

ATTACHMENT E.

- USER'S MANUAL

Access Gateway

DV-201 DM for H.323 & SIP

Internet Telephony Gateway System

User Guide



Access Gateway

DV-201DM for H.323 & SIP

Internet Telephony Gateway System

User Guide

FCC NOTICE

This device has been tested and found to comply with the limits for a Class B device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in home environment as well as in a commercial, industrial or business environment. This equipment can generate, use and radiate radio frequency energy and, if not installed and used in accordance with the instruction, 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.

Changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Connecting of peripherals requires the use of grounded shielded signal cables.

Ch.1

System Overview

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1 System Overview

DV-201DM is a residential Dial up VoIP gateway with one -port voice interface that can be easily connected to conventional telephones and/or PBXs. Using proprietary QoS management system, the DV-201DM has the capability of transmitting optimal voice quality under high data traffic conditions.

1.1. System Features

- Voice over IP solution
- Compliant with ITU-T H.323 specification & SIP and IMTC's VOIP recommendation
- Comprehensive support for industry-standard H.323/SIP Clients (Microsoft NetMeeting)
- Analog FXS Interface
- Supports PSTN back-up in case emergency
- Supports Multiple standard voice CODEC algorithms, including G.729.A, G.723.1
- Supports standard Internet protocols including TCP/IP, UDP, and RTP/RTCP
- Supports static IP and dynamic IP
- Supports real time Fax (Fax Relay)
- G.168 compliant echo cancellation
- Voice Activity Detection (VAD) and Comfortable Noise Generation (CNG)
- Supports MMC (Man Machine Command) and Web based management

1.2. QoS enhancement functions

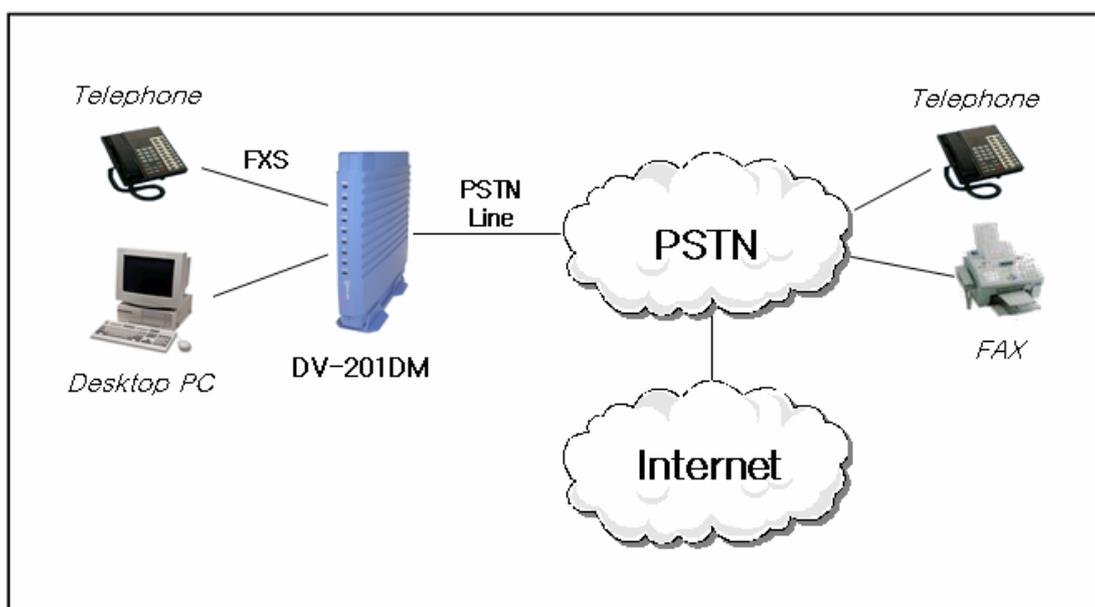
- G.168 echo cancellation
- Voice Activity Detection (VAD)
- Comfort Noise Generation (CNG)
- Dynamic jitter buffer control

1.3. Operation and maintenance

- Supports command-line interface through ASCII terminal
- Supports command-line interface through telnet client
- Supports system management interface through Web browser

1.4. Service Configuration

Internet Telephony service network is configured as below.



2 System Specification

2.1. Basic Specifications

Items	Spec	types	
types		DV-201DM	
Interface	Analog	FXS	1
		FXO	
		Back-Up	1 _(note 1)
	WAN/LAN	MODEM	1 _(note 1)
		10/100BaseT	1
Signaling & Protocol	Analog	FXS/FXO	
	Internet	SIP, H.323, PPP, DHCP, NAT	
Voice Capability		G.729A, G.723.1 Echo Cancellation(G.165), VAD/CNG	
FAX Capability		G3 FAX Relay(T.38)	
Power		External Adaptor Input : 110~220VAC Output : +5VDC	

Note 1 : MODEM and Backup Line is the same interface

2.2. Hardware Handling

- The H/W is designed for easy maintenance and repair.
- The H/W meets minimum requirements against electrical shock or accidental impact.

2.3. Input Power Specifications

- Input Power Source : AC 110~240V (50/60Hz)
- Voltage Fluctuating Range : $\pm 10\%$

2.4. Environmental Conditions

Item		Requirements
Temperature	Normal	5 ~ 40°C
	Optimal	18 ~ 26°C
	Minimal	2 ~ 50°C
Humidity	Normal	20 ~ 65%
	Optimal	45 ~ 55%
	Minimal	20 ~ 80%

Note) Minimal environment conditions may not exceed three consecutive days or 15 total days per year.

3 System Functions

3.1. Call Processing Functions

Call Processing Functions: Delivers voice via packetized network to call destination.

Basic Functions include:

- Inter-extension connection
- Monitoring/Error Management

3.2. Analog FXS Control Functions

Analog FXS Control Functions are used for SLT connection. It packetizes analog voice and transmits through digital network to call destination. (call routing function).

3.3. Emergency Call Switchover Function

Emergency Call Switchover Function is a unique function compared to other devices.

The device automatically switches over to PSTN backup line when:

- Power failure
- Device Malfunction

3.4. DTMF / Call Progress Tone Detection & Generation Function

DTMF/Call Progress Tone Detection and Tone Generation Function detect and generate inband-tone transmitted over an analog line.

3.5. Voice Compression & Decompression Function

Voice Compression is the packetizing of PCM-coded voice data. Decompression is conversion of packetized voice data back into PCM-code. Supports G,729.a, and G.723.1 Voice Coding mode.

The actual voice compression/decompression is processed inside of Digital Signal Processor and the functional unit controls DSP H/W.

3.6. VoIP Function

H.323 protocol provides voice service through IP network by way of sending digital voice-data packetized and encoded via IP network to process its calls. This function is complied with ITU-T : H.323 Recommendation.

SIP is a text-based protocol that is based on HTTP and MIME, which makes it suitable and very flexible for integrated voice-data applications. SIP is designed for real-time transmission, uses fewer resources and is considerably less complex than H.323. Its addressing scheme uses URLs and is human readable.

3.7. TCP/UDP/IP Protocol Processing Function

TCP/UDP/IP Protocol Processing Function processes various Protocols like TCP complying with RFC793, UDP with RFC768 and IP Protocol with RFC791.

3.8. Ethernet Control Function

Ethernet Control Function is to process MAC, Ethernet protocol or IEEE 802.3 Protocol and perform ARP for TCP/IP communications with CSMA/CD data network.

3.9. FAX Relay Function

FAX Relay Function is to send Facsimile Data instead of voice data through packetized network so that FAX data may be packetized and terminated via internet.

3.10. Console Command I/O Function

Console Command I/O Function is to operate and manage the equipment through the console at the site in which the equipment is installed. It decodes a command typed in the console to perform the operation.

3.11. Telnet Remote Control Function

Telnet Remote Control Function is for an operator to access the equipment using RFC854 Telnet Protocol in a remote system for operation and management. The operator may see and maintain the system via access through Telnet from a remote

location.

3.12. Diagnostic Function

Diagnostic Function is use when there is a need for customers or operators to test the device. Test results give limited information to customer/operator but serves as a vital tool to provide optimal customer service.

3.13. DHCP Function

DHCP Function is needed to dynamically assigned IP address, net-mask, and default gateway for the DV-201DM. DV-201DM has DHCP client in it and performs the function of changing IP addresses, net mask and default gateway.

3.14. WEB-based Management Function

Web-based management function is needed to set DV-201DM configuration parameters remotely through web browser. Operator is permitted to access DV-201DM to change configuration parameters through web browser or through HTTP protocol.

3.15. Operation Authentication Function

Operation authentication function is needed to authenticate an operator by prompting the user ID and password when the operator access DV-201DM

3.16. Configuration function with connected telephone

This function enable you to set DV-201DM initially using connected telephone. So you don't have to access to the device for setting with telnet or http connection. Just connect telephone to the device.

3.17. Remote Upgrade Function

For remote maintenance or when S/W upgrade is necessary in the system using ftp service.

3.18. Configuration Data Server Function

With CDS Server, configuration data is downloaded to the system automatically and automatically installed

3.19. TFTP/ FTP Processing Function

TFTP processing function is for remote maintenance and performs functions defined in RFC1350.

FTP processing function is for remote maintenance and performs the functions defined in RFC1986.

Ch.2	
	Installation and Maintenance

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1 Hardware installation & configuration

1.1 Start Installation

In this chapter, it will explain how to install DV-201DM. Connect power cable to DC power input of system, and the other part of AC/DC adaptor to AC power source.

1.2 Safety Warning

When installing and operating the DV-201DM system, follow the safety guideline provided below to help prevent serious injury and/or damage to DV-201DM system.

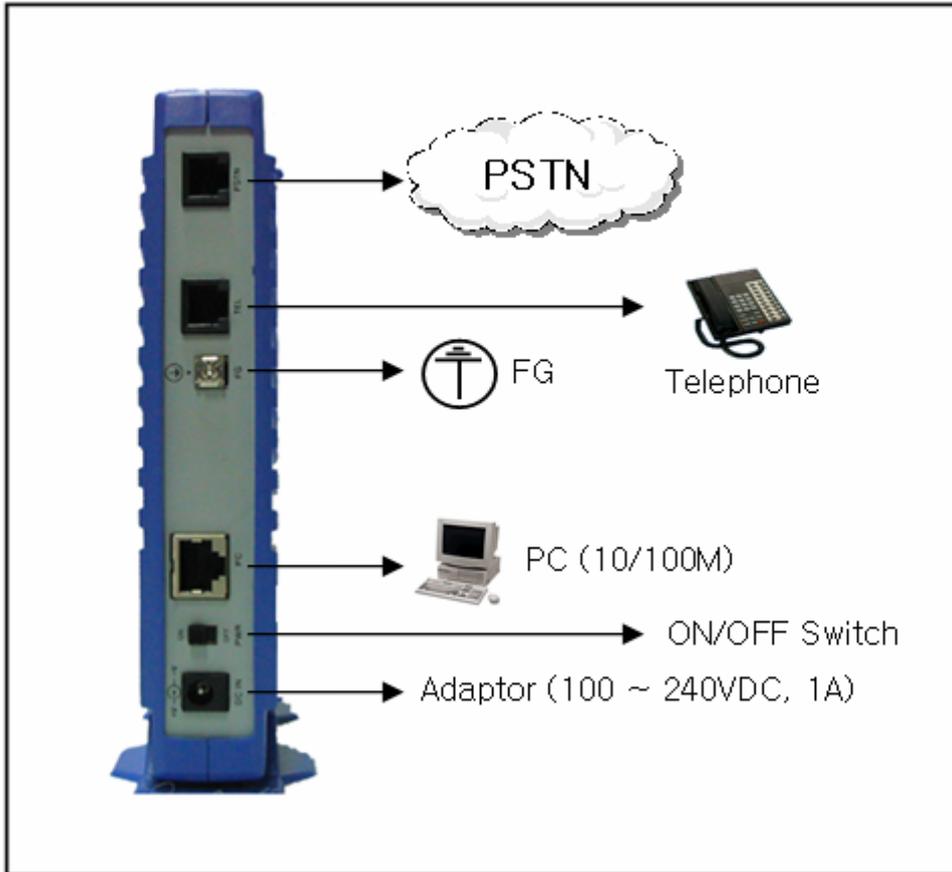
- (1) Do not personally perform any maintenance (Unpacking) on this system. This system does not contain any user serviceable parts. Maintenance is to be performed only by qualified personnel.
- (2) To avoid the risk electrical shock while installing H/W, you must remove the power cord socket from the power connector on the back of DV-201DM.
- (3) Put on a wristlet for preventing static electricity.
- (4) Do not use any other power adaptor then the one provided with the DV-201DM.
- (5) Maintain between 0°C and 40°C and it must be well ventilated
- (6) When removing or connecting cables, always unplug DV-201DM power.
- (7) Make sure all ventilation chambers are not obstructed at all times.
- (8) Do not put heavy equipment and machinery on the system.

1.3 How to install H/W

- (1) Place on a flat surface.
- (2) Make sure that all rubber feet are attached. (for cooling system)
- (3) Connect power cord to system.

1.3.1 Cable Connection

Figure1 shows the cables are connected to rear of system.

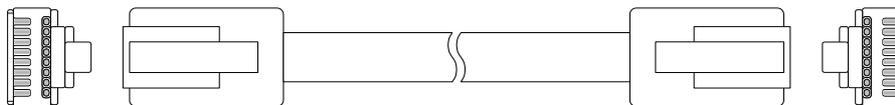


<Figure 1> DV-201DM Cable connection

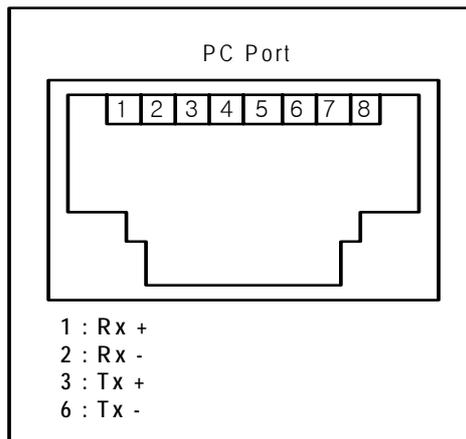
1.3.2 Connecting Ethernet cable

The Straight cable is also used to connect LAN port to a terminal like workstation, PC, or notebook. When connecting LAN port to HUB, Cross-over cables must be used.

Maximum length of RJ-45 should be less than 85m.



<Figure 2> RJ-45 cable (UTP cable)



<Figure 3> Ethernet Port pin connection

RJ-45 Plug (PC)		connect	RJ-45 Plug (PC Port)	
Pin	Signal		Pin	Signal
1	TX+	↔	1	TX+
2	TX-	↔	2	TX-
3	RX+	↔	3	RX+
4	NC		4	NC
5	NC		5	NC
6	RX-	↔	6	RX-
7	NC		7	NC
8	NC		8	NC

<Table 1> Connection between WAN port and modem

1.3.3 FXS port

FXS port is for telephone or FAX connection using RJ-11 connector to the terminal.

RJ-11 Plug (Analog phone/Fax)		Connect	RJ-11 Plug (FXS port)	
Pin	Signal		Pin	Signal
1	NC		1	NC
2	NC		2	NC
3	Ring	↔	3	Ring
4	Tip	↔	4	Tip
5	NC		5	NC
6	NC		6	NC

<Table 2> FXS port cable pin connection

1.3.4 PSTN port

This port is used for connecting to CO(Central Office) Trunk, connect to PSTN or FXS I/F of PBX using RJ-11 Connector.

RJ-11 Plug (PSTN)		Connect	RJ-11 Plug (PSTN port)	
Pin	Signal		Pin	Signal
1	NC		1	NC
2	NC		2	NC
3	Ring	←→	3	Ring
4	Tip	←→	4	Tip
5	NC		5	NC
6	NC		6	NC

<Table 3> PSTN port pin connection

1.3.5 Cable Length

Maximum Length of cable, which is connected to DV-201DM, must comply with the following:

1) Ethernet

Maximum length of 10/100BaseT Ethernet is 330 feet/100 meters. (complies with IEEE802.3 Recommendation)

2) Analog line

Maximum length of analog line is defined by loop resistance. Maximum loop resistance is up to 600Ω (included telephone/voice switch).

1.3.6 LED Status

When DV-201DM comes up, you can judge the operation status of system by LED status.

	LED ON	LED OFF	BLINK
PWR	Power ON	Power OFF	-
STS	Device fault	Device fault	Normal operation
LINE	Connected to modem	Fail to connect	Connecting
PPP	Connected to internet	Connecting	

G/K or CA	Registered	Registering	-
LAN	LAN cable is Connected	LAN cable is Not connected	-
TEL	OFF HOOK	ON HOOK	-
VOIP	Calling via internet	No call via internet	-
PSTN	Calling via PSTN	No call via PSTN	-

2 How to install S/W

2.1 PC configuration

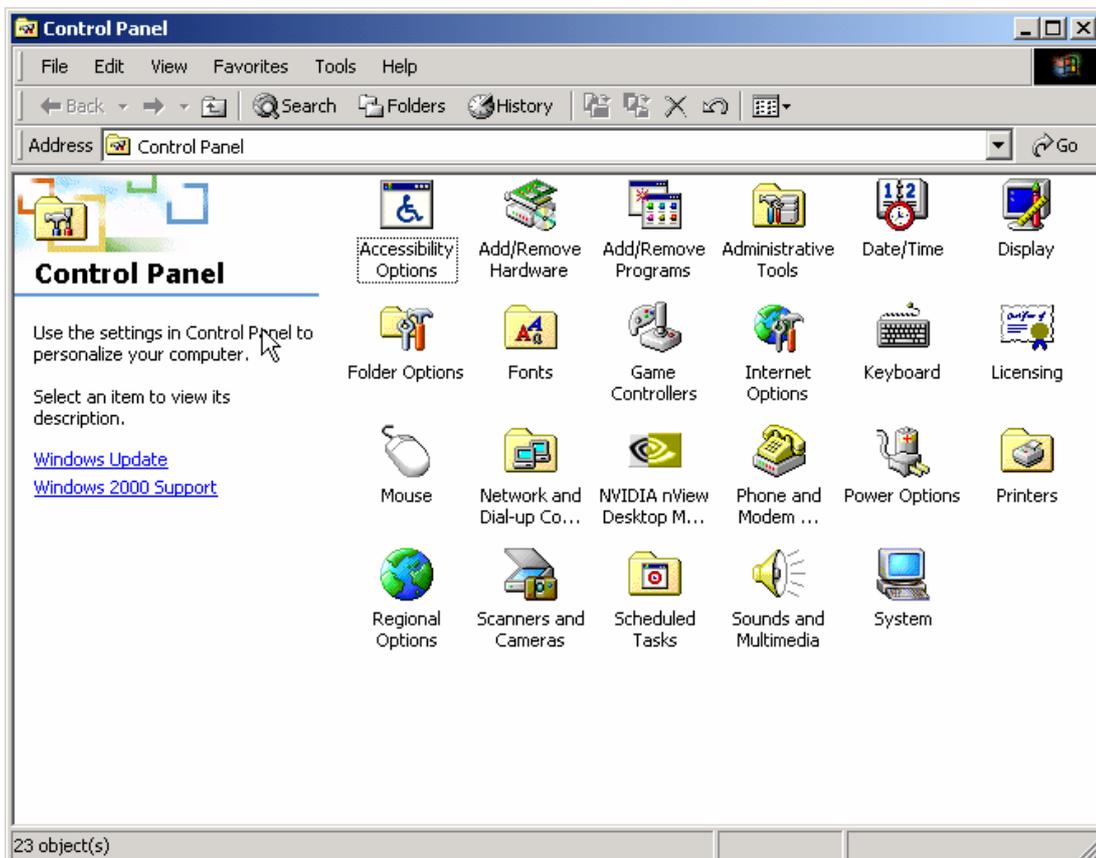
After installing system according to service network diagram of 1.2, access the equipment using Telnet or Web browser, you should assigned IP address anywhere between 192.168.1.1 and 192.168.1.253.

In next paragraph, we describe how to configure dynamic IP when DHCP server function is activated. In 2.1.1 paragraph, we describe how to configure static IP according to user's network environment.

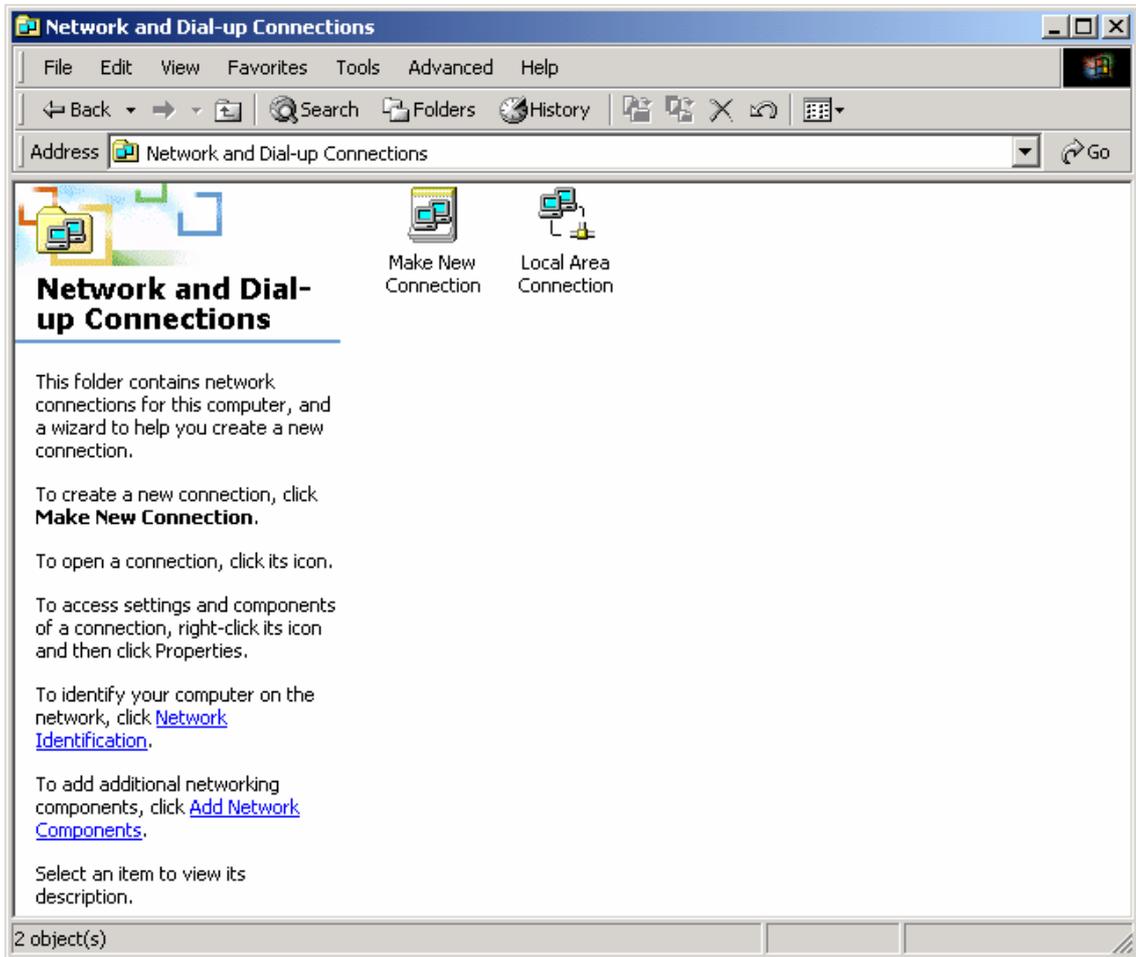
2.1.1 Configuring Dynamic IP

DV-201DM supports DHCP server function to assign private IP to PC. Our software enables users to use DV-201DM in a Dynamic Network environment.

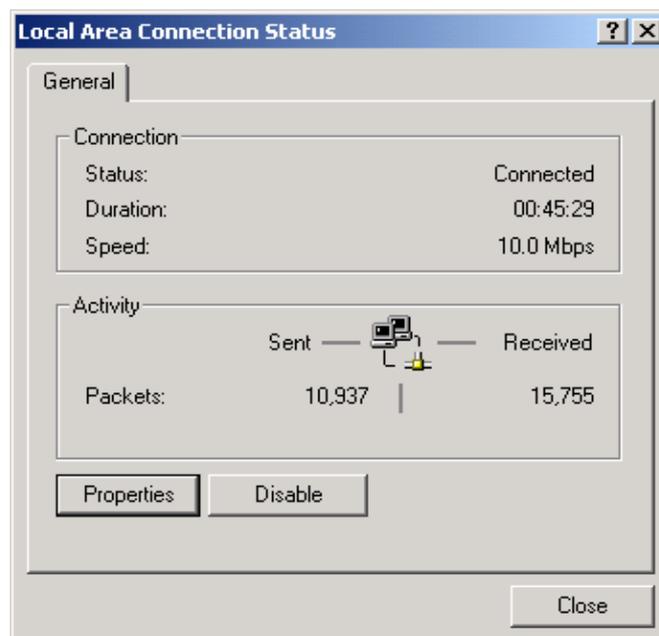
1. Open "Control Panel" and double click "Network and Dial-up connection" icon.



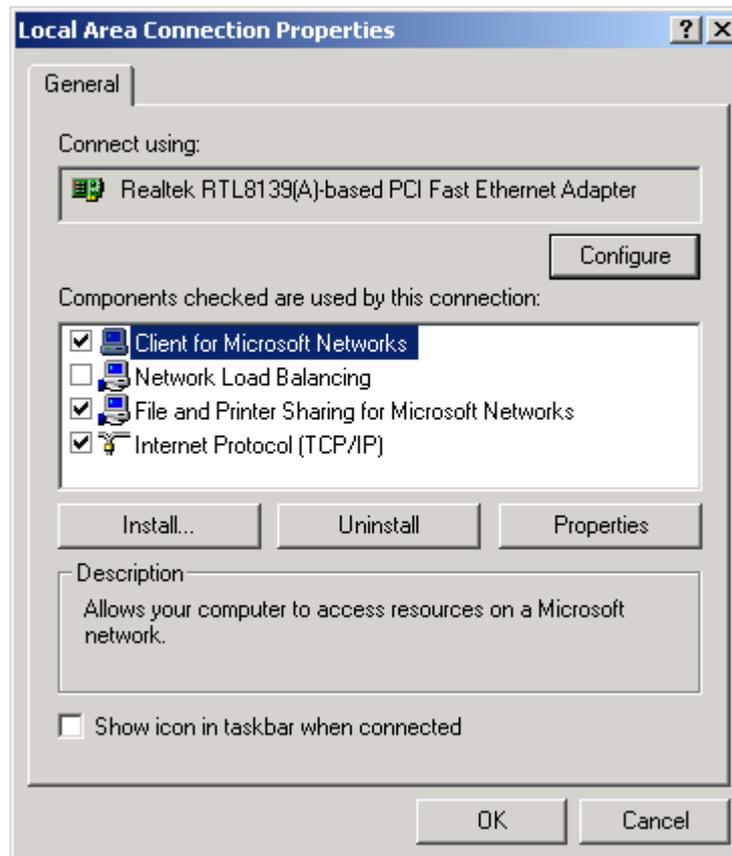
2. Double click “Local area connection” in network connection window.



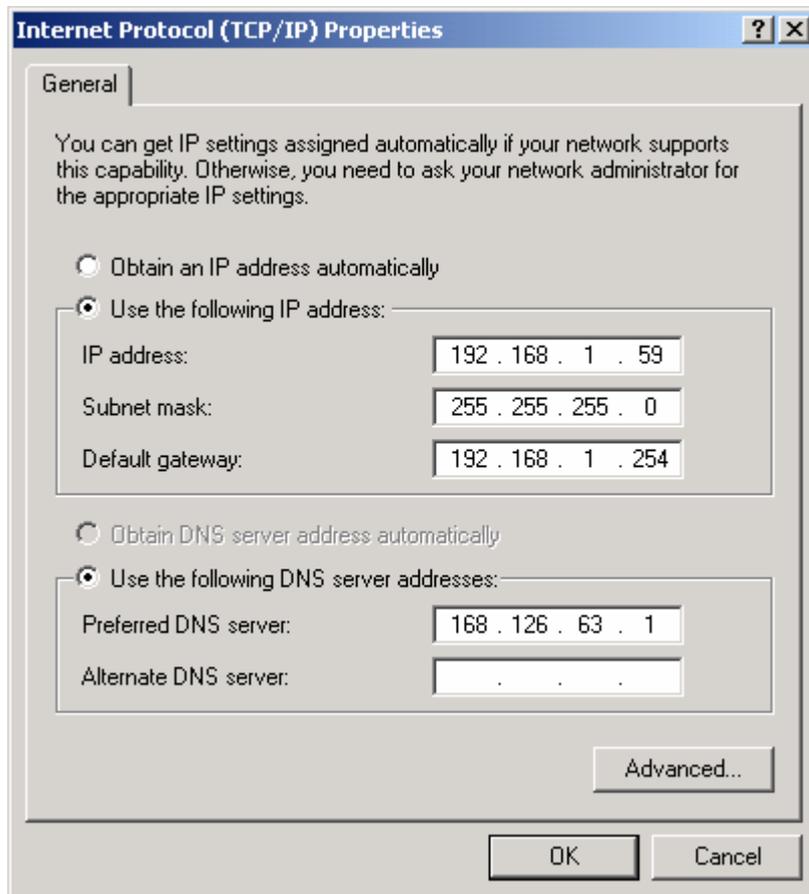
3. Click on “Properties” button.



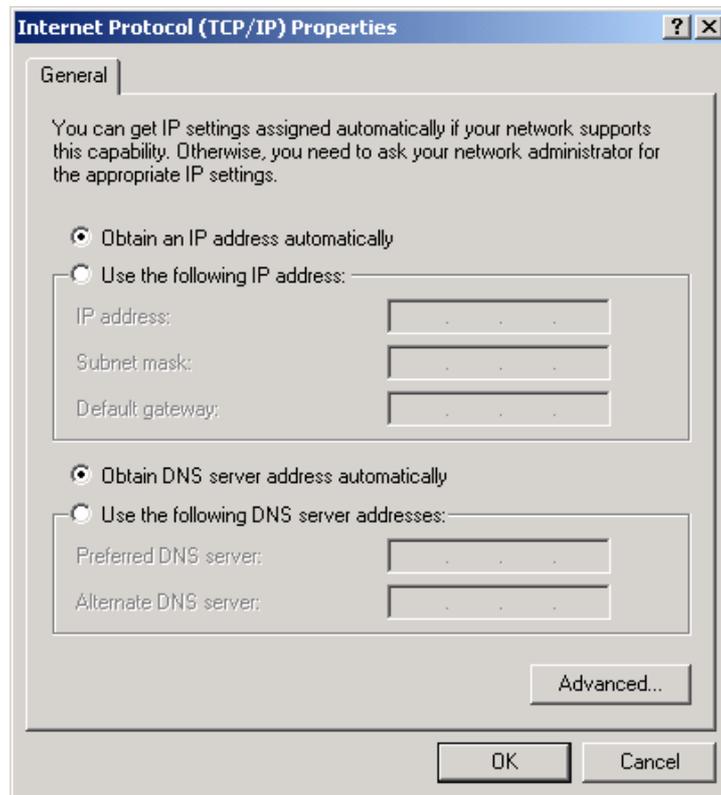
4. Select "Internet protocol (TCP/IP)" and click on "Properties" button.



5. Select “IP address automatically and “DNS address automatically” in internet protocol attribute window.



6. Click “OK” button in internet protocol attribute window and then close all windows opened.



7. Open “COMMAND PROMPT” window and Execute “ipconfig” command to make sure that your PC is assigned IP address, subnet mask and default gateway value.

(Verify: IP address range is between 192.168.1.10 ~ 192.168.1.29)

Remember the IP Address value should be in 192.168.1.1~ 192.168.1.253, subnet mask should be 255.255.255.0, and Default Gateway should be 192.168.1.254.

```
[c:\]ipconfig
```

Windows IP Configuration

Ethernet adapter local area connection:

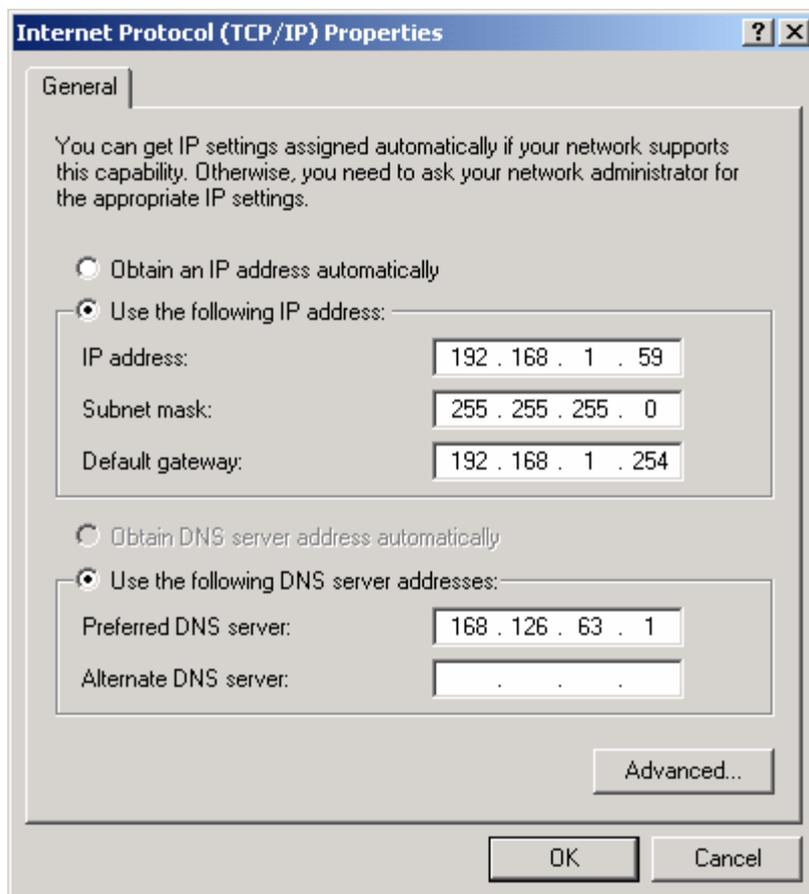
```
Connection-specific DNS Suffix . :  
IP Address. . . . . : 192.168.1.10  
Subnet Mask . . . . . : 255.255.255.0  
Default Gateway . . . . . : 192.168.1.254
```

2.1.2 Force Static IP

If your PC was not assigned IP information after the procedure above, you can manually assign IP information by doing the following. From above, follow steps 1 through 4 then follow the procedures below.

1. Choose “Use the following IP address”, enter IP address, subnet mask, Default gateway. If static IP is configured in DV-201DM, also enter DNS server information.

IP address : any address of 192.168.1.1
through 192.168.1.253
Subnet mask : 255.255.255.0
Default gateway : 192.168.1.254



Note : When DV-201DM is allocated IP by DHCP protocol, input the value and confirm DNS server address.

2. Click “OK” button, and close all windows.

3. From windows, Goto "run". Type in "command". From "Command Prompt" screen, type "ping 192.168.1.254" and press "Enter". If the following message is displayed, your computer is properly connected with DV-201DM.

```
[c:\]ping 192.168.1.254
```

```
Pinging 192.168.1.254 with 32 bytes of data:
```

```
Reply from 192.168.1.254: bytes=32 time=3ms TTL=255
```

```
Reply from 192.168.1.254: bytes=32 time=3ms TTL=255
```

```
Reply from 192.168.1.254: bytes=32 time=2ms TTL=255
```

```
Reply from 192.168.1.254: bytes=32 time=1ms TTL=255
```

```
Ping statistics for 192.168.1.254:
```

```
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

```
Approximate round trip times in milli-seconds:
```

```
    Minimum = 1ms, Maximum = 3ms, Average = 2ms
```

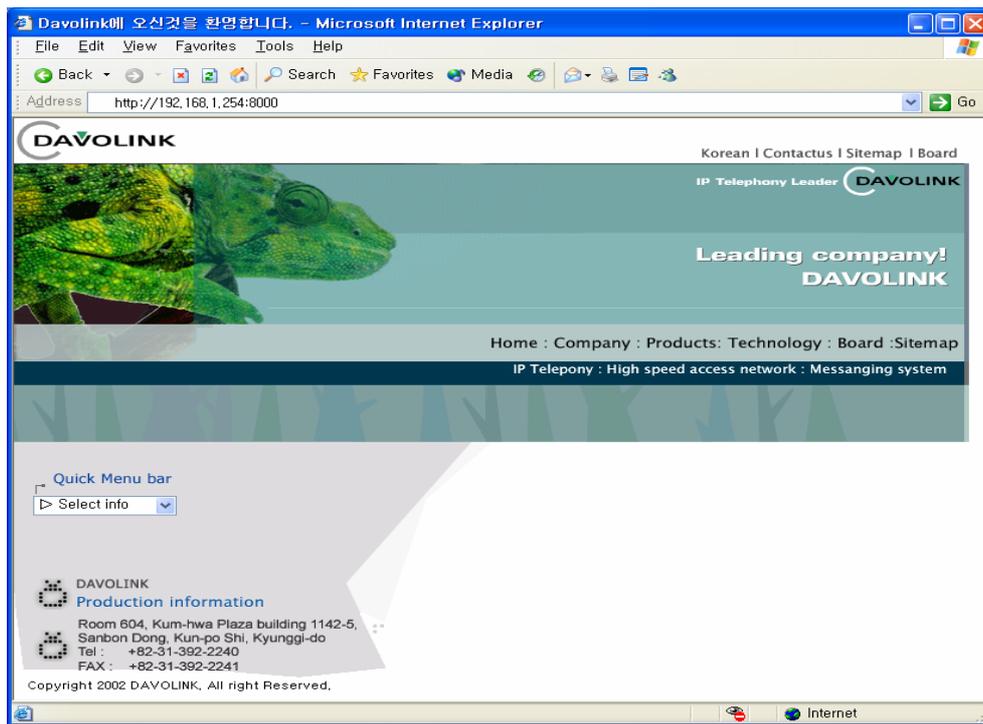
```
[c:\]
```

2.2 Accessing the system with HTTP

2.2.1 Logging in to the Web Manager

Before accessing Web Manager, verify that the DV-201DM LEDs are blinking. This indicates that the DV-201DM is ready to be configured.

1. Open a new Web browser window and enter the DV-201DM's IP address, 192.168.1.254:8000 and press Enter.

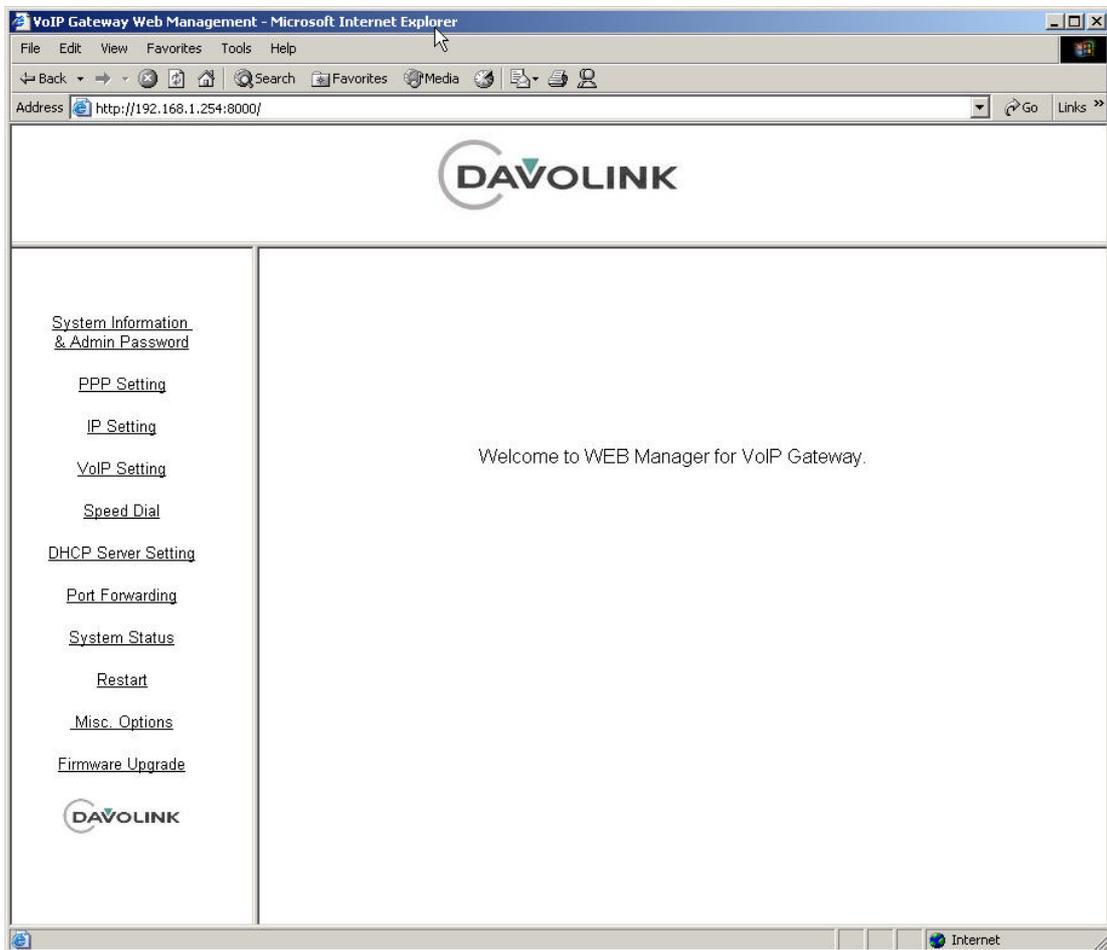


2. Enter your user name and password.
The default user name is root and the default password is admin.



DV-201DM for H.323 & SIP

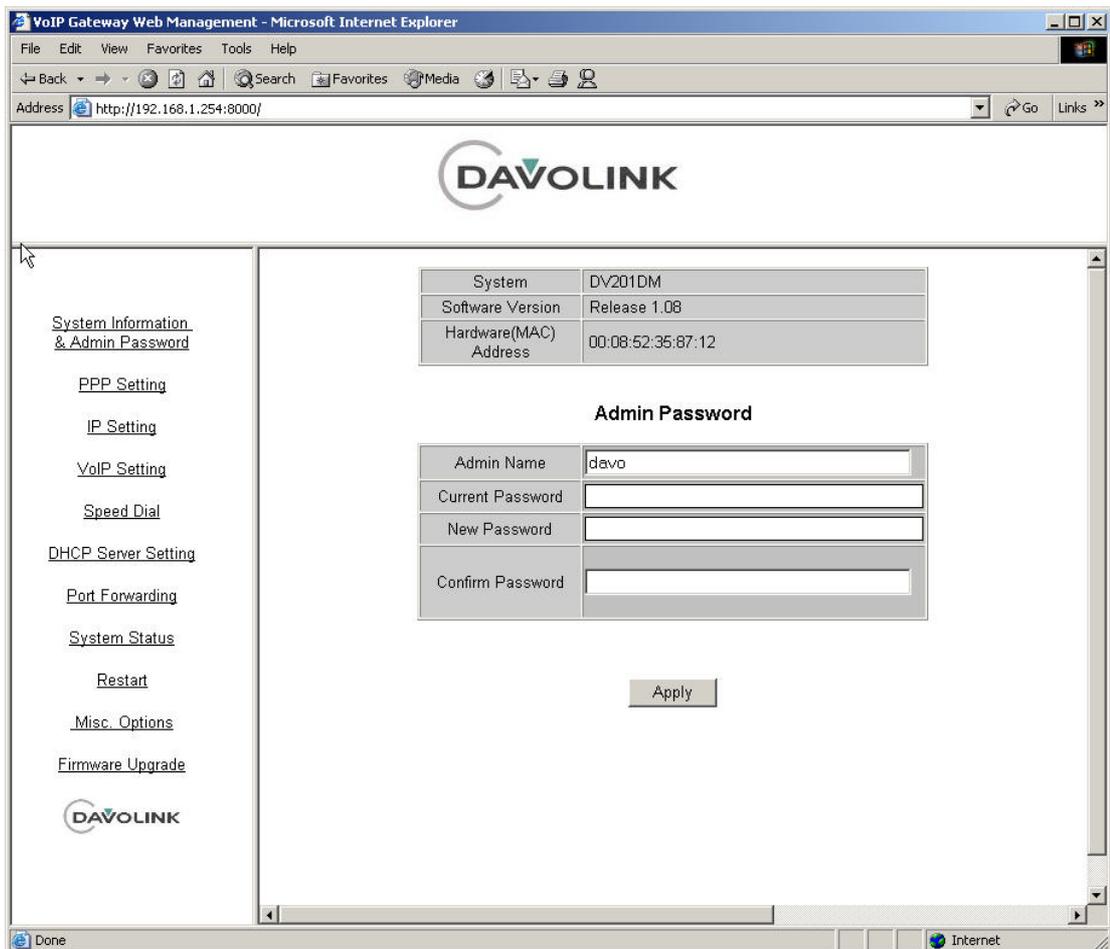
3. When the DV-201DM Web Manager Opening page is displayed. You are logged in.



2.2.1 Using the DV-201DM Web browser

From main DV-201DM home page you can access any option by clicking the links illustrated on the left column. For example: click the System Information & Admin Password link to access the System Information and Change Password page.

1. System Information and Change Password



The Change Password page shows the DV-201DMs name, current software version and MAC address. You can also change the user's password from this page.

2. PPP Configuration.

Click the [PPP Setting](#) link to access the IP Configuration page, illustrated below.

The screenshot shows a web browser window titled "VoIP Gateway Web Management - Microsoft Internet Explorer". The address bar shows "http://192.168.1.254:8000/". The main content area displays the "PPP Settings" page. On the left, there is a navigation menu with links: System Information & Admin Password, PPP Setting (selected), IP Setting, VoIP Setting, Speed Dial, DHCP Server Setting, Port Forwarding, System Status, Restart, Misc. Options, and Firmware Upgrade. The main content area contains the following form:

Dialing Number	<input type="text"/>
User Name	<input type="text"/>
Password	<input type="password"/>
Connection Type	<input checked="" type="radio"/> Always On <input type="radio"/> Dial on Demand
Idle Timer	Auto disconnect idle time <input type="text" value="0"/> Secs
Retry-Connection Timer	<input type="text" value="30"/> Secs (Minimum: 15 sec)
Country Name	<input type="text" value="KOREA"/>
Dial Mode	<input type="radio"/> Pulse <input checked="" type="radio"/> Tone
Modem Speaker	<input checked="" type="radio"/> ON <input type="radio"/> OFF

Below the form is an "Apply" button.

This page displays the current PPP Configuration.

Any of parameters on the PPP Configuration page can be modified by simply entering the desired values into the respective boxes.

Dialing Number : ISP's Phone Number.

User Name : User ID given by ISP.

Password : Password of the user ID.

Connection Type : By default it is Always On.

Always On : In this mode the user is always connected to the ISP.

Dial on demand : In this mode the user is connected to the ISP when he off hooks the phone.

Idle timer : When the connection type is dial on demand and the user does not use telephone or PC for idle timer value, the PPP connection is dropped automatically.

Retry-Connection Timer : When the connection type is always on and the connection to the ISP is disconnected, After Retry-connection timer value the system will try to connect the ISP automatically. The Retry-connection timer value should be at least 15 seconds. You can choose the number 15 to 30

Country Name : The name of your country, if your country name is not there you can select similar country.

Dial Mode : The analog telephone line type.

Modem Speaker : To turn on and off Modem speaker.

4. System Status

Click [System Status](#) link to access the System Status page, illustrated below.

The screenshot shows a web browser window titled "VoIP Gateway Web Management - Microsoft Internet Explorer" with the address bar displaying "http://192.168.1.254:8000/". The page features the DAVOLINK logo at the top center. On the left side, there is a navigation menu with links: "System Information & Admin Password", "PPP Setting", "IP Setting", "VoIP Setting", "Speed Dial", "DHCP Server Setting", "Port Forwarding", "System Status", "Restart", "Misc. Options", and "Firmware Upgrade". The main content area is titled "Current IP Address of System" and contains three tables:

Network Port IP	
WAN Status	Allocating.....
IP Address	0.0.0.0
Subnet Mask	0.0.0.0
Default Gateway	0.0.0.0
DNS Server	0.0.0.0

PC Port IP	
IP Address	192.168.1.254
Subnet Mask	255.255.255.0
LAN Gateway	0.0.0.0

VoIP Status	
VoIP Registration	Connecting to 0.0.0.0
PC Cable	Normal

PPP / MODEM Status	
Dial Up Modem State	DOWN
PPP State	NEGOTIATING
Modem Connection Speed	0 bps
Modem Connection Time	00:00:00
Last Error	INVALID PPP SETTING

Below the tables, there is a link: [Show detailed MODEM script log](#). The browser's status bar at the bottom shows "Done" and "Internet".

The system status page shows current Internet ,PPP and VOIP connection status. This page is refreshed for every 20 seconds period.

Network port IP: Shows the WAN port IP address allocated by ISP.

PC Port IP: Shows the LAN port IP set by the user.

VOIP Status: Shows the registration state to proxy server or Gatekeeper.

PPP Status: Shows the Modem connection status and PPP status.

Modem Connection Speed: Shows the current modem connection speed.

Modem Connection Time: Shows the modem connection time (PSTN call to ISP).

Last Error: Last Error code.

Modem Script Log: If Modem connection is failed, you can see the process of dialing and connecting PPP. This page will be refreshed automatically for every 20 seconds period.

5. IP Configuration

Click the [IP Setting](#) link to access the IP Configuration page, illustrated below.

LAN IP Address (PC Port)	
LAN IP Address	192.168.1.254
Subnet Mask	255.255.255.0
LAN GATEWAY	0.0.0.0
Apply	

LAN MODE		
<input checked="" type="radio"/> NAT Enable	<input type="radio"/> One IP	<input type="radio"/> NAT Disable
Apply		

Inner/Outer NAT Setting	
(If you install system using private IP address (inner NAT/NAPT), select "Inner NAT" and enter "ATS Address" or "External IP Address".)	
<input checked="" type="radio"/> Outer NAT	No configurable item
<input type="radio"/> Inner NAT	Address Translation Server (ATS) Address
	External IP Address
	0.0.0.0
Apply	

Only **root** and **manager** can access this web page.

This page displays the current LAN IP Address and LAN mode.

Any of parameters on the IP Configuration page can be modified by simply

entering the desired values into the respective boxes.

By default LAN mode is One IP.

In One IP mode, the NAT Is enabled and One IP is on.

In NAT Enable mode, the NAT is enabled and One IP is off.

In NAT Disable mode, the NAT IS disabled and One IP is off.

6. VoIP Setting

Click the [VoIP Setting](#) link to access the Port Configuration page, illustrated below.

< H.323 setting >

The screenshot shows a web browser window titled "VoIP Gateway Web Management - Microsoft Internet Explorer" with the address bar showing "http://192.168.1.254:8000/". The main content area displays the "DAVOLINK" logo and a configuration table for H.323 settings. A left sidebar contains navigation links: System Information & Admin Password, PPP Setting, IP Setting, VoIP Setting (highlighted), Speed Dial, DHCP Server Setting, Port Forwarding, System Status, Restart, Misc. Options, and Firmware Upgrade. The configuration table includes fields for Primary G/K IP, Secondary G/K IP, H.323 ID, Area Code, Phone Number 1, Virtual Calling Number 1, Phone Number 2, Virtual Calling Number 2, PSTN Access Number, VoIP Service Provider, PSTN Ring Handling (2 Ports Product only), PSTN Ring Handling when Busy, Router Link Check, Using Digit Map, Phone Volume, Using VoIP Call Indication Tone, VoIP Call Listen Port (Q.931 Listen Port: default 1720), and FAX settings for Port 1 and Port 2. An "Apply" button is located at the bottom of the table.

Primary G/K IP	None
Secondary G/K IP	None
H.323 ID	DV201DM
Area Code	None
Phone Number 1	None
Virtual Calling Number 1	None
Phone Number 2	None
Virtual Calling Number 2	None
PSTN Access Number	##
VoIP Service Provider	None
PSTN Ring Handling [2 Ports Product only]	<input type="radio"/> Ring TEL1 and TEL2 <input checked="" type="radio"/> Ring TEL1 or TEL2 (TEL1 first) <input type="radio"/> Ring TEL1 only
PSTN Ring Handling when Busy	<input checked="" type="radio"/> Beep <input type="radio"/> Ignore Ring
Router Link Check	<input type="radio"/> Yes <input checked="" type="radio"/> No
Using Digit Map	<input checked="" type="radio"/> Yes <input type="radio"/> No
Phone Volume	0
Using VoIP Call Indication Tone	<input type="radio"/> Yes <input checked="" type="radio"/> No
VoIP Call Listen Port (Q.931 Listen Port: default 1720)	1720
FAX	Port 1 <input type="radio"/> Enable <input checked="" type="radio"/> Disable
	Port 2 <input type="radio"/> Enable <input checked="" type="radio"/> Disable

Apply

Only **root** and **manager** can access this web page.

You should enter Primary Gatekeeper IP Address, Secondary Gatekeeper IP Address and H323 ID provided by Internet Telephony Service Provider.

Primary G/K IP address : It is the first G/K IP address

Secondary G/K IP address : It is the second G/K IP address. It is for redundancy

H.323 ID : G/W is authenticated from G/K with this ID.

Area Access Code : Area access code is automatically inserted before the dialed digits when you place local calls.

Phone Number 1 : The telephone number assigned to FXS port 1.

Virtual Calling Number 1 : The CID assigned to FXS port 1.

Phone Number 2, Virtual Calling Number 2 : applicable to the DV-102 only.

PSTN Access Code : You can place the outgoing calls over the PSTN by dialing PSTN access code first.

PSTN Ring Handling when Busy : The incoming PSTN call is ignored or generates beep when the FXS port is used for a outgoing call.

Router Link Check : This option decide whether check link to default router or not.

Using Digit Map : This option decide whether use digit map or not. It is only used in Korea. To use other area and country, it have to be modified properly.

Phone Volume : Voice signal level from FXS to telephone can be changed. The default value is 0, and can be set from -5 to +5.

Using VoIP Call Indication Tone: This option let customer distinguish VoIP call from PSTN call. If you select "Yes", when you call via internet, you will hear high pitch sound when dialing

VoIP Call Listen Port : VoIP Call Listen port number can be changed. The default value is 1720.

FAX : Whether FXS port is used for fax or not

< SIP setting >

Click the [VoIP Setting](#) link to access the Port Configuration page, illustrated below.

The screenshot shows the 'VoIP Gateway Web Management' interface in Microsoft Internet Explorer. The address bar shows 'http://192.168.1.254:8000'. The page title is 'VoIP Gateway Web Management - Microsoft Internet Explorer'. The main content area displays the 'VoIP Setting' configuration page. On the left is a navigation menu with links: System Information & Admin Password, PPP Setting, Speed Dial, System Status, IP Setting, VoIP Setting, DHCP Server Setting, Port Forwarding, Restart, Misc Options, and Firmware Upgrade. The 'VoIP Setting' page contains a configuration form with the following fields and values:

URL Mode	<input checked="" type="radio"/> SIP URL <input type="radio"/> TEL URL
VOIP Server Name	192.168.2.4
Service Domain Name	192.168.2.4
VOIP User ID	
VOIP User Password	
VOIP Password Confirm	
Phone Number	533
Area Code	none
PSTN Access Number	0000
PSTN Automatic Rerouting	<input type="radio"/> Yes <input checked="" type="radio"/> No
PSTN Ring Handling when Busy	<input type="radio"/> Beep <input checked="" type="radio"/> Ignore Ring
Using VoIP Call Indication Tone	<input checked="" type="radio"/> Yes <input type="radio"/> No
Router Link Check	<input type="radio"/> Yes <input checked="" type="radio"/> No
Using Digit Map	<input checked="" type="radio"/> Yes <input type="radio"/> No
Caller ID Transmission	<input checked="" type="radio"/> Yes <input type="radio"/> No
Caller ID Receiving mode	NONE

Below the form is an 'OK' button. At the bottom of the page, there is a note: '2 ports product supports "Call Pickup" and "Interphone" features. The following codes are pre-defined phone number code for using useful features. # : Call Pickup (2 Ports Product only) *0 : Interphone (2 Ports Product only) ***1 : Play current network IP address via phone.'

Only **root** and **manager** can access this web page.

URL Mode: URL is Uniform Resource Locator, address-format to access specified URL.

VoIP Server Name: Proxy Server name or IP address.

Service Domain Name: Domain Name.

VoIP User ID, VoIP User Password, VoIP Password Confirm:
DV-201DM is authenticated by proxy server with this ID and password.

Phone Number 1: The telephone number assigned to FXS port 1.

Area Code: You may insert a access code for security.

Ex. By inputting 15 into this box, you must dial 15 before dialing outbound on all calls.

PSTN Access Number: To use the emergency PSTN backup channel, you must input an access code that opens the channel to access the PSTN line.

PSTN Automatic Rerouting: This option decides whether rerouting function is used when Internet link is down or not.

PSTN Ring Handling when Busy: The incoming PSTN call is ignored or generates beep when the FXS port is used for a outgoing call.

Using VoIP Call Indication Tone: This option let customer distinguish VoIP call from PSTN call. If you select “Yes”, when you call via Internet, you will hear high pitch sound when dialing.

Router Link Check: This option decide whether check link to default router.

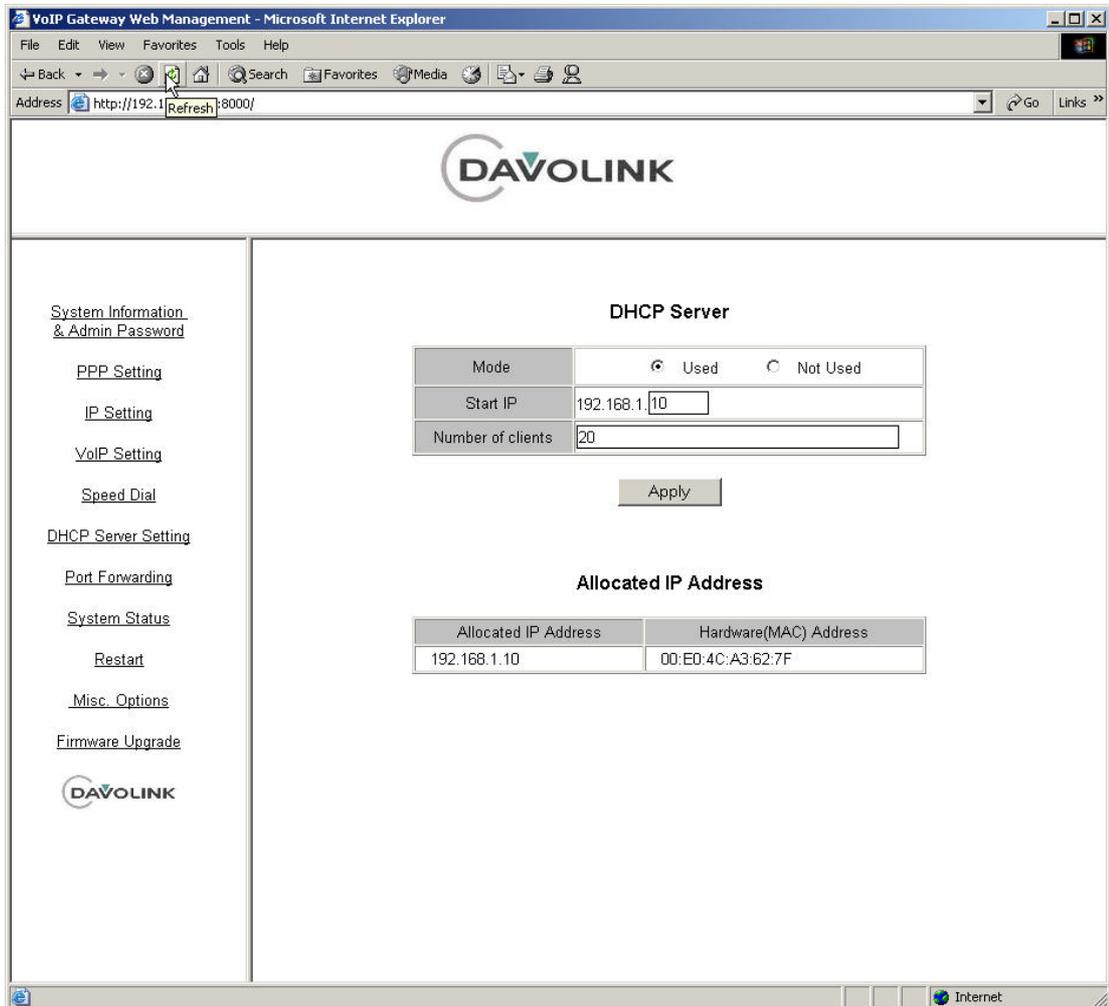
Using Digit Map: Only used in Asia.

Caller ID Transmission: decides whether calling party number is sent or not.

Caller ID Receiving mode: When the G/W receive the originating number information with a call, this option is used. You can configure with three types. None, Korea, Japan.

7. DHCP Server Configuration

Click the [DHCP Server Setting](#) link to access the DHCP Server Dial Configuration page, illustrated below.



Only **root** and **manager** can access this web page.

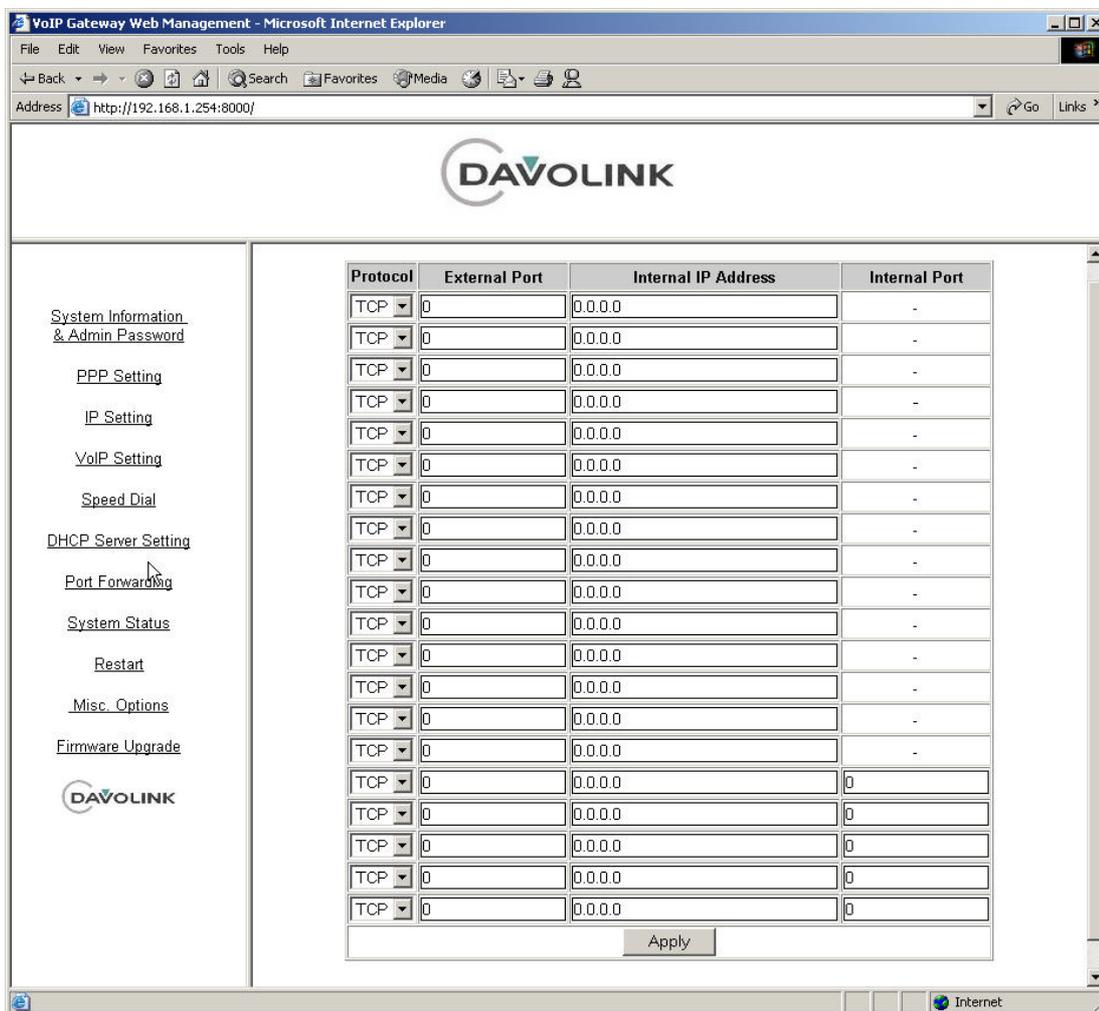
When using for DHCP Server setting, the starting IP address and the number of DHCP clients needs to be configured

Allocated IP Addresses

When there are multiple users, this page shows the how IP addresses are matched with each users' MAC address.

8. Forwarding Ports Configuration

Click [Port Forwarding](#) link to access the Ports Configuration page, illustrated below.

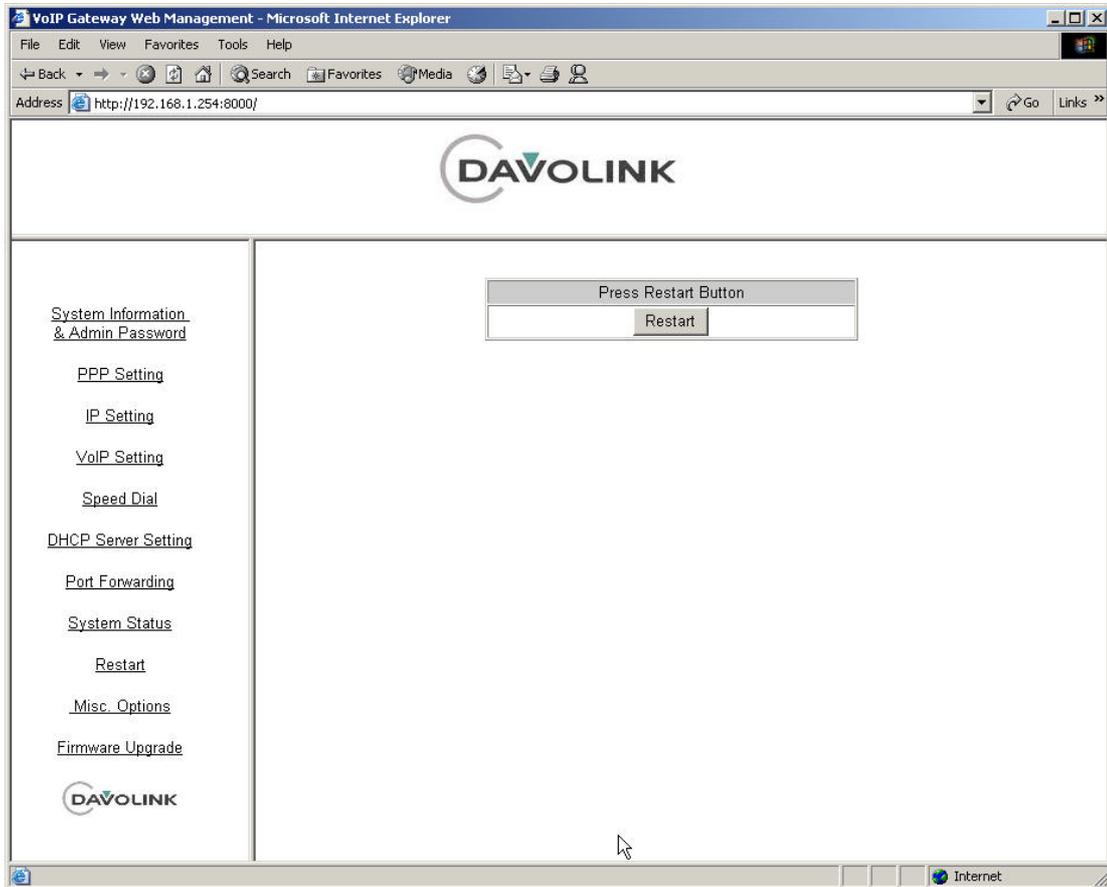


Only **root** and **manager** can access this web page.

When the DV-201DM is used with the NAT server, all the packets from the specific UDP/TCP ports are forwarded to the specified IP addresses.

9. Restart System

Click Restart link to access the Restart System page, illustrated below.



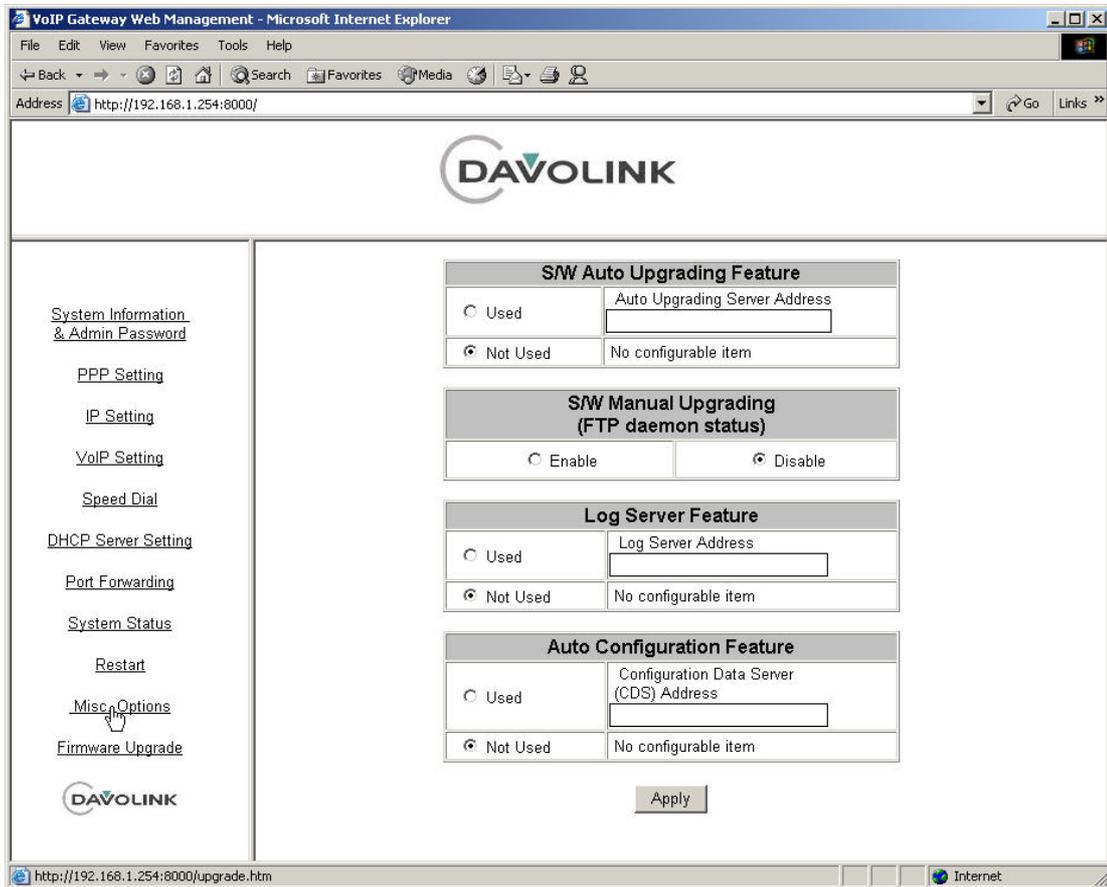
Only **root** and **manager** can access this web page.

To restart the system, click the Restart button.

You need to restart the system to apply the modified system parameters to the system.

10. Misc. Options setting

Click [Misc Options](#) link to access the System Software Upgrade page, illustrated below.



Only **root** and **manager** can access this web page.

The System software can be upgraded manually or automatically.

The server IP address is needed for the automatic upgrades.

The manual software upgrade procedure for DV-201DM is divided into stages.

Manual upgrade is only recommended for “Command Prompt” users.

1. Enable “S/W Manual Upgrading” option in “System Software Upgrade” page, and press “Apply” button.
2. Download the files needed for upgrade from the Upgrade FTP server to a client PC.
3. Open “Command Prompt” from Start Menu under Accessories or from “Run” and type “cmd” followed by Enter.
4. Move to the directory containing the downloaded files.
5. Perform the upgrade batch command.

C:\upgrade\dv201dmsip.bat 192.168.1.254 ⇐ the batch file is dv201dmsip.bat

6. The “Command Prompt” window display the FTP procedure messages

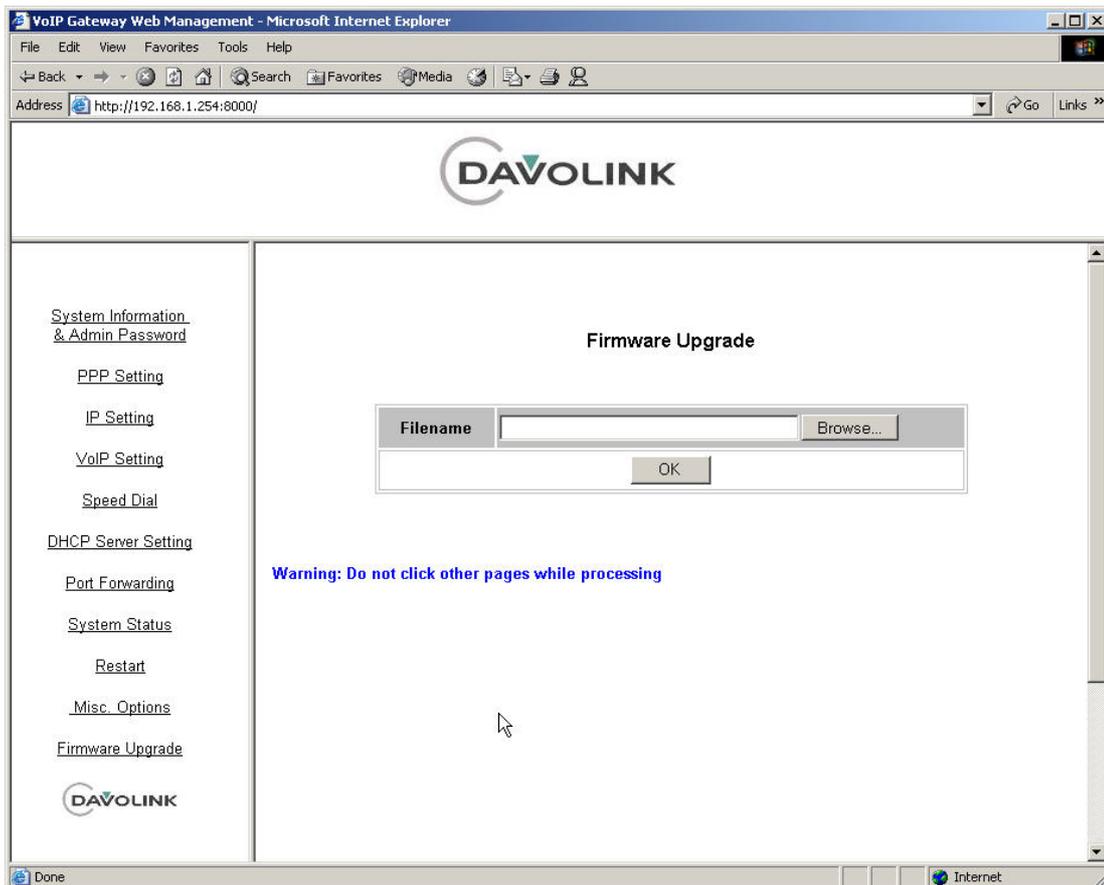
7. The system will be automatically restart, after completion of upgrade.

8. If log server feature is used, DV-201DM sends event messages to defined server (using UDP port 514). Select "Used", click "Apply" button.

When auto configuration feature is used, the created configuration data in CDS server is downloaded to DV system. Select "Used", enter the IP address of CDS server and click "Apply" button. By using the CDS server, you can control the configuration data of all systems remotely via the MAC addresses of each system.

11. Firmware Upgrade

Click [Firmware Upgrade](#) link to access the Firmware Upgrade page, illustrated below.

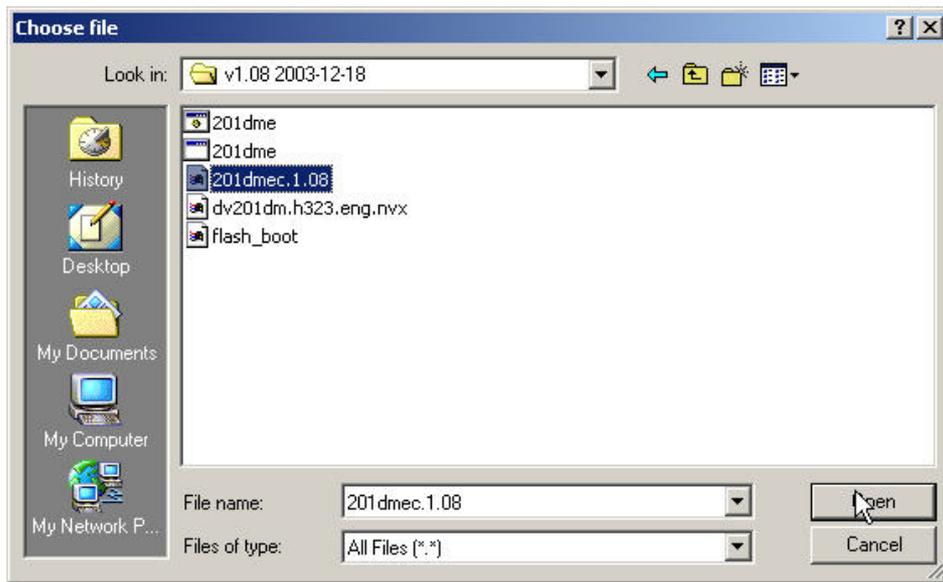


Only **root** and **manager** can access this web page.

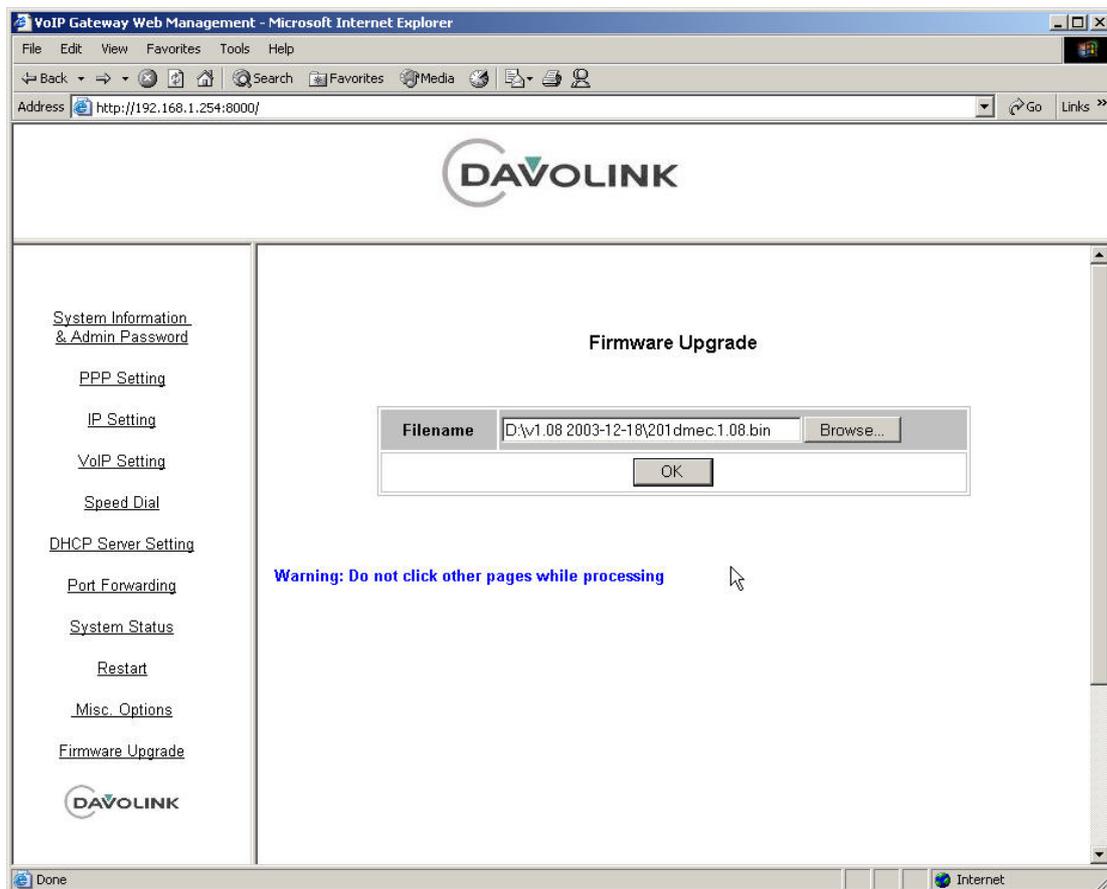
We can upgrade firmware of our product from this web page.

Do not click other pages while your upgrading the firmware of the product, it will result incompleteness of upgradation.

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Click “Browse” button, choose binary file (ex, *.bin) for upgrading in your PC. And Click “Open” button.



Click “OK” button, and DV201DM will be upgraded.

2.3 Accessing the system with TELNET

For VoIP Services, there are many configuration values you need to set. You may try telnet connection to set the configuration values. Detailed procedures are as follows:

- Connect PC to PC port of DV-201DM
- Open a "COMMAND PROMPT" Command Window.
- Try pinging to 192.168.1.254. If you get response, you can proceed to the next step.
- Type "telnet 192.168.1.254 6000", and you can log-in to DV-201DM.
- Try "root" for login name, "admin" for password.
- Reply "DV_GW>", you've accessed DV-201DM.

[Example]

```
Trying 192.168.1.254 (PORT: 6000)...
Connected to 192.168.1.254...
```

```
DV201DM Internet Phone Gateway System
Made by Davolink, Inc.
Motorola MPC850
SW: Release 1.00(2003-10-1 PM 06:23:26)
HW: MPU 0.51 (1Ch FXS + 1Ch FXO)
```

```
Now System Running...
```

```
Login: root
```

```
Password: *****
```

```
DV_GW>
```

2.3.1 Basic Commands

DIR (or LS)

"dir" is the same command as "ls" and displays the executable commands and sub-directory which can be run in the current directory. The sub-directory is displayed with "/" added after the last character to differentiate from the executable commands. The following example is the result after executing "dir" command on DV_GW> prompt, where DV_GW is system name. The capitalized letters in the directory name and command name is the minimum number of characters to be entered in changing a task directory or executing a command and they are used as abbreviations for a directory or a command.

[Example]

```
DV_GW> dir ↵
SYstem/      COnfig/      Ftp_client/  Test/        Netutil/
STatistics/  Vocfile/     Debug/       Memory/
```

CD

"cd" is a command to change the working directory. A directory you want to move can be given an direct path starting from a route directory or given a relative path based on the current directory. It is possible to change directory by typing the name of directory without "cd" command or by typing capitalized character of name of destination directory. Same results are displayed in case of typing "cd system" or in case of typing "system" or in case of typing "s" (minimized letter of destination directory "system"). If only "cd" without any character is typed, they can see root directory. The following example is an after executing "cd" command on root directory.

[Example]

```
DV_GW> cd system ↵
DV_GW/SYSTEM>
```

2.3.2 IP Configuration

1. Command directory

```
DV_GW/CONFIG/IP>
```

2. Command function

These commands are used for setting NAT Mode, IP address, subnet mask, gateway, Ethernet address .

3. Available commands

Commands	Description
SHOW	Show IP parameters
CHANGE	Change IP parameters
Ether set	Set Ethernet address

SHOW

This command display NAT Mode, IP address, subnet mask, and Ethernet address, which are required to perform LAN service and WAN service.

Executing “show” at “DV_GW/CONFIG/IP)” prompt can see details.

[Example]

```
DV_GW/CONFIG/IP> show ↵  
  
----- WAN Parameters -----  
NAT mode          - Enable  
WAN IP Address    - 0.0.0.0  
WAN Subnet Mask   - 0.0.0.0  
WAN Gateway       - 0.0.0.0  
Ethernet Addr    - 00:08:52:88:12:92  
LAN IP Address    - 192.168.2.12  
LAN Subnet Mask   - 255.255.255.240  
LAN Gateway       - 0.0.0.0  
----- DNS Parameters -----  
DNS Not Used  
-----
```

CHANGE

This command used for setting NAT mode, IP address, subnet mask, and Ethernet address.

Details can be seen by executing “show” at “DV_GW/CONFIG/IP>” prompt.

[Example]

```
DV_GW/CONFIG/IP> change ↵  
  
----- WAN Parameters -----  
NAT mode          - Enable  
WAN IP Address    - 0.0.0.0  
WAN Subnet Mask   - 0.0.0.0  
WAN Gateway       - 0.0.0.0  
Ethernet Addr    - 00:08:52:88:12:92  
LAN IP Address    - 192.168.2.12  
LAN Subnet Mask   - 255.255.255.240  
LAN Gateway       - 0.0.0.0  
----- DNS Parameters -----  
DNS Not Used  
-----
```

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```
1. Change NAT mode.
2. Change IP Address.
3. Change IP Netmask.
4. Change Def. G/W IP.
5. Change DNS Server IP.
6. Change DNS Domain Name.
0. Exit Menu.
What do you want to change (0-7) ? : 1 ↵
Enter mode (enable/disable) : enable ↵

----- WAN Parameters -----
NAT mode      - Enable
WAN IP Address - 0.0.0.0
WAN Subnet Mask - 0.0.0.0
WAN Gateway   - 0.0.0.0
Ethernet Addr - 00:08:52:88:12:92
LAN IP Address - 192.168.2.12
LAN Subnet Mask - 255.255.255.240
LAN Gateway   - 0.0.0.0
----- DNS Parameters -----
DNS Not Used

-----
1. Change NAT mode.
2. Change IP Address.
3. Change IP Netmask.
4. Change Def. G/W IP.
5. Change DNS Server IP.
6. Change DNS Domain Name.
0. Exit Menu.
What do you want to change (0-7) ? : 0 ↵
You must RESET to apply modified value(s) to system.
```

2.3.3 Modem Configuration

1. Command directory

```
DV_GW/CONFIG/MODEM>
```

2. Command function

These commands are used for setting Modem configuration parameters.

3. Available commands

Commands	Description
SHOW	Show Modem parameters
Dial number	Command to set dialnumber
Username	Command to set username
PAssword	Command to set password
CONntype	Command to set connection type
Idle timer	Command to set the timer
COUntry	Command to set country name
PUIsodial	Command to set Pulse dial
SPeaker	Command to set speaker
Retrytimer	Command to set Retrytimer

SHOW

This command display Country name, User name, Dialing number, Connection type, Modem speaker,Pulsedial,idle timer, default which are required to perform Modem service.

Executing "show" at "DV_GW/CONFIG/MODEM" prompt can see details.

```
DV_GW/CONFIG>/Modem> show ↵

----- MODEM/PPP Parameters -----
Country (Company) - 61(KOREA)
Dialing Number   - 533
User Name        - davo
Password         - drc
Connection Type  - Always Up(0)
Idle Timer       - 0 sec
Re-connect Timer - 30 sec

-----

Pulse Dialing    - OFF(Tone Dialing)
MODEM Speaker    - ON

-----

Retry Timer      - 30 sec

-----
```

```
DV_GW/CONFIG/Modem> dialnumber 532 ↵
```

..

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...TConfig Writing Done

Dialing Number Changed to 532

DV_GW/CONFIG/MODEM> **username guest** ↵

...

...TConfig Writing Done

User Name Changed to guest

DV_GW/CONFIG/MODEM> **password guest** ↵

...

...TConfig Writing Done

Password Changed to guest

DV_GW/CONFIG/MODEM> **speaker off** ↵

...

...TConfig Writing Done

MODEM Speaker Turned OFF

DV_GW/CONFIG/MODEM> **conntype 1** ↵

...

...TConfig Writing Done

Connection Type Changed to Dial Up(1)

DV_GW/CONFIG/MODEM> **country** ↵

Usage : country <value>

<Value> - ITU-T T.35 AnnexA 8-bit country code (hexadecimal value)

00=JAPAN, 09=AUSTRALIA, 0F=BELGIUM, 16=BRAZIL

1B=BULGARIA, 26=CHINA, 31=DENMARK, 3C=FINLAND

3D=FRANCE, 42=GERMANY, 50=HONGKONG, 53=INDIA

57=IRELAND, 59=ITALY, 61=KOREA, 6C=MALAYSIA

73=MEXICO, 7B=NETHERLANDS, 82=NORWAY, 8A=POLAND

8B=PORTUGAL, 9C=SINGAPORE, 9F=SOUTH AFRICA, A0=SPAIN
A5=SWEDEN, A6=SWITZERLAND, B4=UK, B5=USA
FE=TAIWAN

DV_GW/CONFIG/MODEM> **country 53** ↵

...

...TConfig Writing Done

Country Changed to 53(INDIA)

DV_GW/CONFIG/MODEM> **pulse dial off** ↵

...

...TConfig Writing Done

Pulse Dialing Mode Changed to OFF (Tone Dialing)

DV_GW/CONFIG/MODEM> **idle timer 0** ↵

...

...TConfig Writing Done

Idle Timer Changed to 0(sec)

DV_GW/CONFIG/MODEM> **retrytimer 15** ↵

...

...TConfig Writing Done

Retry Timer Changed to 15(sec)

2.3.4 Routing Table Configuration

1. Command directory

DV_GW/CONFIG/ROUTE>

2. Command function

Manages route table required for call routing.

3. Available commands

Commands	Description
Show	Command to show prefix table
Add	Command to add numbers to route table required for call routing
Del	Command to delete numbers registered in prefix table

SHOW

This command is used to display numbers registered in prefix table to the console. When add command is successfully executed, the number is added in the blank space in the following figure. Executing “show” at “DV_GW/CONFIG/ROUTE” prompt shows current routing table.

[Example]

DV_GW/CONFIG/ROUTE> **show** ↵

```

=====
                PREFIX TABLE
=====
  INTF  PORT  NUMBERS      TRNC  PREFIX  POSTFIX  EXTRA_INFO
=====
  FXS   0     200             0     0.0.0.0
  FXS   1     201             0     0.0.0.0
  IP    0     ~               0     0.0.0.0
=====
    
```

ADD

This command used for adding numbers required for call routing to the routing table. Executing “add” at “DV_GW/CONFIG/ROUTE)” prompt can see detailed usage

[Example]

```
DV_GW/CONFIG/ROUTE> add ↵
=====
                        ADD Command Usage
=====
add intf <port> nums <trnc> <pre> <post> <extra>
=====
intf      ; interface name (fxs, fxo, net)
port      ; port number of interface (0 ~ )
nums      ; prefix numbers ('0' ~ '9', '.', '*', '#', '~', '?', ',', ' ', NULL,
length: 20)
          ; '.' : virtual dial tone, ',' : pause(500ms)
trnc      ; the number of truncation (0 ~ 31)
pre       ; prefix number ('0' ~ '9', NULL)
post      ; postfix number ('0' ~ '9', NULL)
extra     ; extra-informations (hexa-decimal)
=====

DV_GW/CONFIG/ROUTE> add fxs 0 3922241 0 ↵
Prefix Table Add success
DV_GW/CONFIG/ROUTE> add net 0 8~ 1 127.0.0.1 ↵
Prefix Table Add success
```

DEL

This command used for deleting number from the routing table. Executing “del” at “DV_GW/CONFIG/ROUTE>” prompt can see detailed usage.

[Example]

```
DV_GW/CONFIG/ROUTE> del ↵
=====
                        DEL Command Usage
=====
del all|[intf <port> nums]
=====
intf      ; interface name (fxs, fxo, net)
```

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port ; port number of interface (0 ~)
nums ; prefix numbers ('0' ~ '9', '*', '#', '~', '?', NULL)

```
=====
DV_GW/CONFIG/ROUTE> del fxs 0 200 ↵
Prefix Table Delete success
```

2.3.5 Address Configuration Commands

1. Command directory

```
DV_GW/CONFIG/ADDRESS>
```

2. Command function

This command is used for managing a specified port number on FXS interface.

3. Available commands

Commands	Description
Show	show registered addresses
Myaddr	register local addresses

SHOW

This command is used to display specified port number registered in address table. Executing “show” at “DV_GW/CONFIG/ADDRESS>” prompt shows current address table.

[Example]

```
DV_GW/CONFIG/ADDRESS> show ↵
=====
Address TABLE
=====
INTF  PORT  LOCAL-ADDR  PEER-ADDR  GROUP-PORT
=====
FXS   0      7183312
FXS   1      7183313
=====
```

MYADDR

This command is used to register specified port numbers that are used as calling party address in outgoing calls to track calls. Executing “myaddr” at “DV_GW/CONFIG /ADDRESS>” to see usage details.

[Example]

```
DV_GW/CONFIG/ADDRESS> myaddr ↵
=====
MYADDR Command Usage
=====
myaddr intf <port> nums
=====
intf      ; local interface name(fxs,fxo)
port      ; port number of interface (0 ~ )
nums      ; destination address ('0' ~ '9','*','#',NULL)
=====

DV_GW/CONFIG/ADDRESS> myaddr fxs 0 7183312 ↵
DV_GW/CONFIG/ADDRESS> myaddr fxs 0 null ↵
DV_GW/CONFIG/ADDRESS> show ↵
=====
Address TABLE
=====
INTF  PORT  LOCAL-ADDR      PEER-ADDR      GROUP-PORT
=====
FXS   0
FXS   1      7183313
=====
```

2.3.6 VoIP Configuration Commands (H.323)

1. Command directory

DV_GW/CONFIG/VOIP>

2. Command function

This command displays and sets up all the parameters required for the H.323. Details can be seen by typing an appropriate command from the “DV_GW/CONFIG/VOIP>” prompt to verify it.

Changes and verifies the parameters needed for H.323, the parameters are as follows;

Parameter		Description
RAS Parameters	G/K Interface Mode	Connection mode of G/K.
	E.164 Address	IP address and Port number of the first G/K.
	H.323 ID	IP address and Port number of the second G/K.
	Time out	H.323 ID of the system
	H.323 Prefix	Prefix to be registered to G/K.
	RAS TTL	Re-registration cycle (second) after first registration to G/K.

Protocol Parameters	Q.931 Call Signaling Channel Listen Port	Q.931 Call Signaling Port number when called.
	Audio codec type	Codec set used for a call set-up.
	Fast Connect Used	Use or not of the fast-connect protocol
	H.245 DTMF Message	Method of sending DTMF in a message format of H.245
	Fast Audio Connect	Use or not of the ring back tone from network in ALERT condition.
	Force RBT to network	The generation mode of a ringing tone to IP network when the system has received an ALERT message.
	H.245 Tunneling	Use or not of the H.245 tunneling.
	BRQ Used	Use or not of the BRQ message.
	NAT Used	Use or not of the NAT.
	Discard non-fast alert	Function of neglecting an ALERT message in a condition that there is no audio information.
	Using H.245 start (outbound)	Use or not of the H.245 channel when starting a call.
RTP Parameters	# Frame/Packet	The numbers of frame per one IP packet.
Manual RAS Config	Manual RAS	Use or not of a Manual RAS.

3. Available commands

Commands	Description
SHOW	Shows VOIP parameter .
CONFIGURE	Changes VOIP parameter .

SHOW

This command displays the set up value of the H.323 Parameter.
 For detailed example, execute “show” from the “DV_GW/CONFIG/VOIP>” prompt to verify it.

[Example]

```
DV_GW/CONFIG/VOIP> show ↵
* RAS Parameters *
-----
Gatekeeper not used.
-----
* Registration Numbers *
-----
200          201          202          203
204          205          206          207
```

```

-----
* My H323ID *
-----
DV116
-----

* Timeout *
-----
RRQ timer mode           : Received from G/K
RAS response timeout     : 20 sec
RAS retry number        : 2
Q.931 response timeout   : 20 sec
-----

* RAS TTL *
-----
700
-----
Press any key to continue
* Protocol Parameters *
-----
Q.931 Call Signalling Channel Listen Port : 1720
Fast Connect Used                          : Yes
H.245 DTMF Message                          : Relay using using H245
UII.alphanume
ric
Fast Audio Connect                          : No
Force RBT to Network                        : No
Wait Alert Timer                            : 20000 msec
H.245 Tunneling                             : No
BRQ Used                                    : No
NAT Used                                    : No
Discard non-fast alert                       : No
Open H.245 when conneted(outbound side)     : No
-----
Press any key to continue

* RTP Parameters *
-----
# Frame / Packet                          : 1
-----

```

CONFIGURE

Sets the parameters related to RAS, Protocol, RTP and Manual RAS requested in H.323 protocol.

[Example]

```

DV_GW/CONFIG/VOIP> configure ↵
1 . RAS Config
2 . Protocol Config
3 . RTP Config

```

```
4 . Manual RAS Config
0 . Exit
Select (0 ~ 4):
```

2.3.7 VoIP Configuration Commands (SIP)

1. Command directory

```
DV_GW/CONFIG/SIP/CONF>
```

2. Command function

This command displays and sets up all the parameters required for the SIP. Details can be seen by typing an appropriate command from the “DV_GW/CONFIG/SIP/CONF>” prompt to verify it.

3. Available commands

Commands	Description
SHOW	Command to show all the parameters required for the SIP.
URLMODE	Command to set URL mode(SIP or TEL) for peer UA.
MYDOMAIN	Command to set service domain name.
MYTELNUM	Command to set a telephone number assigned to FXS port 1.
PSVNAME	Command to set proxy server name.
RGNAME	Command to set registrar name.
AREACODE	Command to set area code.
CONFAPPLY	Command to restart SIP according to newly setting parameters.

SHOW

This command displays the set up value of the SIP Parameter. For detailed example, execute “show” from the “DV_GW/CONFIG/SIP/CONF>” prompt to verify it.

[Example]

```
DV_GW/CONFIG/SIP/CONF> show ↵
```

SIP Configuration

```
URL mode          sip
Register state    C_Registered
Call state        INITIAL
my domain         davalink.co.kr
```

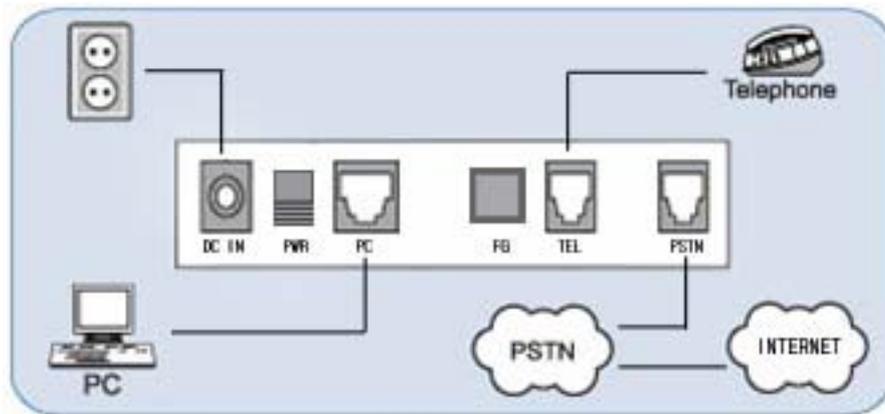
my ipaddr	xxx.xxx.xxx.xxx
my sip url	sip:021234567@davolink.co.kr
my port	5060
my transport	udp
Proxy server	proxy-davolink.co.kr
Server name	
Server port	5060
Server transport	udp
Registrar name	proxy-davolink.co.kr
Registrar port	8001
Registrar trans	udp
Register timer	3600 sec
Payload type	G723_63[004] G711U [000] G723_53[102] G711A [008] G729A [018] GSM [003]
Encoding name	G723_63[G723-63] G711U[PCMA] G729A[G729] G723_53[G723-53] G711A[PCMU] GSM[]
Codec enabled	G711U G711A G723_63
Areacode	NONE
UserID	
Password	

2.4 Configuring system with connected telephone

2.4.1 Installation sequence

1. Hardware Installation & Cable connection

- Place on flat surface and make sure that rubber feet are attached. (for cooling system)
- Following figure shows the cable's connections



2. System Configuration

CAUTION : In system configuration procedure at start, please eject a PSTN line cable.

- System configurations of DV-201DM consist of following 2 parts.
 - Internet setting : For PPP Connection, consist of the ISP phone number, user ID and password.
 - VOIP setting : For Internet telephony, you should set Proxy Server or Gatekeeper and telephone number and so on.
- You can configure by using a telephone connected to TEL port and Web browser of your PC. Configuration by telephone can be applied if you can not connect to DV-201DM by web browser. We recommend using Web browser.
 - Using telephone : please refer page 2-49,50.
- When you have configured system. **Please inject a PSTN line.** Make restart DV-201DM by power switch and wait about 20~30 seconds until system is initialized.

3. Using VOIP service

- If you hear the dial tone at off-hook the telephone, you can use internet telephony. Else Wait for connecting to internet.
- If you have problem with our system, please check system configurations or call us +82-31-387-3240.

For a normal operation of DV-201DM, it takes about 30 seconds after power up. You

may hear voice announcements such as “Network is not connected. Please ...”. You may check system status and a cause of connection fail by that.

2.4.2 Voice Announcements

You can hear following announcements when you can not use internet telephone service. The following shows latest cause of connection fail. If you hear a same announcement repeatedly, please check the cable connections or system configurations.

“Network is not connected. Please wait while network is connected.”

→ You might drop connection by “***#” or first time of trying to connect.

“Network is not connected. Because modem line was busy.”

→ ISP phone number or your telephone line was busy.

“Network is not connected. Because modem has a problem.”

→ Your PSTN cable has a problem. Or Modem detected “NO CARRIER”.

“Network is not connected. Because user authentication was failed.”

→ User ID or Password for ISP are wrong. Or PPP has problems.

“Network is not connected. Because modem script was failed.”

→ Remote PPP server doesn’t respond. Or script of system is not adapted ISP.

“Network is not connected. Because PPP negotiation was failed.”

→ Remote PPP server has dropped the connection. Or some problems with PPP.

“Network is not connected. Because connection is dropped by idle timer expiry.”

→ You have not used a telephone or PC for too long times.

Following announcements shows current internet connection status and VoIP status.

“We are connecting to network. Please wait while network is connected.”

→ System is trying to connect. It takes about 30 seconds .

“Network is connected. But We are registering to proxy server. Please ...”

→ Now, system has been connected to internet. But it’s not registered SIP Proxy server. Please wait until being registered to proxy server or Gatekeeper. It takes some seconds.

2.4.3 Special dialing number for system management (Tone dialing telephone only)

When you can hear a voice announcement or a dial tone at off-hook, You can check or set the following configuration by dialing see the follows.

- | | |
|-------------|--|
| ***0 | DV-201DM will announce allocated IP address from ISP. |
| ***1 | DV-201DM will announce LAN (PC port) IP address set by user. |
| ***2 | You can change LAN (PC port) IP address. |

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- ***3** You can change LAN subnet mask.
- ***4** You can change LAN Gateway address
- ***95** DV-201DM will announce current NAT mode
- ***961** Use OneIP mode (Allocated IP address of DV-201DM is same as PC.)
- ***962** Use NAT mode (IP address of PC shall be private IP address)
- ***9876543210** restart DV-201DM immediately.
- ***9876546540** change all configurations to factory setting. And restart DV-201DM immediately.
- ***#** force to disconnect current PPP connection immediately.

APPENDIX A How to use modem script

Caution : You don' t have to modify modem script of DV-201DM in most of environments. If your modem script is wrong, DV201DM don' t operate right. So when you modify modem script, be careful.

1. Overview

In DV-201DM, the script is provided for modem and PPP connection. In the script of DV-201DM, loop and decision phase is not included, and user can configure the minimal scenario for configuring modem & controlling PPP connection. In DV-201DM, as the followings, two types of script are provided.

1) Setup script

Initialize & configure internal modem in DV-201DM.

2) Dial script

Configure the procedure of calling & PPP connection.

The follows is the initial value of script in DV-201DM.

Setup	WN AT&F OK AT+GCI=61 OK ATTX4W1L3M1E0S95=47 OK ATWWN3B0 OK WN
Dial	WN ATDWT CONNECT WN

2. Operation of script

The script of DV-201DM is divided according to space character and consisted of receiving expectation character column and transmitting character column. The script of above box can be divided into each character column and is as the follows. The **bold character** is a receiving expectation character column.

1) Setup script

WN – no receiving expectation character column
AT&F – initialize modem
OK – response of modem regarding to initializing modem
AT+GCI=61 – assignment country code
OK – completion of assignment country code
ATTX4W1L3M1E0S95=47 – configuration operation of modem
OK – completion of configuration operation of modem
ATWWN3B0 – configuration the second operation of modem
OK – completion of configuration the second operation of modem
WN – no receiving expectation character column

2) Dial script

- WN – no receiving expectation character column
- ATDWT – calling command
- CONNECT – completion of connection
- WN – no receiving expectation character column

In DV-201DM, there are the reserved character columns for special function. The reserved character columns are opened with “ W ” character and the reserved length is different according to the follow character. So be careful.

The reserved character columns are as follows.

character	argument	description	example
s	–	Space character (SP)	AWsBC
t	–	Tab character (TAB)	AWtBC
n	–	Line feed (LF)	AWnBC
r	–	Carriage return (CR)	AWrWBC
W	–	Back slash (W)	WWN3
d	‘ 0’ ~’ 9’	Transmitting delay (Delay)	AWd2BC
c	–	Not included opening character	+++Wc
T	–	Replacement character column with dialing number (TEL)	ATDWT
U	–	Replacement character column with user ID (USER)	WU
P	–	Replacement character column with password (PASSWORD)	WP
N	–	NULL (no character column)	WN

In DV-201DM, expansion character columns are supported. The expansion character column is used for comparing “ receiving expectation character column ” with “ pre-defined character column ” and it is useful in environment with various expectation character columns.

● &U

It is the expansion character regarding to user input prompt and DV-201DM compare this character column with the following character column.

“ serid:", "ogin:", "userid", "user id", "login", "sename

● &P

It is the expansion character regarding to password input prompt and DV-201DM

compare this character column with the following character column.

“ assword:", "assword?”

● &C

It is the expansion character regarding to command input prompt and DV-201DM compare this character column with the following character column.

"> ", "# "

"uthentication fail", "uthentication Fail", "nknown", "ogin incorrect"

3. Script command

In DV201DM, the following command is provided for modification/confirmation of script.

command	description
SHOW	Display the current contents of script on screen.
SETUP	Access the menu for modifying setup script.
DIAL	Access the menu for modifying dial script.
EXP	Add/remove a character column to/from expansion character column.

EX. 1)

```
GW/CONFIG/MODEM> script ↵  
usage : script show|setup|dial|[exp add|del <name> <expand>]  
show   - show current MODEM scripts  
setup  - change script to initialize & setup MODEM  
dial   - change script to dial to PSTN(ISP)  
exp    - expand reserved script word (ex. &U usr)
```

EX. 2)

```
GW/CONFIG/MODEM> script show ↵  
  
===== MODEM SCRIPT =====  
setup  : \N AT&F OK AT+GCI=61 OK ATPX4W1L3M1E0S95=47 OK AT\\N3B0 OK  
\N  
dial   : \N ATD\T CONNECT \N &U \U &P \P &C PPP PPP \N  
=====
```

EX. 3)

```
GW/CONFIG/MODEM> script setup ↵  
  
[ \N AT&F OK AT+GCI=61 OK ATTX4W1L3M1E0S95=47 OK AT\\N3B0 OK \N ]  
enter setup script : < new script >
```

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EX. 4)

```
GW/CONFIG/MODEM> script dial ↵
```

```
[ \N ATD\T CONNECT \N &U \U &P \P &C PPP PPP \N ]  
enter dial script : < new script >
```

EX. 5)

```
GW/CONFIG/MODEM> script exp add &C $ ↵
```

```
Script Expand added &C, $
```

```
GW/CONFIG/MODEM> script show ↵
```

```
===== MODEM SCRIPT =====  
setup : \N AT&F OK AT+GCI=61 OK ATPX4W1L3M1E0S95=47 OK AT\\N3B0 OK  
\N  
dial : \N ATD\T CONNECT \N &U \U &P \P &C PPP PPP \N  
=====  
&C : $  
=====
```

EX. 6)

```
GW/CONFIG/MODEM> script exp del &C $ ↵
```

```
Script Expand deleted &C
```

```
GW/CONFIG/MODEM> script show ↵
```

```
===== MODEM SCRIPT =====  
setup : \N AT&F OK AT+GCI=61 OK ATPX4W1L3M1E0S95=47 OK  
AT\\N3B0 OK \N  
dial : \N ATD\T CONNECT \N &U \U &P \P &C PPP PPP \N  
=====
```



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