Motorola MC68EN302
Memory	Router Module	16M DRAM 2M Flash
	Keyphone Module	8M DRAM 2M Flash
Port Interface	Main System	2 ISDN BRI Interfaces : U or S/T type 1 VoIP port : RJ-45 1 SIO port : RJ-45 8 Ethernet ports : 10/100Base-T, RJ45 6 Digital Phone ports : RJ-11 4 Analog Phone ports : RJ-11 1 Expansion port : RS-232C 1 BATT port 1 MOH port
	Expansion System	2 ISDN BRI Interfaces : U or S/T type 8 Ethernet ports : 10/100Base-T, RJ45 2 Digital Phone ports : RJ-11 4 Hybrid ports : RJ-11 4 Analog Phone ports : RJ-11 1 Expansion port : RS-232C
Dimensions	426.79(W) x 278.4(D) x 49.9(H) (mm)	

Router Software Specifications

Routing	IP (Static Routing) IPX (SAP, WAN)
WAN Service	PPP, MLPPP
Management	SNMP , Web based, Telnet
Security	PAP, CHAP, Caller ID, Call-back, Filtering(Access List)
Compression	Stac LZS, Predictor
Option	NAT(Network Address Translation), DHCP Server, DHCP Relay Agent, Bandwidth on demand, Dial on demand

KeyPhone Software Specifications

System Features	Attendant Group, Barge-in, Call Waiting, Class Of Service, Conference, In Group/Out of Group, Least Cost Routing, Music On Hold, Page, SMDR, Call Transfer
Station Features	Alarm Reminder, Answer Mode, Boss/Secretary, Call Forwarding, Hold, Camp-on, Do Not Disturb, Message Waiting, Redial, Speaker Phone, Speed Dial, Trunk Callback
Option Features	CTI, ISDN AOC, ISDN COLP/COLR, ISDN DDI, ISDN MSN, ISDN Subaddress, Voice Mail System

VoIP Software Specifications

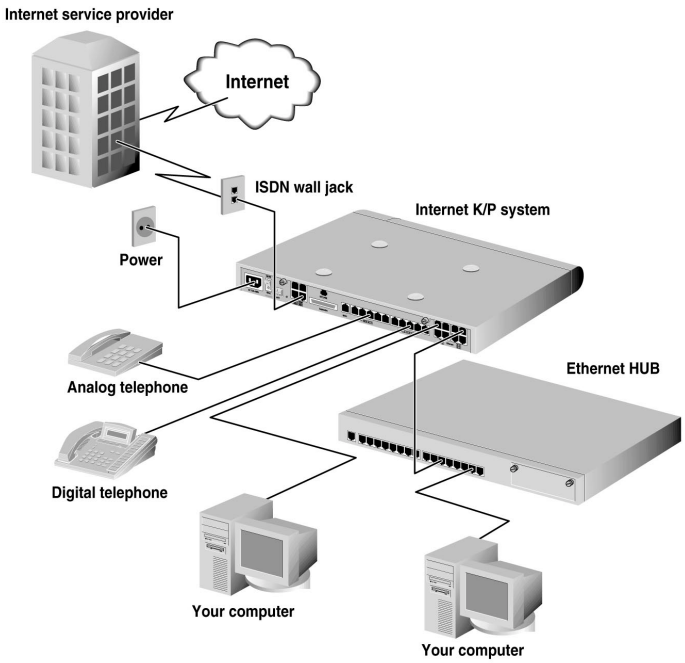
Basic Features	Incoming Call, Outgoing Call, Call Forward, Call Transfer, Call Wait, Redial
System Features	Set µ/A-Law, Translation Tel No. to IP Address, Web-based Management
VoIP Features	Trunk Account, IP Convertion Table, Remote Download

Environmental Requirements

- Input Voltage : 120-240 VAC (Free Volt)
- Frequency : 60Hz
- Power Consumption : 70 Watts
- Operation Temperature : 0°C ~ 40°C
- Relative Humidity : 10% ~ 90% (Non-condensing)

Installing Your DCS-VIP

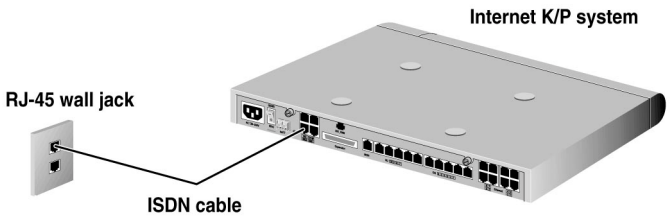
Refer to the following network connection diagram, and then connect each cable to the appropriate port on the rear panel of the DCS-VIP.



❶ Connecting the ISDN Line

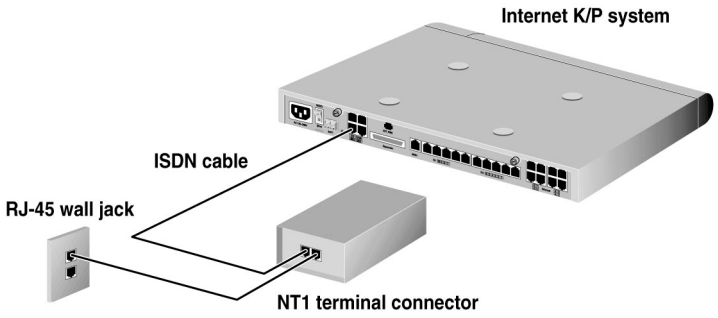
Option A) Connecting the ISDN Line to ISDN U Port (Not Used in the UK).

1. Connect the provided ISDN cable to the port labeled **BRI 1** on the rear panel of the DCS-VIP.
2. Connect the other end of the ISDN cable to an RJ-45 ISDN wall jack.
3. If you applied for two ISDN lines, connect the second ISDN cable to the port labeled **BRI 2** and a RJ-45 ISDN wall jack.



Option B) Connecting the ISDN Line to ISDN S/T Port

1. Connect the ISDN cable to the port labeled **BRI 1** on the rear panel of the DCS-VIP.
2. Connect the other end of the ISDN cable to the NT1 terminal connector. (or ISDN Connection box in the UK)
3. Connect the NT1 terminal connector to the ISDN wall jack using the ISDN S/T cable that came with your NT1 terminal connector. (Not required in UK)



❷ Connecting a PC or Hub

Option A) Connecting a PC

There are eight Ethernet ports on the rear panel of the DCS-VIP. You can connect a PC to each Ethernet port (a maximum of eight PCs).

1. Connect the provided Ethernet cable to any of the **Ethernet** ports on the rear panel of the DCS-VIP.
2. Connect the other end of the Ethernet cable to the connector on your PC.

Option B) Connecting a Hub

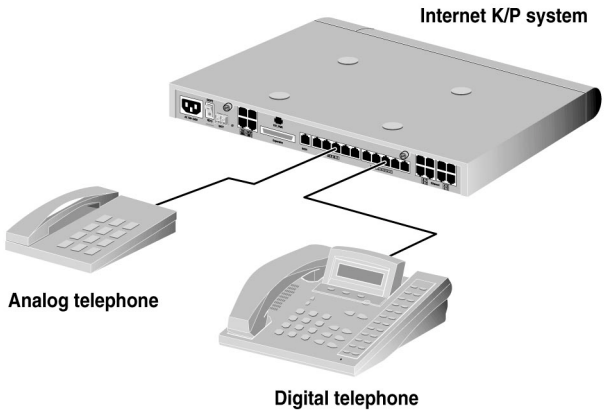
If you want to set up the network for more users, you can extend the number of ports by connecting another hub, switch, or router.

1. Connect an Ethernet crossover cable (not included) to any of the ports labeled **Ethernet** on the rear panel of your DCS-VIP.
2. Connect the other end of the cable to an available port on your Ethernet hub, switch, or router.

❸ Connecting Digital or Analog Telephons

You can connect a digital telephone to the DLI port on the rear panel of your DCS-VIP, and you can connect an analog telephone to the SLI port.

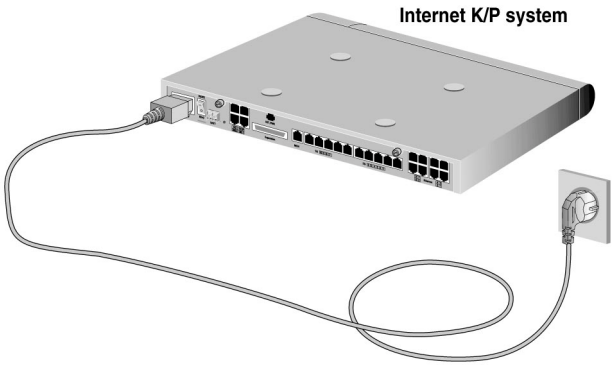
1. Connect the telephone cable to the port labeled **DLI** or **SLI** on the rear panel of your DCS-VIP.
2. Connect the other end of the telephone cable to a RJ-11 port on your digital or analog telephone.



❹ Connecting the Power Cord

When all of the cable connections to the DCS-VIP system are done, connect the power cord as follows.

1. Connect the provided power cord to the power input connector on the rear panel of your DCS-VIP.
2. Connect the other end of the power cord to the electrical outlet.

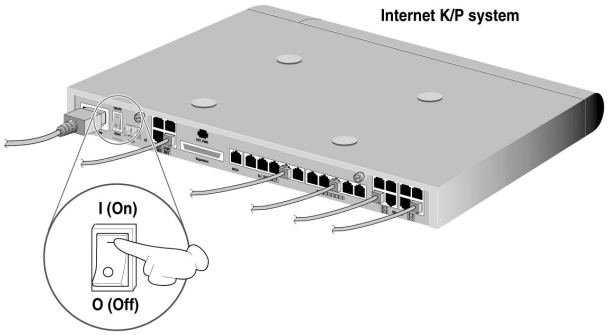

Internet K/P system

Configuring Your DCS-VIP

After installing the DCS-VIP system, switch it on and connect to the default system IP address by running a web browser on a PC which is connected to an Ethernet port. By running the Setup Wizard on the starting screen of the DCS-VIP, you can easily and quickly set up the system

❶ Turn on the System

Turn on the system by pressing the power on/off switch on the rear panel of the DCS-VIP. The 'Run' LED lights green, and when system booting is completed the LED blinks.



❷ Connecting to the Web Management Screen

The factory default IP address of the DCS-VIP is "**1.1.1.1**". To set up the DCS-VIP system, run the web browser (Netscape Navigator 4.0 or later is recommended) and connect this default IP address.

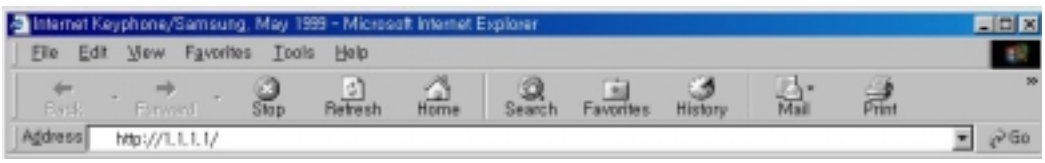
To reset IP address, subnet mask, and gateway of the PC to be used for setting up the DCS-VIP system, double click the **Network** icon in the **Windows Control Panel**. Set each of the following properties.

- IP address : 1.1.1.2
- Subnet mask : 255.0.0.0
- Gateway : 1.1.1.1

Note
Make sure the TCP/IP protocol is installed in the PC.

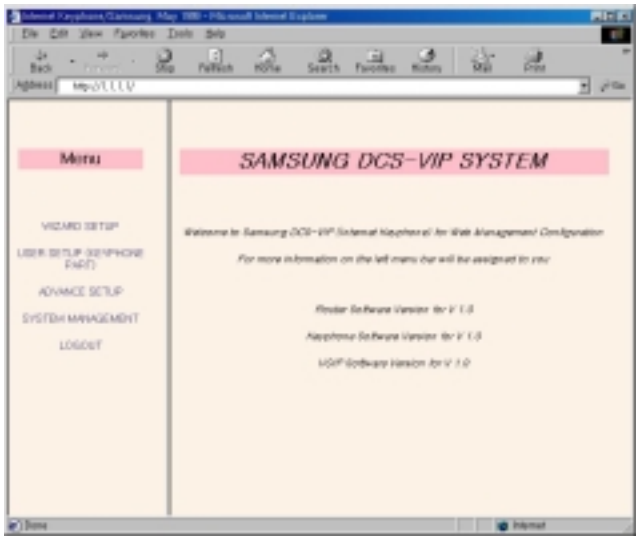
2. After booting the system again, run the web browser.

3. Make a connection to the DCS-VIP system with IP address "**1.1.1.1**".



4. Enter the default User Name **'guest**' and Password '**samsung**'.

5. The Web-based management screen for the DCS-VIP appears.



❸ Running the Wizard Setup

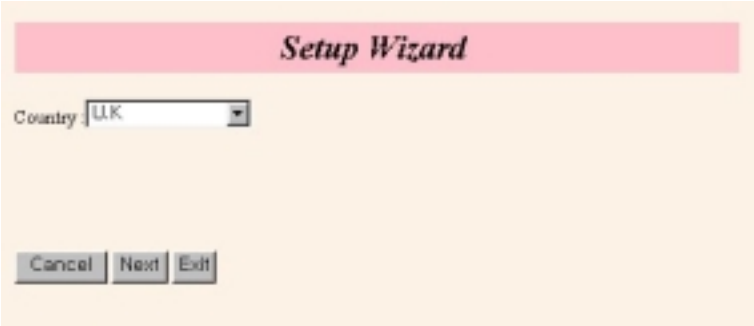
By running the Wizard Setup, you can easily and quickly set up the DCS-VIP system.

Configuring the Keyphone Function

In the Keyphone Wizard Setup, set basic information, such as system installation country, region code, system date, and ISDN option, etc, necessary for using DCS-VIP keyphone functions. Click the **WIZARD SETUP → KEYPHONE SETUP.**

Setup Wizard 1

On this screen, you can set the country where the DCS-VIP is installed.

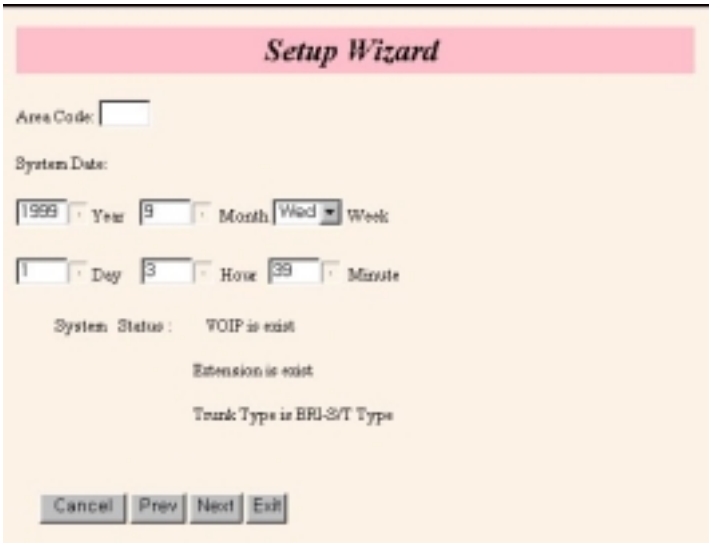


Set the country by clicking the dropdown button of the **Country** parameter. (If you set the wrong country, the system may not operate normally because system standards between countries are different.) Click the **Next** button.

Note
If you change the country, the system data is reinitialized with the changed country's information.

Setup Wizard 2

On this screen, you can set the area code, system date and system status.

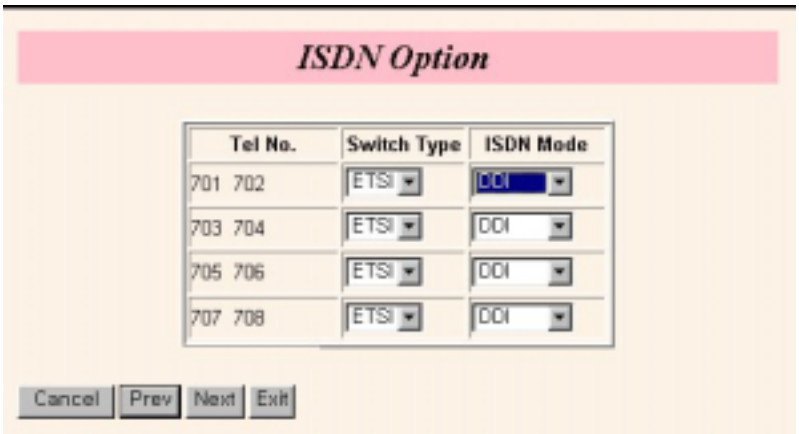


Set the following parameter values and click the **Next** button.

- **Area Code** : Enter the code of the area where the DCS-VIP will be installed.
- **System Date** : Set the system date and time. The set date and time will be saved in the system memory.
- **System Status** : Displays system status, such as whether DCS-VIP system provides VoIP function, whether expend system is equipped, and trunk line type.

ISDN Option

On this screen, you can set the ISDN switch type and ISDN mode.



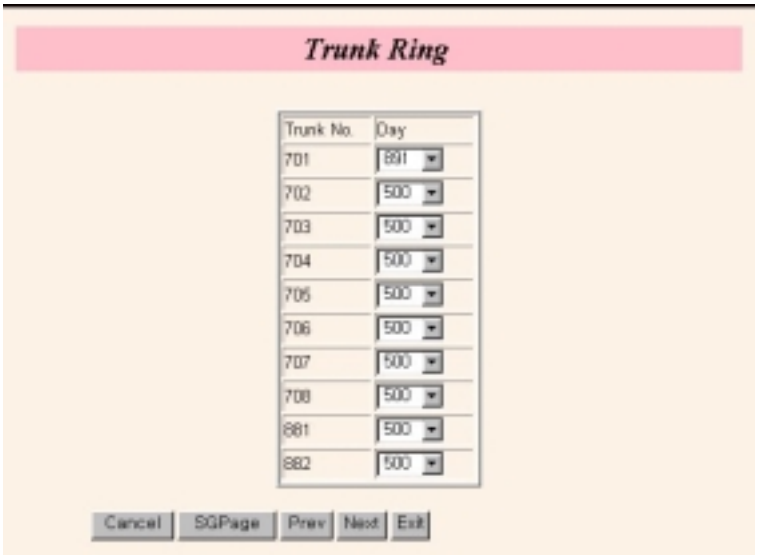
Set the following parameter values and click the **Next** button.

- **Switch Type** : Select the switch type that is used by the local ISDN service provider.

- **ISDN Mode** : Select the mode of the BRI trunk that will be used.
  - Normal: Select the default user to ring for incoming calls.
  - DDI : Directly connect an external call to a selected internal user .
  - MSN : Allows the use of different numbers for each BRI channel.

Trunk Ring

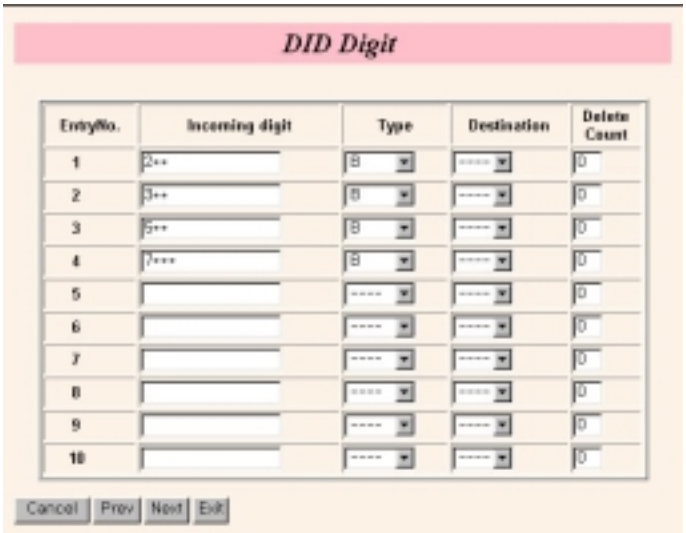
This screen appears only if you set **Normal** as **ISDN Mode** parameter on the **ISDN Option** screen. You can set the station number to ring when call destination is done by each of trunk lines.



Set the station telephone number to ring when the signal destination is operated according to the trunk of each country. For example, to set the station numbered 208 to ring when the signal destination is operated on the trunk numbered 704, click the dropdown button to the right of **Trunk No. 704** and select 208. Then, click the **Next** button.

DID Digit

This screen appears only if you set **DDI** as **ISDN Mode** parameter on the **ISDN Option** screen. You can program a station (or a group) to ring directly from an external incoming telephone call.



Set the following parameter values and click the **Next** button.

- **Incoming digit** : Enter the digits to be matched when you want to ring a station directly from the external network.
- **Type** : Set the type of the station to ring.
  - STN : Ring a specified station.
  - SGRP : Ring a station group.
  - TGRP : Ring a trunk group.
  - B : When B is selected, the number of digits shown in the “Delete Count” field will be deleted before a match is attempted.
- **Destination** : Select the station to ring when you select ‘STN’ in the ‘Type’ parameter.
- **Delete Count** : Enter the number of digits to be deleted when you select ‘B’ in the ‘Type’ parameter.

MSN Digit

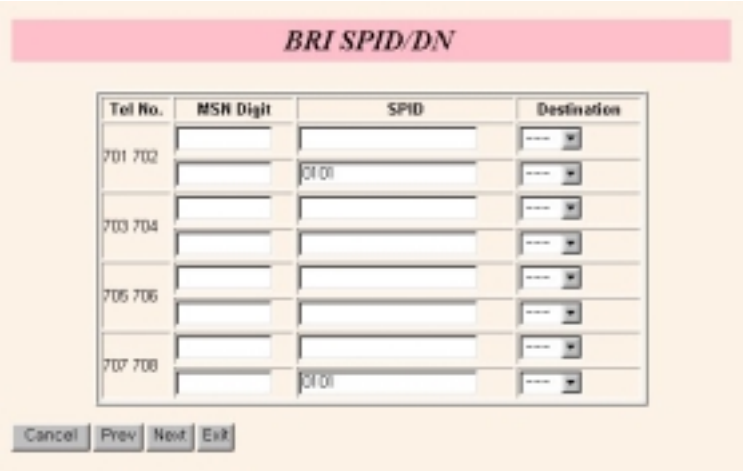
This screen appears only if you set **MSN** as **ISDN Mode** parameter on the **ISDN Option** screen. You can make a transfer table to use BRI trunks in the MSN (Multiple Subscriber Number) mode.

Set the following parameter values and click the **Next** button.

- **No.** : Select the trunk number which will be used in MSN mode.
- **MSN Digit** : Enter a 12-digit MSN number, using the numbers from 0~9.
- **Destination :** Set the station number that will be connected to each MSN number.

BRI SPID/DN

This screen appears only if you set **MSN** as **ISDN Mode** parameter on the **ISDN Option** screen. You can make a conversion table to use BRI trunks in the MSN (Multiple Service Number) mode in **North America**.
Set the following parameter values and click the **Next** button.



- **MSN Digit** : Enter a 12-digit MSN number for each trunk number, using numbers from 0 ~ 9.
- **SPID** : Enter the SPID (Service Profile Identifier) number for each MSN number. The SPID number is allocated by the ISDN service provider.
- **Destination** : Set the station number that will be connected to each MSN number.

KP Side Configuration Confirm

The Keyphone function configuration is now done. Check the data carefully.

For any corrections, click on the **Prev** button to go back to the previous stage.

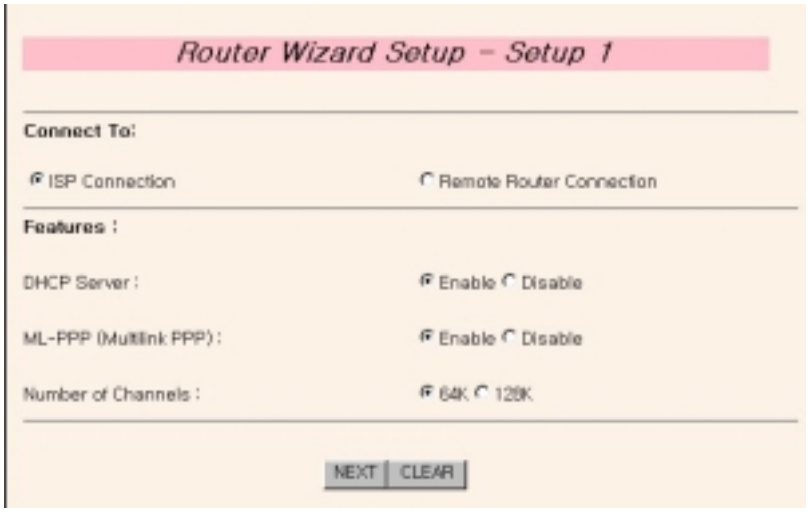
If no correction is needed, click on the **Exit** button.

Configuring the Router Function

In the Router Wizard Setup, you can configure the LAN and WAN environment necessary for connecting to the Internet or a remote node, using the DCS-VIP. Click the **WIZARD SETUP → ROUTER SETUP**.

Router Wizard Setup - Setup 1

On this screen, you can set up the counterpart that you are using the DCS-VIP to connect to and the functions of DHCP and MLPPP.



Set the following parameter values and click the **Next** button.

- **Connection To** : Select what you want to connect DCS-VIP to (ISP, or Remote Router)
  - ISP Connection : Connect to ISP.
  - Remote Router Connection : Connect to remote routers such as branches and headquarters.
- **DHCP Server** : Choose whether to use DCS-VIP system as DHCP server.
  - Enable : Select to allocate IP in Ethernet PC connected to DCS-VIP. Make sure you select "Enable" for ISP connection.
  - Disable : Select not to use DHCP function. If you select "Disable", the network administrator should set up the network information, including IP address in Ethernet PC.
- **ML-PPP (Multilink PPP)** : MLPPP is the protocol that combines more than two ISDN B channels into one PPP (128Kbps). Select "Enable" to use MLPPP function.
- **Nuber of Channels :** Select the bandwidth(64K/128K) for the ISDN line. If you select 128K, then you are using 2 different B channels at the same time. Thus, phone charges will be doubled.

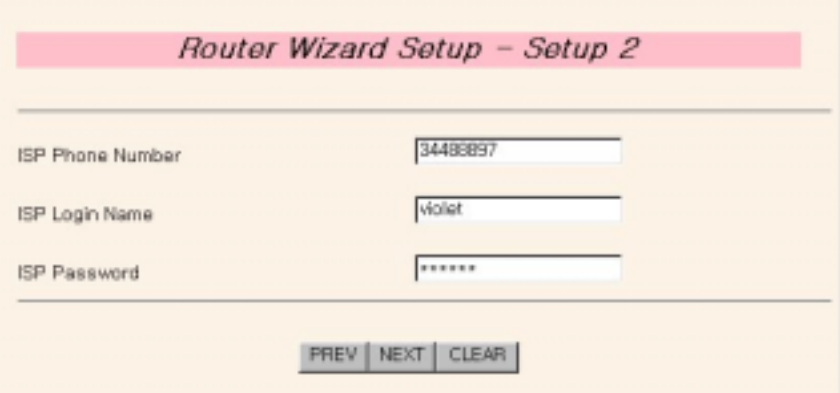
Router Wizard Setup - Setup 2

On this screen you can enter the information about the ISP or the remote node to connect to.

For ISP connection

If you chose ISP for **Connection To** parameter on the Router Wizard Setup - Setup 1 screen, the following parameters will be displayed. Set the parameter values and click the **Next** button.

- **ISP Phone Number** : Enter the ISP phone number.



- **ISP Login Name** : Enter the ISP login name.
- **ISP Password** : Enter the ISP login password.

Note
Contact your ISP if you are not sure about the parameters.

For Remote Router connection

If you chose Remote Router for **Connection To** parameter on the Router Wizard Setup - Setup 1 screen, the following parameters will be displayed. Set the parameter values and click the **Next** button.

- **Remote Router Phone Number** : Enter the remote node telephone number.

- **Remote Router Login Name** : Enter the remote node login name.
- **Remote Router Password** : Enter the remote node password.
- **Remote Router WAN IP Address** : Enter the IP address of the remote node network.
- **Remote Router WAN Network Mask** : Enter the subnet mask of the remote node network.

Note
Contact your remote network administrator if you are not sure about the parameters.

Router Wizard Setup - Confirm Page

Initial set up for the user environment of the LAN and WAN is now completed. Confirm the values on the Wizard Setup - Confirm Page screen. If you have anything to correct, click on **Prev** button to go back to the previous stage. If not, click on the **Exit** button**.**

Note
NAT (Network Address Translation) will enable more than two users to communicate simultaneously using one account if you use ISDN PPP service.
For ISP connection, the NAT function will be automatically enabled.
For Remote Router connection the NAT function will be automatically disabled.

Now that initial set up for the DCS-VIP router module is completed, you will be able to connect to the Internet and to the remote router through the ISP.

Configuring the VoIP Function

The VoIP Wizard Setup can set up the necessary information about how to use the Internet phone charging the inexpensive communication rate. Click the **WIZARD SETUP → KEYPHONE SETUP**.

VoIP IP Address

On the VoIP IP Address screen you can set up the VoIP gateways' IP address and the subnet mask.

Set the following parameter values and click the **Next** button.

- **VoIP IP Address** : Enter the VoIP gateway IP address.
- **Subnet Mask** : Enter the subnet mask of VoIP gateway.
- **Gateway** : Enter the gateway IP address.

VoIP Option

On the VoIP Option screen you can set up the various options necessary for using the Internet phone.
Set the following parameter values and click the **Next** button.

- **DB read from backup memory, if reset** : This decides whether to load the DB form the programs' initial data or from the data saved in the memory.
- **Gatekeeper Connection** : This means whether to connect to Gatekeeper or not.
- **Multi Frame Count** : Select the number of the frames for the voice packet that has been compressed in DSP(Digital Signal Processor) The default is '3'.
- **Echo Cancellation** : Select whether to use echo cancellation
- **Ring Back Tone Support** : Select the source that ring back tone comes from. Users hear this tone when placing a call.

– Enable : Generate the ring back tone from VoIP Tone source.
– Disable : Generate the ring back tone from the DCS-VIP.

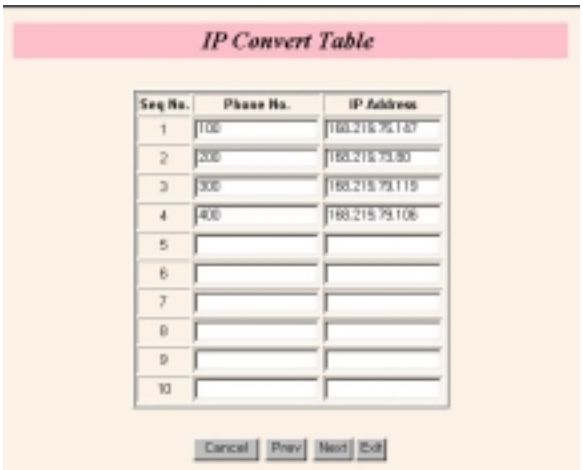
- **Silence Suppression** : Select whether to transmit bundle packet while on the phone. In general, select 'Enable'.
- **PCM Companding Method** : This is the signal standard, which will be used in the telephone network.

– ulaw : Signal standard mainly used in North America.
– alaw : Signal standard mainly used in Europe.

- **Audio Codec** : For Audio Codec, G.723.1 (6.3k) and G.729A are supported.
- **VoIP Gateway ID** : This is a VoIP's caller ID to calculate the calling charge.

IP Convert Table

On the IP Convert Table screen you can set up the telephone number connected to the VoIP gateway and the IP address.



Set the following parameter values and click the **Next** button.

- **Seq No** : Select the index number of IP Conversion Table.
- **Phone No**. : Select the telephone number to link to VoIP gateway.
- **IP Address** : Select the IP address of VoIP gateway.

VoIP Configuration Confirm

VoIP configuration has now been set up. Check the configuration carefully.

For any corrections, click on the **Prev** button to go back to the previous stage.
If no correction is needed, click on the **Next** button.

❺ Changing the System IP Address

Use the **ADVANCE SETUP** menu on the DCS-VIP web management screen to change the system IP address.

When you connect to ISP, you can use the default IP address for the DCS-VIP system or change it to match the network neighborhood.
When you connect to Remote Router, you must change the IP address for the DCS-VIP system to best match the network neighborhood.

Instructions on how to change IP address for the DCS-VIP system are as follows.

1. Click the **ADVANCE SETUP** → **ROUTER SETUP** → **IP Setup** menu on the DCS-VIP web management screen.

2. Set each value for the following parameters, then click the **SET** button.

- **Administrative Status** : Set as 'ENABLE'.
- **IP Address** : This is the DCS-VIP system IP address. Enter the new system IP address.
- **Subnet Mask** : This is the subnet mask for DCS-VIP system. Enter the new system subnet mask.

❻ Saving the System Configuration Information

When you completed setting the system configuration information through WIZARD SETUP and changed the system IP address using ADVANCE SETUP, you can save the settings in the system memory as follows. If you reboot your computer, you can use configuration information that you are configured.

1. Click the **SYSTEM MANAGEMENT → MIB SAVE/RESTORE** menu. Following MIB Save/Restore screen will appear.

2. Specify **Operation to Perform** parameter as **SaveConfiguration.** Click the **Set** button. It will take a few minutes to save the system configuration information in the memory.

3. To reboot the system, select **SYSTEM MANAGEMENT → SYSTEM REBOOT** menu. Click the check button to mark V for each item. Then the DCS-VIP system will reboot.

Note
If you changed the DCS-VIP system IP address, you must reboot the system and then change TCP/IP properties of the PC connected to the DCS-VIP system through Ethernet port, which will best match the DCS-VIP system IP address.