
AP-VP150 Video Phone

[Installation and Operation Manual]

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Technical Sales Division
AddPac Technology Co., Ltd.
www.addpac.com



AP-VP150 Video Phone

Note

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Introduction

This Introduction describes the organization of the AP-VP150 Video Phone Installation and Operation Manual.

[Document Organization]

The purpose of this document is to help AP-VP150 users install AP-VP150 easily. This document consists of seven chapters.

If you have used a video phone before, refer to helpful chapters. If you are not familiar with a video phone or have not installed it before, read this document carefully before handling AP-VP150.

Chapter 1 「 Introduction to AP-VP150 」 provides an overview of the features of AP-VP150, and describes its hardware and software specification.

Chapter 2 「 Preparatory Information on AP-VP150 Installation 」 describes the environment required for AP-VP150 installation as well as safety recommendations and preparatory information on AP-VP150 installation.

Chapter 3 「 AP-VP150 Installation 」 describes how to connect cables and acoustic or video devices to AP-VP150 and basic information on installation.

Chapter 4 「 How to Use AP-VP150 」 describes the OSD operation of AP-VP150 by using the remote control. 「 OSD, which stands for 'On Screen Design', is a screen that allows you to change device settings by operating the remote control. 」

Chapter 5 「 How to Use Touch Screen 」 describes various supplementary features of AP-VP150, which are enabled by using the touch screen.

Chapter 6 「 AP-VP150 Console Commands 」 describes console commands by using the console port.

Chapter 7 「 Appendix 」 describes the specification of AP-VP150 and the cables.

If you have any questions regarding AP-VP150 or your product has any failures, please contact AddPac Technology Co., Ltd.

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The revision history of the AP-VP150 Video Phone Installation and Operation Manual is as follows:

[Table 2-1] Revision History

| Edition | Date | Revision | Author |
|----------------|------------------|-----------------|--|
| Edition 1.00 | March 23rd, 2006 | First Edition | Technical Laboratory of AddPac Technology |

Chapter 1. Introduction to AP-VP150

Introduction

AP-VP150 is an IP video phone that allows you to make high quality voice communications by using the Internet. This product supports a video conference call, video calling, and aid to communication access for the disabled optimally through the latest audio/video codecs and a variety of AV I/O interfaces. The criteria of choosing a video phone are high quality audio and video.

AP-VP150 Overview

1. "Advanced Video Communications", New Criterion of Selecting a Video Phone

AP-VP150 is a high-performance multi-functional IP video phone where the state-of-the-art video processing technology is added to the voice processing technologies developed by AddPac in the VoIP field. AP-VP150 has better video features because it ensures high definition video due to a high-resolution LCD and you can enjoy a large screen connected to the external monitor. Since AP-VP150 supports networks of 64 Kbps to several Mbps, it is available at any Internet-enabled place. Above all, AP-VP150 ensures the best video quality due to the 'rate control' function that ensures the best video quality and frame rate at a limited bandwidth and the high-end error resilience technology for troubleshooting various packet failures on the Internet. This product processes VGA (640×480)-level videos by 30 frames per second based on the MPEG-4 video codec.

2. Firmware Upgrade Enabled

The high-performance RISC CPU and DSP of AP-VP150 are all programmable; thus, the features of AP-VP150 can continue to be improved, changed, or added. If you download an added or changed feature from the home page directly or set an automatic upgrade option whenever feature addition or change is done, you can use the latest feature without further operations.

3. Crucial Issue, "Audio Service"

Voice helps make more dynamic communications in the same video environment. As times

have changed, the voice quality should change. The voice processing codec of the traditional phones has had the satisfactory performance of message delivery, however does not meet a requirement for higher voice quality. AP-VP150 presents a new possibility of voice support for telephone communications. AP-VP150 also provides the advanced feature that allows you to install higher-quality MP3 and the AAC* codec in addition to various G.xxx series sampling codecs of 8 Khz, which are the standard of phone voice processing, into it and to receive IP voice broadcasting, IP video broadcasting, VoD services, or file browsers (e.g. MP3).

4. Terrific Supplementary Services

The supplementary services of AP-VP150 as well as its various features would meet your needs. AP-VP150 provides supplementary services (e.g. voice mail and Unified Messaging System (UMS), call note, time/calendar services, and picture-taking) as well as calling services that allow you to use a phone easily, which include a phone book, a latest calling list, Caller ID (CID), and call transfer to a remote site. The advantage of AP-VP150 is to support the unique supplementary services of AddPac. The broadcasting function is the main supplementary service of AddPac. If AP-VP150 is connected to the internal broadcasting equipment, IP voice and video broadcasting could be transmitted or received at any place connected to AP-VP150.

5. Reliable Video Phone

AP-VP150 is an integrated network device that enables routing, NAT/PAT, DHCP Server/Relay, public IP sharing, and QoS. Advanced QoS and security as well as various network services should be supported to adapt to a variety of network environments such as high-speed individual subscriber networks (e.g. xDSL, cable networks, and FTTH), Metro Ethernet, Metro ATM, private lines, and flexible IPs. In this regard, AP-VP150 has two 10/100Mbps Fast Ethernet ports to support a variety of network and security services such as high-performance LAN-to-LAN routing, bridge, and NAT/PAT.

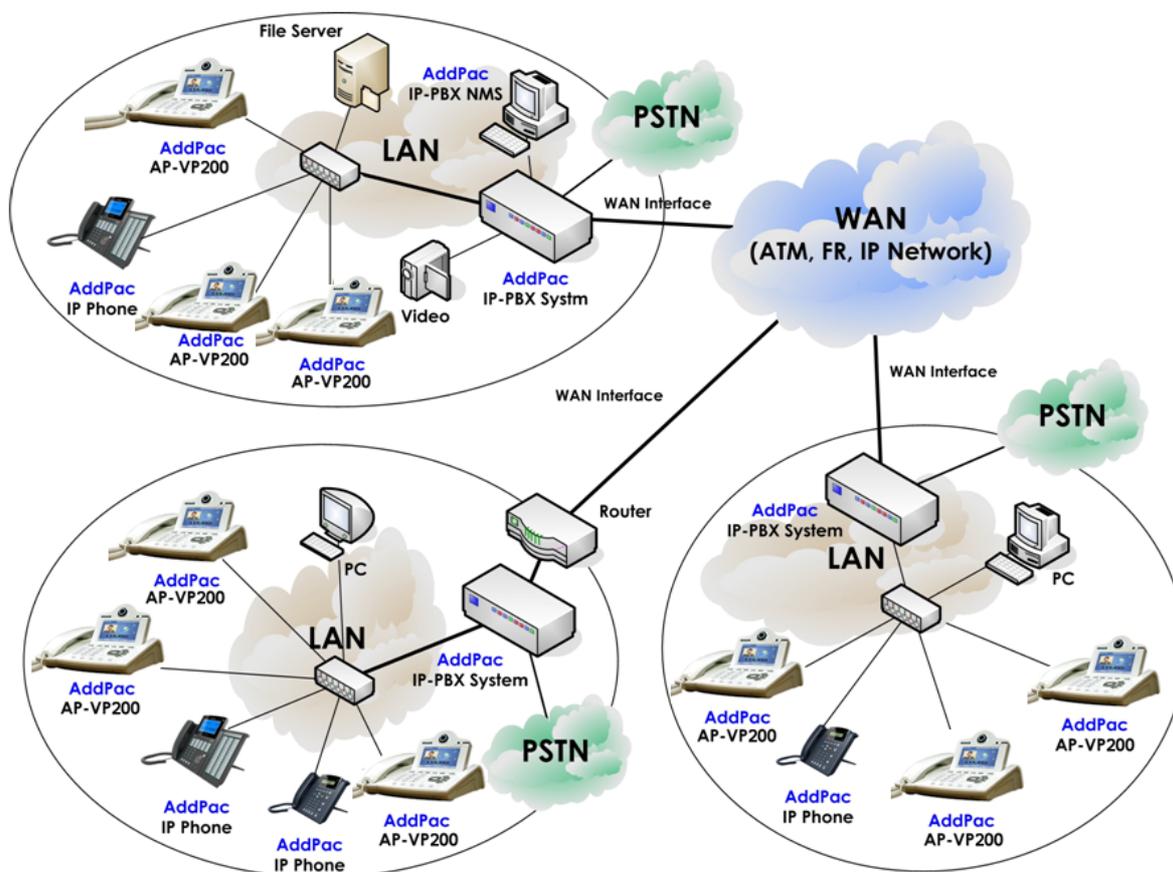
In addition, AP-VP150 concurrently supports H.323 and SIP, which are call control protocols. The technologies of AP-VP150 are differentiated from those of the traditional equipments in that a single AP-VP150 supports the two call control protocols concurrently; thus, even if either of the call control protocols are moved to another Internet Telephony Service Provider (ITSP), AP-VP150 can easily adapt to a new environment without change. AP-VP150 is a reliable solution that ensures good technologies.

6. Privacy and Security

AP-VP150 supports reliable service security as well as network access security. This product allows you to check the target phone number before answering a phone through

Caller ID Detection (CID) and to disable the audio or video functions easily by using the wireless remote control. If you select the 'Privacy' menu, you can disable either or both of voice and video in advance.

The performance and reliability of AddPac VoIP gateway series, ATM routers, and WAN routers have been recognized in global markets as well as the Korean market. AP-VP150, which is a collection of experiences and know-how accumulated in the enterprise and service provider markets, would be a solution that meets the needs of customers that ask for next-generation communications.



(Figure 2-1) Network Configuration of AP-VP150

Hardware Specification of AP-VP150

[Table 2-2] Hardware Specification of AP-VP150

| Category | | Specification | |
|------------------------|------------------------------------|--|--|
| Model Name | | AP-VP150 | |
| Product Category | | IP video phone (Speaker phone installed) | |
| Microprocessor | | High quality RISC microprocessor | |
| Digit and key button | | 3 x 4 standard number buttons and 23 shortcut keys/function keys | |
| LCD Display | Screen | High-Definition Color LCD | 7-inch high-definition TFT color LCD, touch screen |
| Memory | Boot Memory | | 512KB flash memory |
| | System Memory | | 16MB flash memory |
| | Main Memory | | 128MB high-speed SDRAM |
| Video Interface | Video Input | | 1-port composite (RCA) video input |
| | Video Output | | 1-port composite (RCA) video output |
| | | | 1-port S-Video output |
| Audio Interface | Audio Input | | 1-port 3.5mm male stereo-in audio input |
| | Audio Output | | 1-port 3.5mm male stereo-out audio output |
| Voice Interface | FXS Voice Interface | | 1-port RJ-11 connector |
| | PSTN Voice Interface | | 1-port RJ-11 connector |
| Ethernet Interface | Ethernet Port for LAN 0 Connection | | 1-port 10/100Mbps high-speed Ethernet, RJ-45 connector |
| | Ethernet Port for LAN 1 Connection | | 1-port 10/100Mbps high-speed Ethernet, RJ-45 connector |
| Console Interface | RS-232C Serial Port | | 1-port, RJ-45 connector |
| Power Supply Device | Power Supply | | External AC110~220V power supply device (adapter) |
| Hardware | Structure and Material | | Compact phone hardware of ABS material |
| Hardware Specification | Width X Height X Depth, Weight | | 279 x 281 x 98.3mm, 1.0Kg |

Software Features of AP-VP150

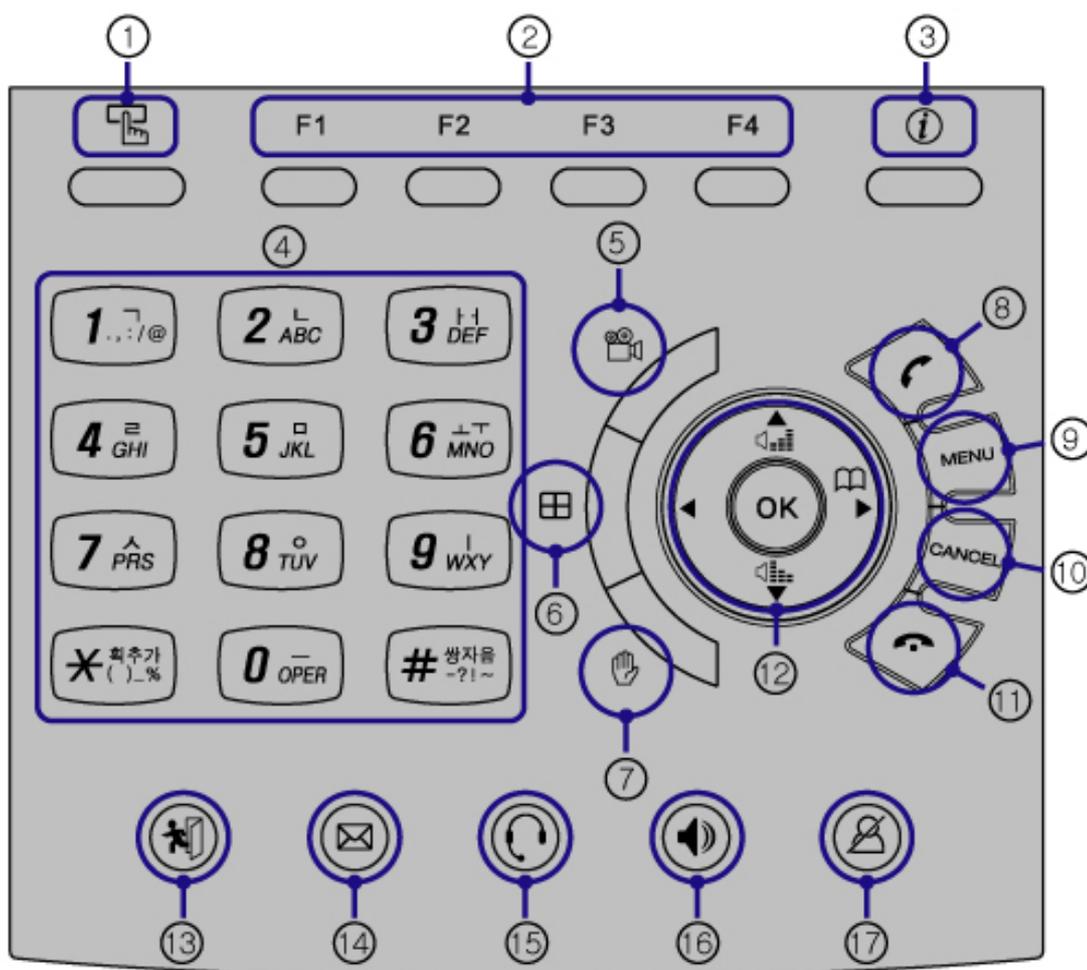
[Table 2-3] Software Features of AP-VP150

-
- High quality IP video phone supporting IP telephony based on multimedia
 - Supports a standardized network protocol for audio/video, VoIP, and LAN services
-
- Various I/O interfaces provided by default such as Multi-port 10/100M Fast Ethernet, composite (RCA) video input/output, S-Video output, 3.5mm stereo audio input/output, and RS-232C console interface
 - 7-inch high-definition TFT LCD supporting touch screen services
-
- Supports protocols for WAN inter-working such as PPPoE, PPPoA, and HDLC.
 - Supports a variety of IP routing (either dynamic or static) protocols such as Static, RIP v1/v2, RIPng, OSPF v2/v3, BGP v4, IGMP, and VLAN routing.
-
- Supports inter-working for VoIP services (e.g. H.323 gateway, SIP proxy server, and MGCP).
 - Supports Voice over IP services and various additional features.
 - Provides the ITU-T H.323 VoIP signaling protocol including the ITU-T H.235 security.
 - Provides the SIP VoIP signaling protocol in accordance with IETF RFC3261/RFC2543.
 - Provides the IETF RFC3435 MGCP VoIP signaling protocol.
 - Supports voice codec algorithms such as G.723.1, G.729A, and G.711.
 - Supports voice or facsimile processing such as VAD, DTMF, G.168 echo cancellation, and T.38 facsimile relay.
-
- Supports DSP-based high quality programmable hardware codecs.
 - Supports a variety of video codec algorithms such as H.263, MPEG-4, H.264/AVC*, and JPEG.
 - Supports the MP3 and Ogg Vorbis* audio codec algorithms.
 - Supports VGA-level (640 x 480) video quality of 30 frames per second.
 - Supports video broadcasting services based on unicast and multicast.
 - Restores video errors, compresses high-definition still video, and supports the lip synchronization feature.
 - Supports multi-point access based on H.320 (4 sites)*.
-
- Supports relay for Audio/Video (AV) broadcasting.
-
- Supports the standard SNMP agent MIB v2.
 - Performs Web-based management using a Web browser.
 - Supports network administration using a console and Telnet.
 - Filters IP packets, and supports security such as an IP access list.
 - Enables or disables a specific protocol.
 - Performs automatic switchover to those who do not use the Telnet/console session for a specific amount of time.
 - Supports security features based on network data protection such as PAP/CHAP.
-
- Analyzes the usage and performance of CPU and interfaces.
 - Backs up or restores APOS and command configuration files.
 - Performs diagnostics, monitoring, and system debugging.
 - Performs automatic reboot using the watch dog feature when a failure or error occurs.
 - Supports system logging and IP accounting.
-
- Supports traffic management and queuing.
 - Supports NAT/PAT and Network Time Protocol (NTP).
-
- Supports Cisco-type Command Line Interface (CLI).
 - Performs APOS remote upgrade using FTP/TFTP and remote settings/operation.
-

- Supports AddPac EMS solution inter-working for network administration and maintenance.
 - ✓ AP-VPMS VoIP EMS
 - ✓ AP-MBMS video broadcasting EMS
 - Easy use through On-Screen Display (OSD) software that inter-works using a remote control
 - Supports both IPv4 and IPv6 for next-generation IP inter-networking inter-working (dual stack).
 - ✓ Performs tunneling between NAT-PAT and IPv6 to IPv4.
 - ✓ Supports IPv6 in accordance with RFC2460, RFC2463, RFC2461, RFC2373, and RFC2462.
 - ✓ Performs IPv6 inter-working between the IPv6 router and host of another device.
 - ✓ Performs IP routing, WAN, ATM, VPN, VoIP, and MMoIP based on IPv4/IPv6.
 - Manages traffic through high quality QoS control.
 - APOS™, which is data, voice, multimedia inter-networking software, is installed.
-
- **Examples of Related Product Families for Solution Integration**
 - ✓ AP-MG3000, AP-MG5000 Media Gateway
 - ✓ AP3100 VoIP Gateway
 - ✓ AP-2650 IP Centrix VoIP Gateway
 - ✓ IPNext 500 IP-PBX System
 - ✓ AP-IP300 high-end IP phone
 - ✓ AP-IP200 advertised IP phone
 - **Multimedia-based next-generation networking solution**
 - ✓ VoD Service Provision Platform (VSPP) VoD solution
 - ✓ Network Surveillance Provision Platform (NSPP) DVR solution
-

Front Panel of AP-VP150

This section describes the front panel of AP-VP150. AP-VP150 is an external compact network product of high-strength ABS. Since its main key buttons are mounted on the front panel of this product, you can operate any and all system operations by using the key buttons. The rear panel consists of a variety of audio and video interfaces including the WAN/LAN interfaces.



(Figure 2-2) Front Panel of AP-VP150

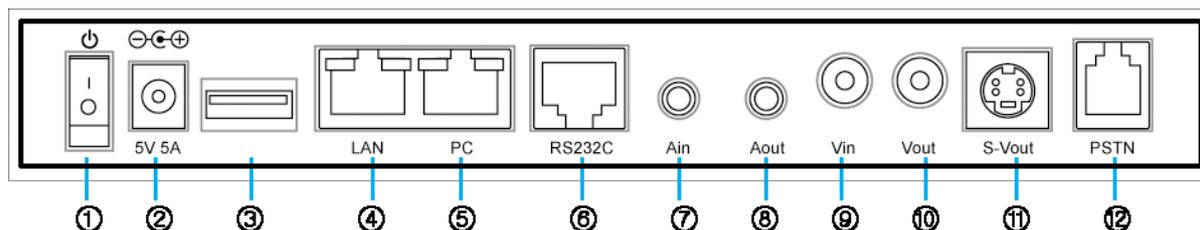
The LED on the front panel of AP-VP150 is described in the table below:

[Table 2-4] LED on the Front Panel of AP-VP150

| No. | Button Name | Feature |
|------|-------------------|---|
| (1) | SpeedDial | Makes a call to the speed dial menus. |
| (2) | F1~F4 | These are function keys allocated to the bottom of the LCD screen to allow you to use the menus of Phone Book and Speed Dial. Each feature is enabled differently depending on the menus. |
| (3) | INFO | Selects whether to display the bars at the top and bottom of the screen when making a call. |
| (4) | Number Button | Makes a dial using a remote control. Enter settings in the OSD menu. |
| (5) | Hook Flash | Makes a call to a speaker phone or a headset. |
| (6) | Camera | Turns on or off a camera screen. |
| (7) | Privacy | Blocks a local video while calling in order not for the other party to see my screen. |
| (8) | Menu | Makes a call to the main menu of OSD. |
| (9) | Cancel | Moves from the current OSD menu to the upper-level menu. |
| (10) | Call | Makes a call to the recent call log. Makes a call after dialing using the number buttons. |
| (11) | Direction Key, OK | Moves and checks each menu of OSD, and adjusts the video camera. |
| (12) | END | Completes a current call. |
| (13) | View | Changes the conversation view/remote view/local view while calling. |
| (14) | Absence | Press this button when you are absent (To be enabled). |
| (15) | Voice Mail | Press this button when you want to hear a voice mail (To be enabled). |
| (16) | HDP Call | Press this button when you make a call by using a headset. |
| (17) | SPK Call | Press this button when you make a call by using an internal speaker. |

Rear Panel of AP-VP150

The rear panel of AP-VP150 consists of two 10/100Mbps Fast Ethernet interfaces for WAN/LAN access, the PSTN port for accommodating a regular C.O.line, video I/O port and audio I/O port, which connect to video and acoustic devices, as well as the RS-232C port, which allows you to access the console for device management and camera control.



(Figure 2-3) Rear Panel of AP-VP150

The rear panel of AP-VP150 is described in [Table 1-4]:

[Table 2-5] Rear Panel of AP-VP150

| No. | Display | Description |
|------|----------|---|
| (1) | SW | This switch supplies the power to the system or blocks power supply. |
| (2) | DC 5V 5A | This port is used to connect an adapter for DC 5V 5A. |
| (3) | USB | This USB conforms to Standard 1.1. The maximum rate is 12Mbps, and the user is connected to the USB memory. |
| (4) | LAN | This is Fast Ethernet interface of 10/100Mbps used for WAN (RJ45). |
| (5) | PC | This is Fast Ethernet interface of 10/100Mbps used for LAN (RJ45). |
| (6) | RS232C | This interface is used to control consoles and cameras for network administration (RJ45). |
| (7) | AIN | This audio input interface for the output signal and connection of a microphone or an acoustic device. Sets MIC and line in by using a remote control. |
| (8) | AOUT | This is an audio output interface that connects an acoustic device such as a headphone or a speaker. Sets a speaker and line out by using a remote control. |
| (9) | VIN | This is an RCA composite video input interface that connects an acoustic device such as cameras or DVD players. |
| (10) | VOUT | This is an RCA composite video output interface that connects an analog video output device such as TV. |
| (11) | S-Video | This is an S-VHS video output interface that connects a high-definition TV, a projector, and PDP. |
| (12) | PSTN | This is a 1-port PSTN backup interface that accommodates PSTN C.O.lines. |

Chapter 2. Preparatory Information on AP-VP150 Installation

Recommendations for Installation

Recommendations for the safe use of this product are as follows:

- Install and use this product in a clear and dust-free place.
- Open the cover in a flat and safe place.
- Do not wear loose clothes that may be stuck by the product chassis during operation. If you wear a necktie or a scarf, be wary of its falling and tuck up your sleeves.
- Do not perform operation that may affect the other people or devices.

Electrical Safety Recommendations

Electrical problems that may occur during use are categorized into safety issues due to the power part and device damage due to ElectroStatic Discharge (ESD).

This section describes safety recommendations for each case.

Electrical Safety

- Perform operation at a location where you can turn off the power right away if an electrical accident occurs.
- Turn off the power if you are installing the device or take off the device cover.
- Do not operate alone in a potentially dangerous place.
- Check if the power is off. Do not assume that the power is off.
- Take special caution if you must operate in a dangerous environment such as a humid place and an ungrounded power extension cable.

ESD Prevention

- The main chipset of this product is very precise. If you handle its elements in a wrong method, the product may be damaged due to ESD.

General Requirements for Installation

This product is available at any place where traditional electric appliances are available. A place that meets the following criteria is recommended for the best performance:

- Install the product at a flat and well-ventilated place.
- Install the product safely and stably at the target place.
- Do not put an object on the product.
- Install the product at a cool place where a direct lay of light is not shed.
- Install the product away from fire, inflammables, or magnetic objects.

Preparatory Information on Device Installation

Conform to the EMI standard and distance limitations in accordance with the EIA standard during installation.

The following section describes the Ethernet cable and console cable supported by AP-VP150 as well as tools required for installation:

Tools for Installation

If you do not place an order on tools required for installation in addition to some cables and devices, they would not be contained in the product package box. Prepare the following tools and devices for installation:

Cable for LAN and Console Port

RJ-45 to RJ-45 cable for the LAN port

Cable for the RS-232C console, which has the RJ-45 connector (Contained in the package box)

Ethernet Port

The rear panel of AP-VP150 is equipped with two RJ45 Ethernet ports. Use the standard cable and connector if you want to access the LAN network by using this port. Refer to the cable specification of Appendix for information on the pin specification of Ethernet cables.

Console Port

The front panel of AP-VP150 is equipped with one RJ-45 RS-232C Female DCE connector interface. You can initialize, monitor, or debug the product through the port. You must use the cables and connectors. Refer to the cable specification of Appendix for information on the pin specification of the RS-232C console cable.

Unpacking and Verification

Check if the package box that prevents physical damage is broken before unpacking the product.

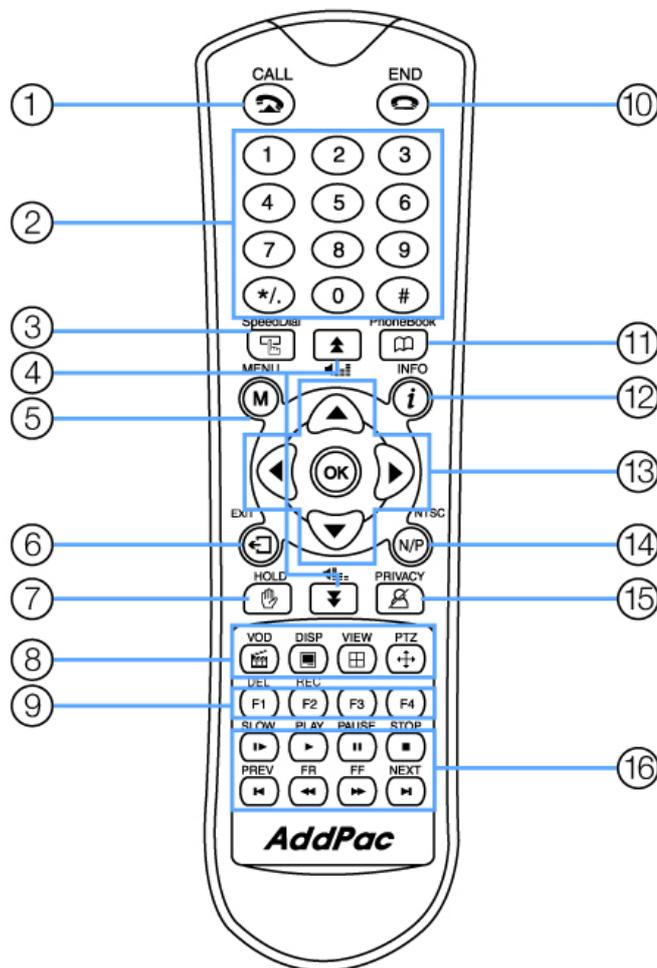
If you do not find damage, open the box and check if the following content is contained:

[Table 2-1] Peripherals of AP-VP150

| No. | Name | Shape | Quantity |
|-----|---|--|----------|
| 1 | Main Frame of AP-VP150 |  | 1 |
| 2 | Remote Control |  | 1 |
| 3 | LAN Cable (RJ45 to RJ45) |  | 1 |
| 4 | Console Cable (RJ45 to DB9) |  | 1 |
| 5 | External Adapter and Power Cable (Power cord of 220V) |  | 1 |

If the product is broken while being moved or has any defects, contact Technical Sales division or Customer Support team of AddPac (Representative phone number: (02)568-3848).

Names and Features of Remote Control Button



(Figure 2-1) Remote Control for AP-VP150

[Table 2-2] Name and Feature of Remote Control

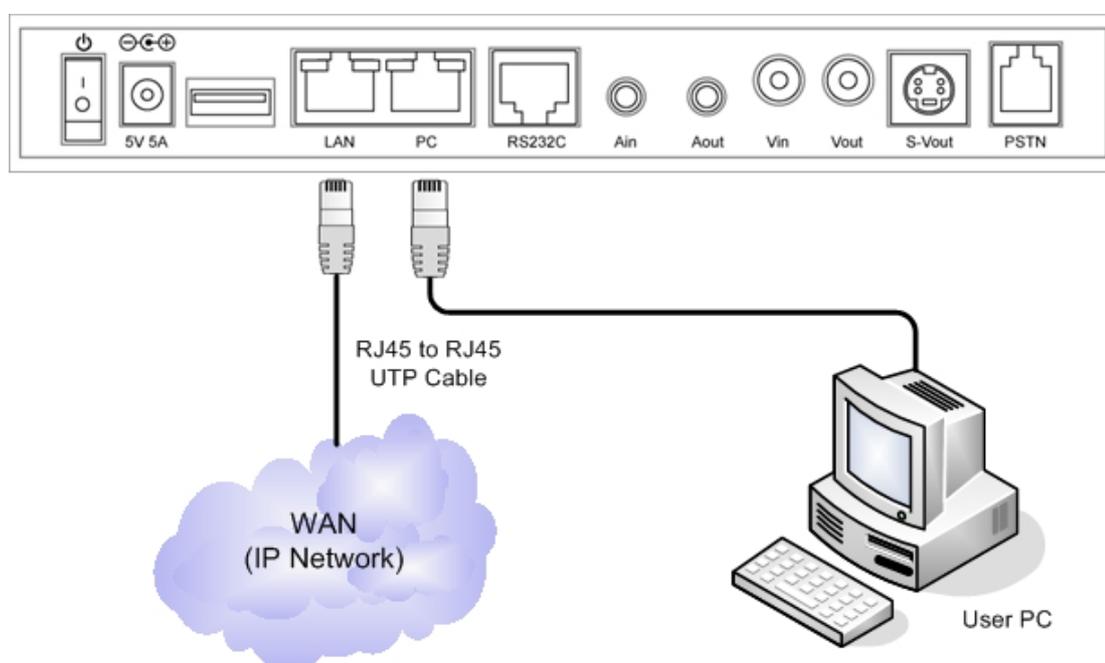
| No. | Button Name | Feature |
|-----|---------------|---|
| (1) | Call | Makes a call to the recent call log. Makes a call after dialing by using the number buttons. |
| (2) | Number Button | Dials by using the remote control. Enters settings in the OSD menu. |
| (3) | SpeedDial | Makes a call to the speed dial menu. |
| (4) | VOL+/- | Adjusts the ring sound and volume of the audio port. |
| (5) | Menu | Makes a call to the main menu of OSD. |
| (6) | EXIT | Moves to a higher-level OSD menu from the current menu. |

| | | |
|------|--|--|
| (7) | HOLD | Blocks the output of your and the other's screen and voice. (This feature is different from the keypad.) |
| (8) | VOD/DISP /VIEW/PTZ | VOD: Enables the embedded VoD browser (To be enabled). DISP: Disabled VIEW: Changes the conversation view/remote view/local view during a call. PTZ: Enables the Pan/Tilt menu of the video camera. |
| (9) | F1~F4 | These are function keys whose features are changed for each menu in OSD. The following features are enabled when you press the PTZ button: (Enabled only in EVI-D70/100. If the other party uses AP-VG1000, the features will be enabled.) F1: Turns on/off the power of the video camera. F2: Enables the direction change feature when the video camera is controlled. Or, saves a value in OSD. F3: Displays the input video of the video camera symmetrically at the left and right of the screen. F4: Enables the backlight of the video camera. |
| (10) | END | Ends a current call. |
| (11) | PhoneBook | Enables the Phone Book menu. |
| (12) | INFO | Selects whether to display the bar at the top or bottom of the screen during a call. |
| (13) | Direction Key, OK | Moves each menu in OSD, and checks if a menu has been moved. Adjust the movement of the video camera (when the Pan/Tilt menu is enabled.) |
| (14) | N/P | Disabled |
| (15) | Privacy | Disallows the other party to see your screen. |
| (16) | SLOW/PLAY/ PAUSE/STOP/ PREV/FR/FF/ NEXT | This feature is enabled when the Embedded VoD Browser runs. To be enabled |

Chapter 3. AP-VP150 Installation

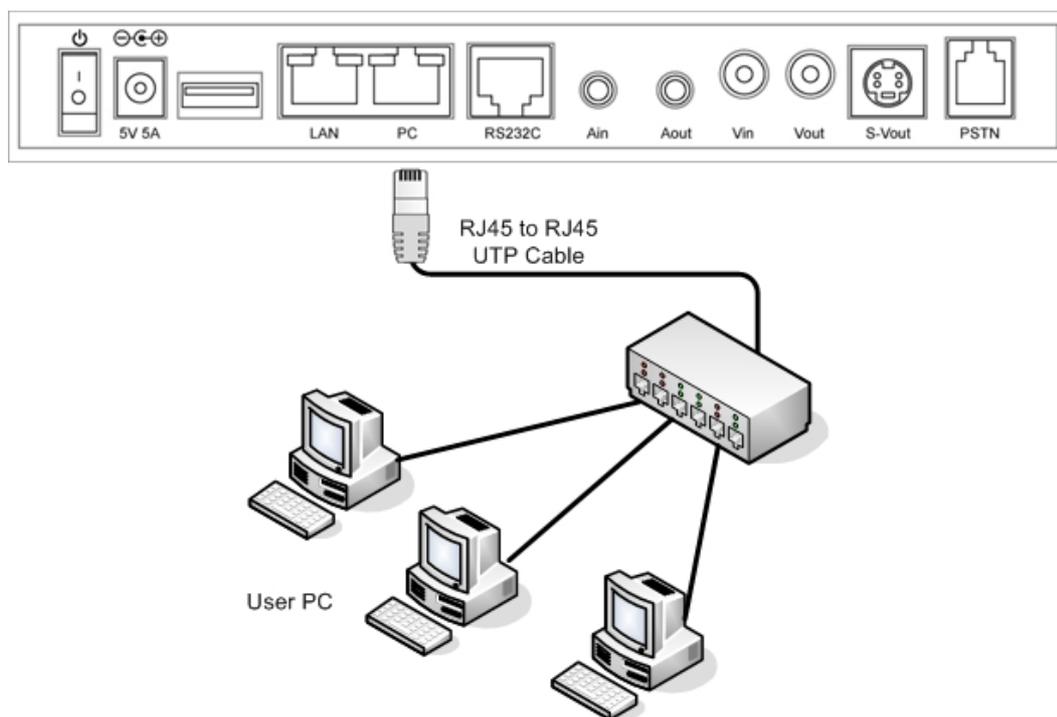
Ethernet Interface Connection

- Connect the WAN interface for Internet access to the LAN interface of the WAN device (e.g. router or ADSL/cable modem) by using the UTP cable of RJ45.
- If you want to connect to the router, xDSL, or cable modem directly, a cross-over cable might be used.
- Use a direct-through cable to connect to the hub.



(Figure 3-1) Connection of WAN Interface to AP-VP150

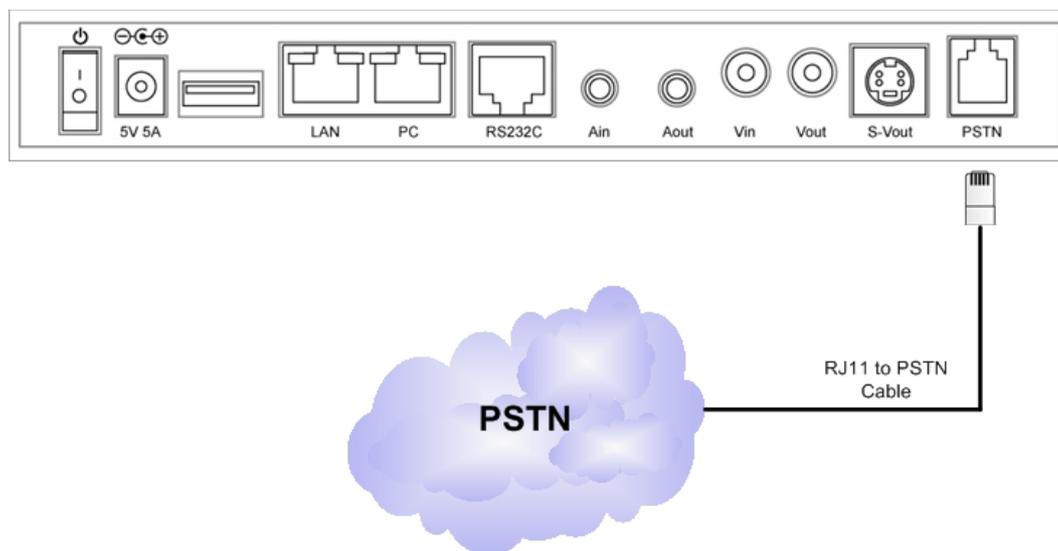
- Connect the LAN 1 interface to the PC by using a direct-through cable in IP-Share mode, and to the hub in NAT/PAT or bridge mode.
- Use a direct-through cable to connect to the PC directly.
- Use a cross-over cable to connect to the hub.



(Figure 3-2) Connection of LAN Interface to AP-VP150

Connection of PSTN Cable Interface

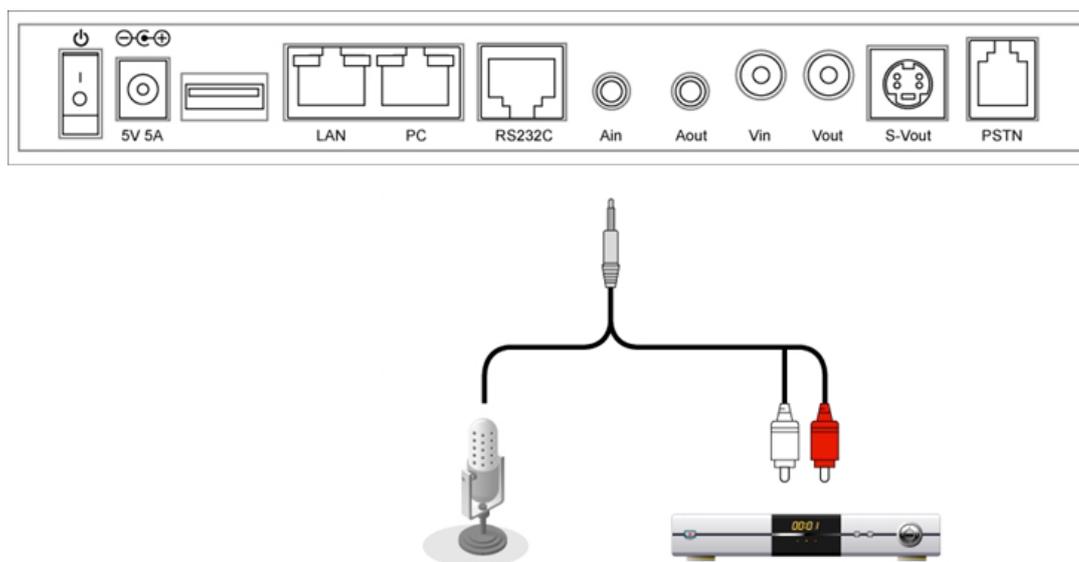
The PSTN port is used if a PSTN cable is used or a call cannot be made due to a network failure. You can connect a PSTN cable to the AP-VP150 PSTN port in order to implement PSTN backup. As shown in the figure below, connect a PSTN cable:



(Figure 3-3) Connection of PSTN Cable Interface to AP-VP150

Connection of Audio Input Interface

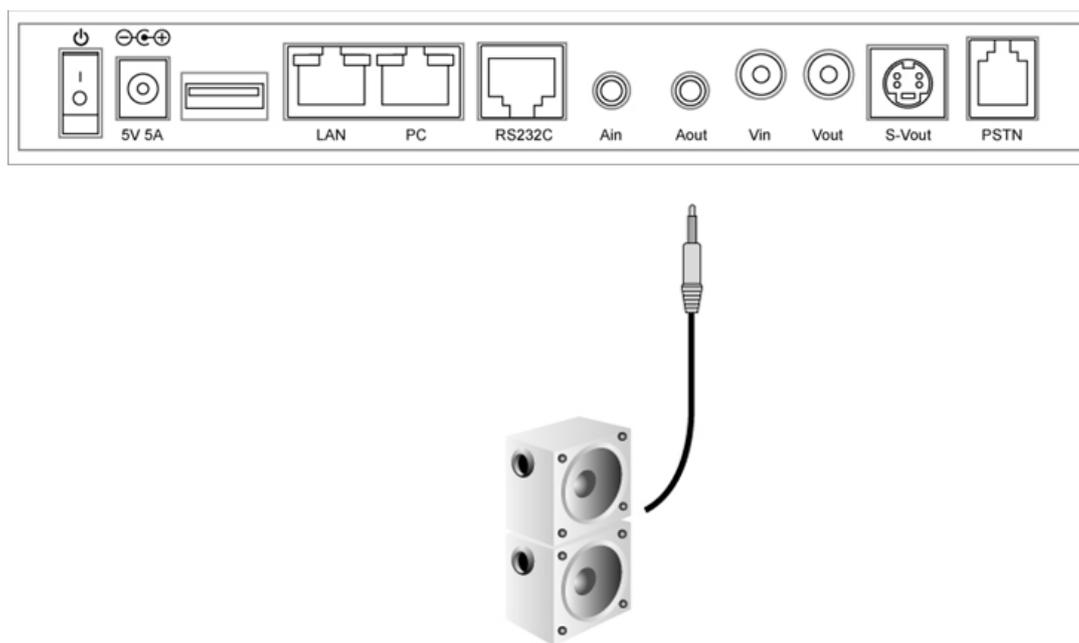
The audio input port allows you to supply sounds of a microphone system and a DVD player. You can use a cable of “3.5mm stereo jack” to connect to a microphone system or a DVD player. You can select when to use a microphone in OSD and to use sound output. Depending on input devices, you should change the port property in OSD to fit for the attributes of the device. The default is a microphone system.



(Figure 3-4) Connection of Audio Input Interface to AP-VP150

Connection of Audio Output Interface

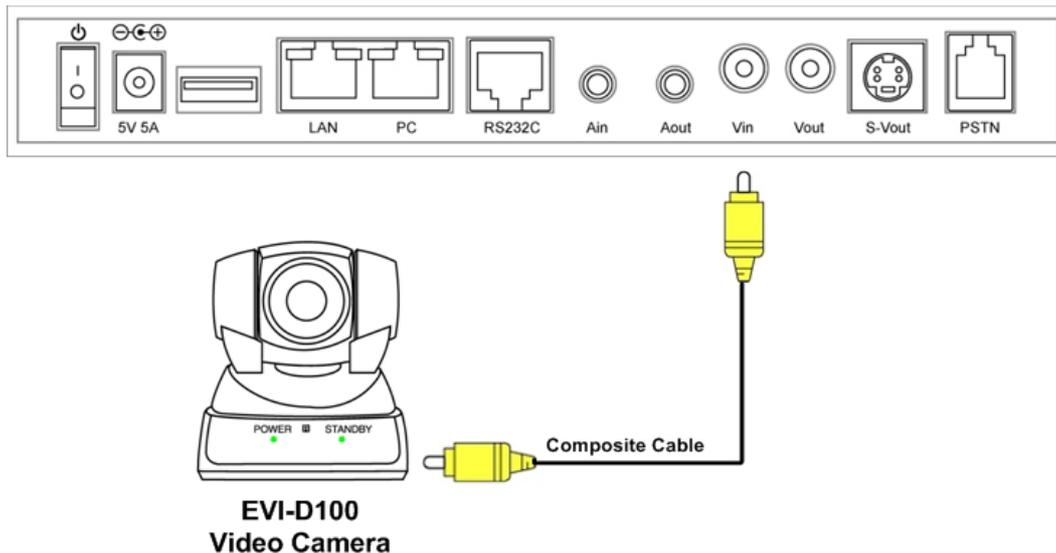
The audio output port allows you to connect to your speaker or headset by using a cable of “3.5mm stereo jack.” Since the audio output port of AP-VP150 is a headset, you should change the property in OSD if a speaker system is used. Use a stereo cable of 3.5mm as shown in the figure below to connect to a speaker system:



(Figure 3-5) Connection of Audio Output Interface to AP-VP150

Connection of Composite RCA Video Input Interface

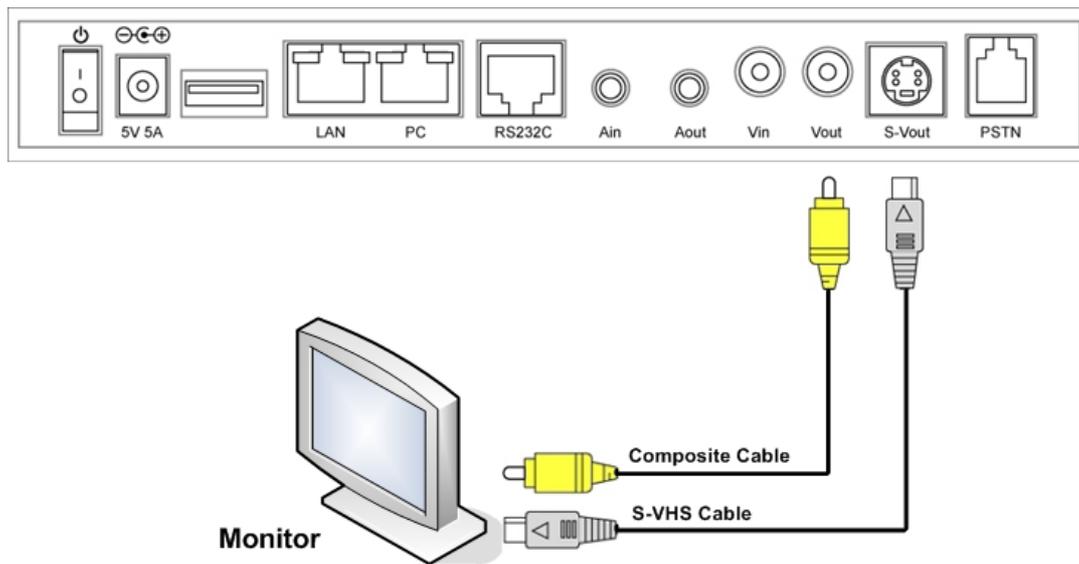
The video input port allows you to connect to the EVI-D100 video camera. You can choose to connect to a video device such as a DVD player. A video device that has a composite RCA video output port can be connected to AP-VP150. As shown in the figure below, use a composite RCA video cable to connect to a video camera:



(Figure 3-6) Connection of Video Input Interface to AP-VP150

Connection of Composite RCA/S-VHS Video Output

The video output ports are categorized into a composite RCA video output interface and an S-VHS video output interface. AP-VP150 simultaneously transmits video through both of the two interfaces. You can use an appropriate cable to connect to an interface depending on video input ports such as TV. As shown in the figure below, use a composite cable or an S-VHS cable to connect to the TV:



(Figure 3-7) Connection of Video Output Interface to AP-VP150

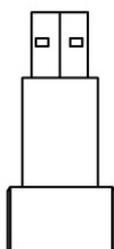
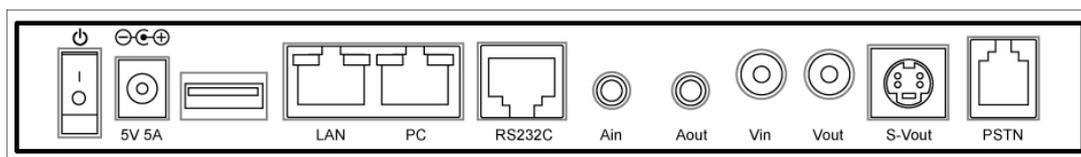
Connection of USB Terminal

The USB terminal of AP-VP150 conforms to the USB standard 1.1, and has a data rate of up to 12Mbps. You can connect to the USB memory drive to use it as [Table 3-1]. For your information, since the USB standard ensures compatibility, both USB 1.1 and 2.0 can be used. Some external USB hard disks might not operate properly due to demands on current.

The USB memory will be enabled.

[Table 3-1] Use of the USB Terminal

| No. | Feature | Description | Remarks |
|-----|------------------------|---|---------------|
| 1 | Sound Recording | Saves a call log in the USB memory. | Voice |
| 2 | Video Recording | Saves a call log in the USB memory. | Video + Voice |
| 3 | View Image | Views the JPEG images saved in the USB memory by using the built-in image viewer. | JPEG |
| 4 | Save Image | Saves the still video of the other party in the USB memory while calling. | JPEG |
| 5 | Security Key | Used as a security key or an encryption key for AP-VP150 | |



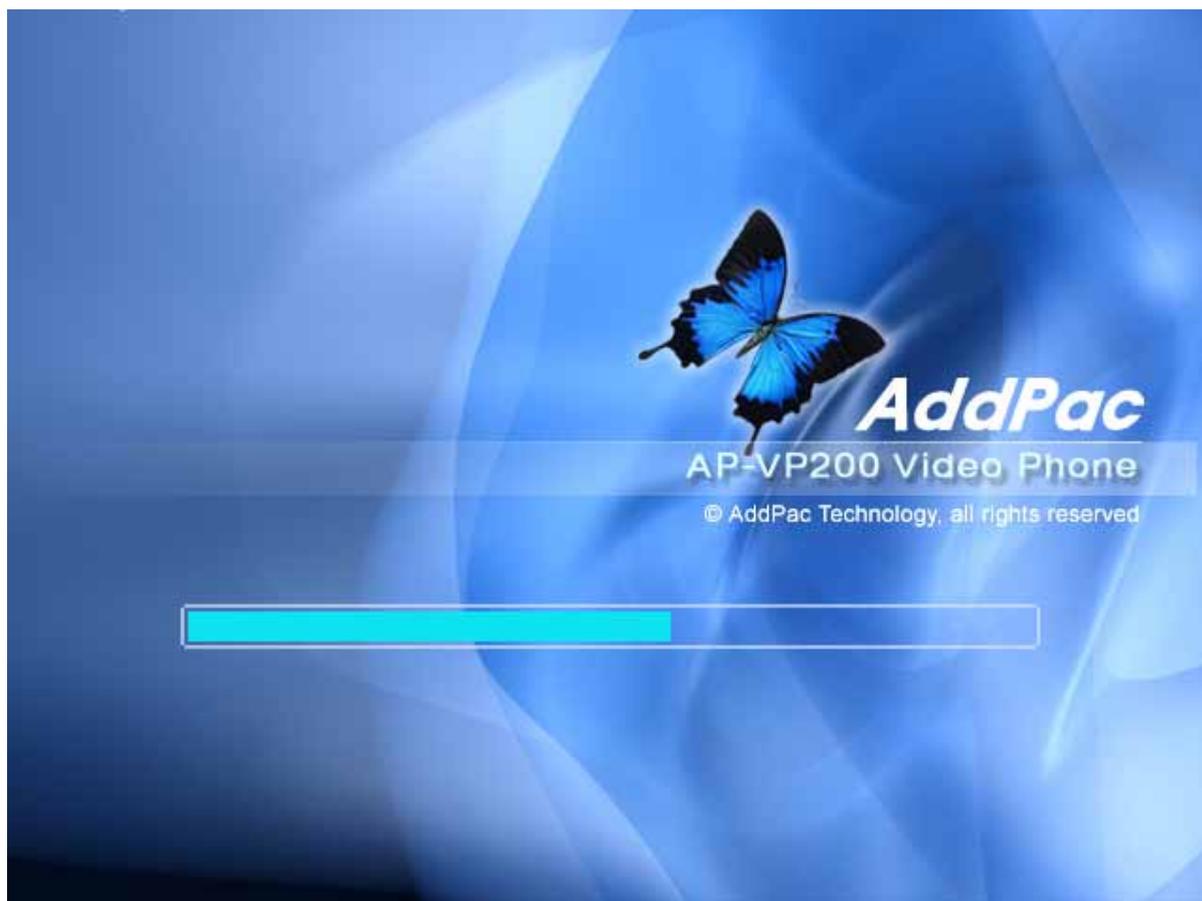
USB Memory Drive

(Figure 3-8) Connection of USB Memory Drive to the USB Terminal

AP-VP150 OSD Settings

Initial Operation of AP-VP150

If you turn on the power of AP-VP150, you can see the initial screen from the TV or monitor as shown in Figure 3-9:



(Figure 3-9) Initial Screen of AP-VP150

Default Screen of AP-VP150

Once the initial operation is complete, the default screen is configured as shown in Figure 3-10. This screen shows that AP-VP150 and the EVI-D100 video camera are installed into a large TV. A video conference call is made by using the built-in TV and microphone system not the FXS port.



(Figure 3-10) Default Screen of AP-VP150

[Table 3-2] Default Screen of AP-VP150

| Category | Description | |
|--------------|---|---|
| Top Info Bar | View Mode | <p>Local View: Default screen while you are not making a call. Plays back input video.</p> <p>Remote View: Plays back the video transmitted by the other party while calling.</p> <p>Conversation View: Plays back local and remote video by splitting the screen.</p> <p>Camera Control: Displayed when you press PTZ button of the remote control. If the other party is AP-VG1000, you will enter the camera control mode.</p> |
| | Time | Displays the current time. Displays the calling time during a call by default. The current time can be displayed even during a call by using the INFO button of the remote control. |
| |  | Displays that AP-VP150 is inter-working with the video broadcasting system. |
| |  | Displays whether the acoustic output of the audio output port is enabled or disabled. |
| |  | Displays whether the local video is transmitted remotely during a call. |
| |  | Displays link up/down of the WAN interface. |
| |  | Turns on when a call is connected. Is enabled during a call as well. Turns on periodically when an absent call is made. |
| Video Screen | In | <p>Displays the video transmitted to the video input port while not calling.</p> <p>Displays the local/remote/conversation view depending on your mode settings while calling. The OSD screen is displayed as well.</p> |

Menus of AP-VP150

Press the menu buttons of the remote control to view the menus as shown in Figure 3-11. You can set up any and all features except for remote camera pan/tilt, layout change, and calling status check that are enabled during a call. You can use the menus even while calling.



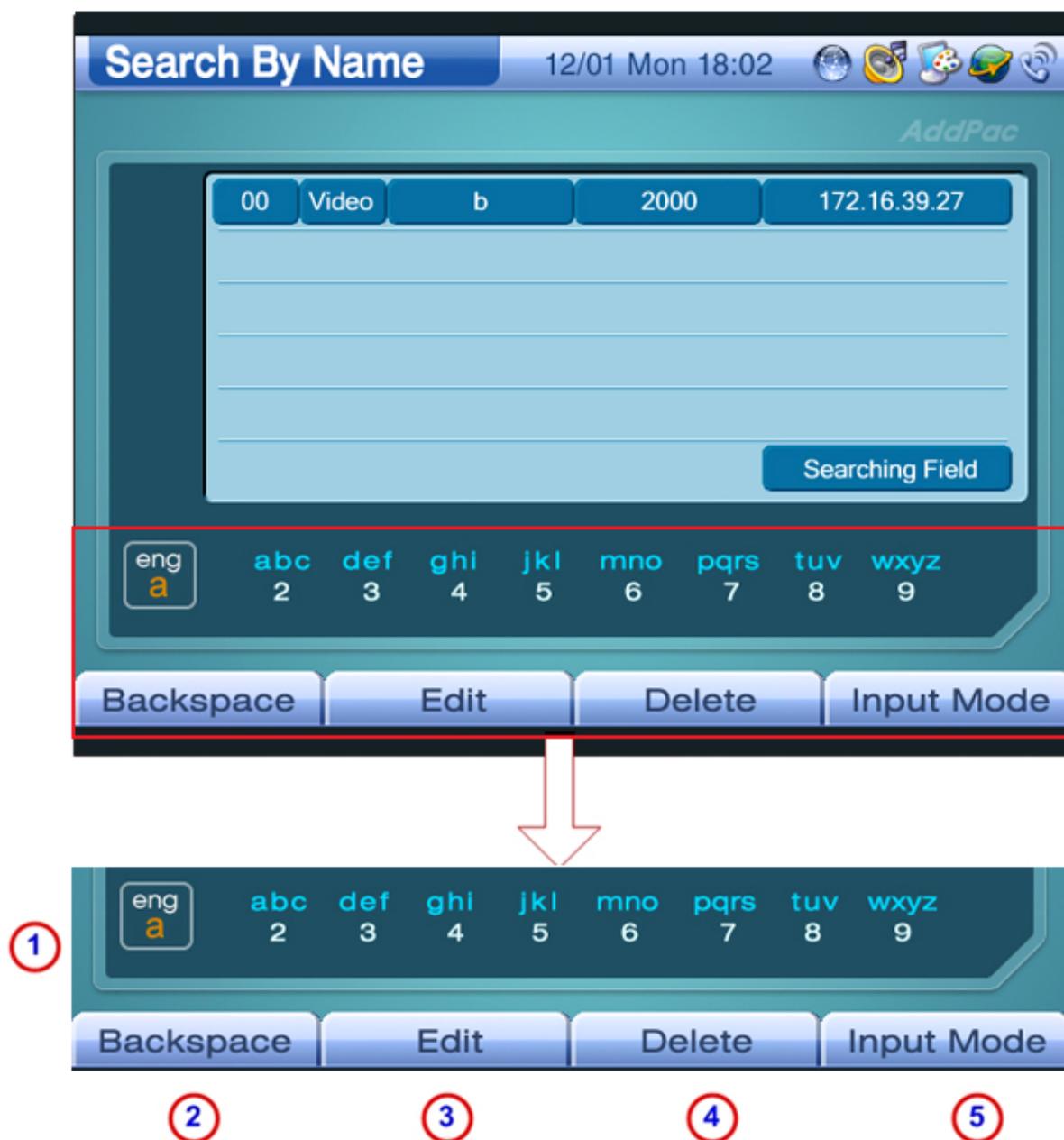
(Figure 3-11) Menus of AP-VP150

[Table 3-3] Menus of AP-VP150

| Category | Description |
|--|--|
|  <p data-bbox="225 577 363 600">Phone Book</p> | <p data-bbox="469 398 1385 524">This menu is a kind of phone book, and allows you to search a registered phone number by either name or number and to register a phone number. This menu has a recent call log and the speed dial menu.</p> |
|  <p data-bbox="245 817 347 840">Tool Box</p> | <p data-bbox="469 638 1385 719">This menu is required to maintain AP-VP150, and allows you to set a time in a device, save the setting, and to save the power of LCD.</p> |
|  <p data-bbox="245 1057 347 1079">Tool Box</p> | <p data-bbox="469 878 1385 1048">This menu is the core menu of AP-VP150. This allows you to adjust the volume of the audio I/O port, colors or contrast of the video I/O port, select an audio codec or a video codec, and to set the options of the codecs or the properties of the audio I/O port.</p> |
|  <p data-bbox="209 1296 379 1319">Network Setup</p> | <p data-bbox="469 1120 1385 1245">This menu allows you to set the WAN and LAN interfaces, select a VoIP protocol, enable or disable services such as HTTP, and to adjust QoS and the options.</p> |
|  <p data-bbox="229 1536 359 1559">Application</p> | <p data-bbox="469 1359 1385 1440">This menu allows you to use supplementary features such as the VoD browser, IPTV, and network camera (To be enabled).</p> |
|  <p data-bbox="209 1776 379 1798">Remote Setup</p> | <p data-bbox="469 1599 1385 1769">This menu allows you to change the bandwidth, image size, and frame rate of the party while calling. (This menu is enabled only to setup calls. Once a call is completed, the call setup is changed to the default value set by the other party.)</p> |

Using Input Mode

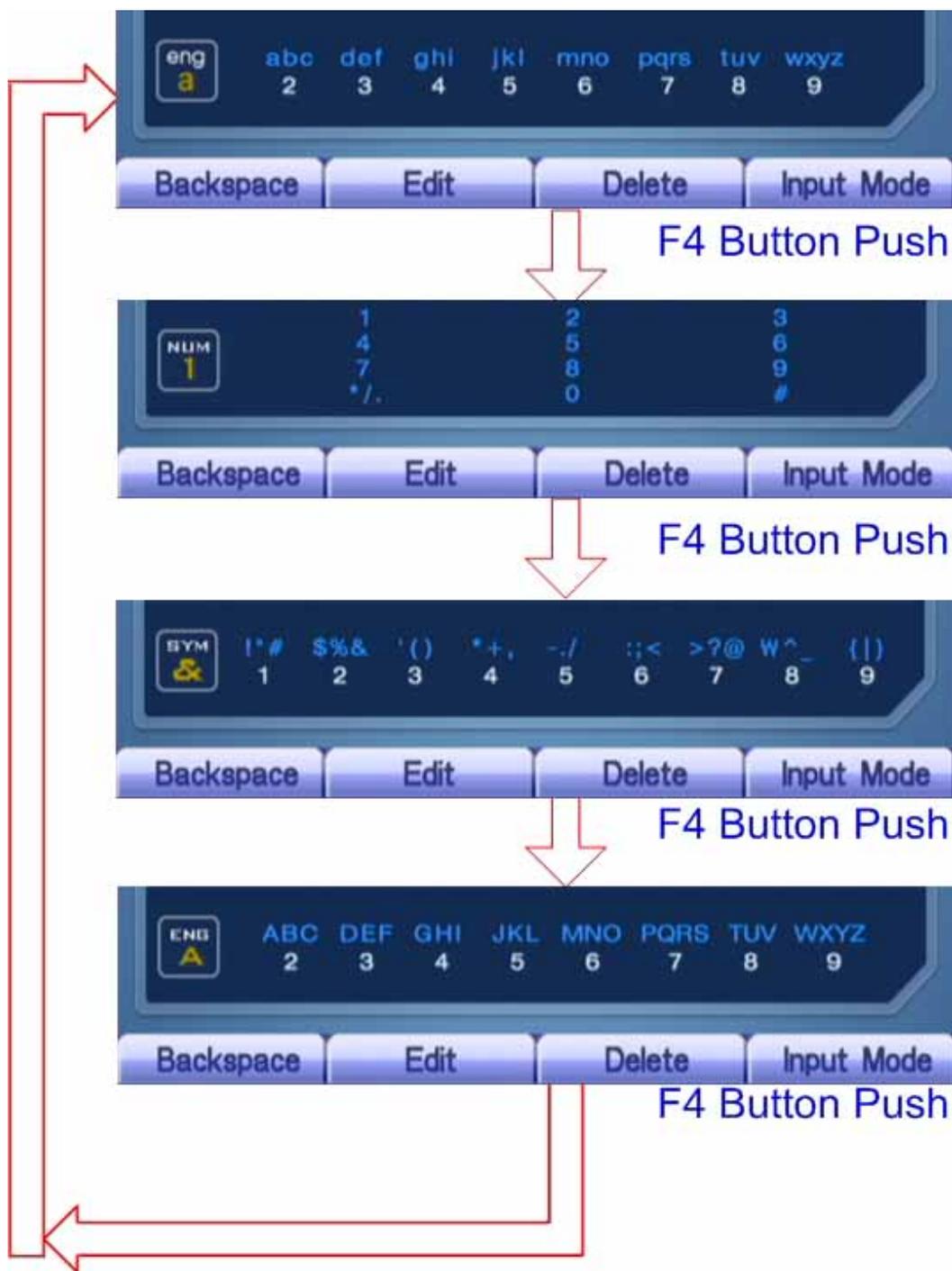
If you want to enter the characters, numbers, and special characters in AP-VP150 by using the remote control, you should know how to use input mode. Since input mode **is used to manage the phone book and to enter an account and an IP address in a network environment, you must be aware of the method.** Each function key corresponds to F1 to F4 of the remote control.



(Figure 3-12) Input Mode Screen

[Table 3-4] Input Mode

| Category | Description |
|-----------------|---|
| Character Set | Enters characters in OSD by using the remote control. You can select a total of four character sets by pressing the F4 button of the remote control. You can check four characters from Figure 3-13, and should enter the number keys once to three times to enter a character. Press the left/right direction keys of the remote control for more than three seconds to enter the next letter. |
| << (F1) | This backspace allows you to correct a character error. |
| OK/Edit (F2) | Press the OK button to inform the device of the changed value. In some input screen, the OK button can be used as the Edit key. |
| Delete (F3) | Deletes the entered values from the phone book. |
| Input Mode (F4) | Changes each character set in sequence. The order of change is "Alphabetical Lowercase → Number → Special Characters → Alphabetical Uppercase." |



(Figure 3-13) Change of Input Mode Using the F4 Button

Phone Book Menus

The features of Phone Book include searches using a name or a number, registration of a phone number, recent call logs, and speed dial.

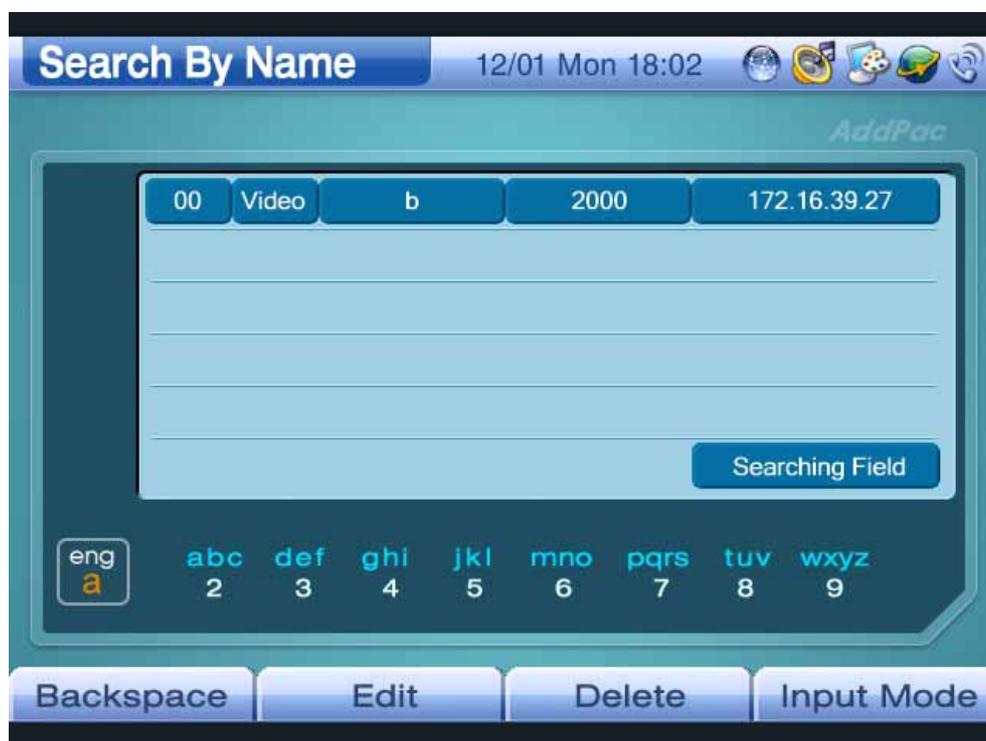


(Figure 3-14) Phone Book Screen

[Table 3-5] Detail Menu Screens of Phone Book

| Category | Description |
|---|--|
|  | Searches a phone number from the registered phone book by using a name. This allows you to search a phone number by entering a name with the remote control or to make a call to the recipient by using the Call button. |
|  | Searches a phone number from the registered phone book. This allows you to search a person by entering a phone number or to make a call to the recipient by using the Call button. |
|  | Registers a new phone book. This allows you to enter the name, phone, IP address, or domain of a person to register the target. |
|  | Views recent call logs. This allows you to be aware of the caller ID, name, and IP address of the caller or to make a call to the other party by using the Call button. |
|  | Displays 20 phone numbers by using names. You can search a phone number and make a call to the number by using a name only. |

Phone Book – Search By Name



(Figure 3-15) Search By Name Screen

Figure 3-15 shows the screen displayed when you select OSD >> Phone Book >> Name. The Name menu allows you to search a name from the names saved in Phone Book. Whenever you enter a character by using the remote control, the highlight is moved to the matching item automatically. If more than one phone number whose prefix is the same exists enter the second-left number as well to search the target phone number. You can use the selected information on the other party to make a call or can modify the information.



(Figure 3-16) Detail of Index 02 (Search by Name)

Table 3-6 shows a description of Index 02 shown in Figure 3-16:

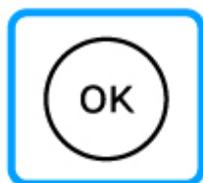
[Table 3-6] Index 02 (Search by Name)

| Category | Description |
|---------------------|--|
| Index | Displays the index number of a phone number. |
| Session Information | Displays whether a session is only for voice or for video. |
| Name | Displays the name of the other party in Phone Book. |
| Phone Number | Displays the caller ID of Phone Book. |
| IP Address | Displays the IP address of the other party in Phone Book. |

Figures 3-17 to 3-21 show an example of searching a specific name from the Search by Name menu by using the keypad:



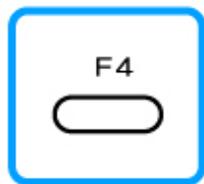
(Figure 3-17) Selecting Menu >> Phone Book



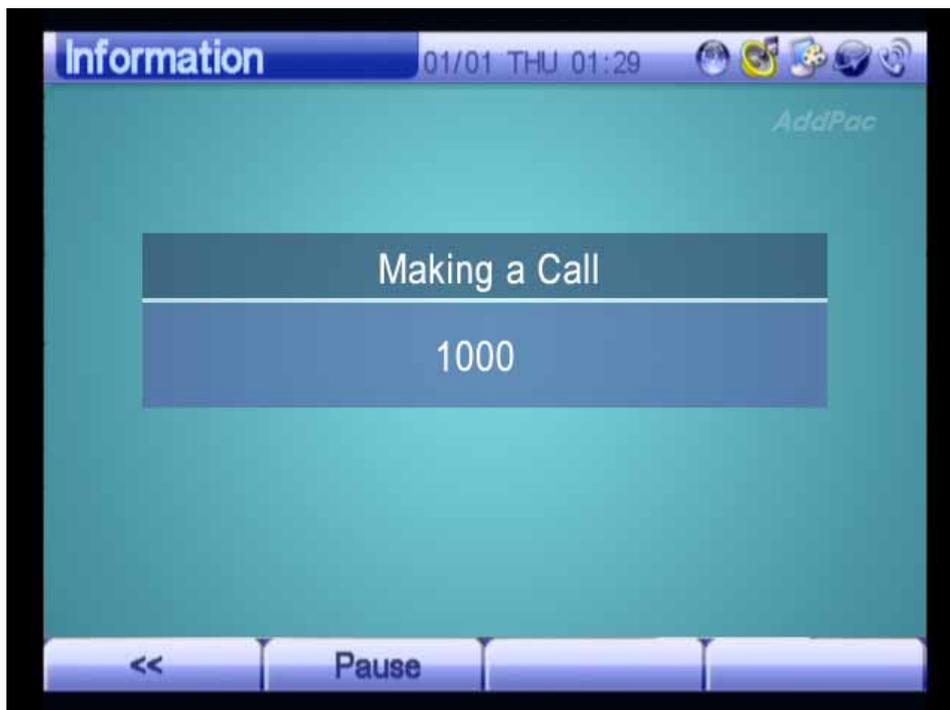
(Figure 3-18) Selecting Phone Book >> Name



(Figure 3-19) Search By Name Screen



(Figure 3-20) Entering "v" From Character Set



(Figure 3-21) Making a Call to AP-VG1000 Using the Call Button

Phone Book – Search By Number



(Figure 3-22) Search By Number Screen

Figure 3-22 shows the screen displayed when you select OSD >> Phone Book >> Number. The Number menu allows you to search a name from the phone numbers in Phone Book. Whenever you enter a number by using the remote control, the highlight is moved to the matching item automatically. If more than one phone number whose prefix is the same exists, enter the second-left number sequentially to search the target phone number. You can use the selected information on the other party to make a call or can modify the information. For the displayed information on the other party, refer to the Search by Name section.

Figures 3-23 to 3-31 show an example of searching and editing a specific name from the Search By Name menu by using the keypad:



(Figure 3-23) Selecting Menu >> Phone Book



(Figure 3-24) Selecting Phone Book >> Number



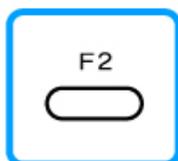
(Figure 3-25) Search By Number Screen



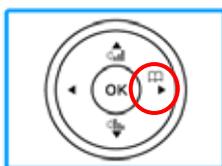
(Figure 3-26) Entering "3" Using the Remote Control



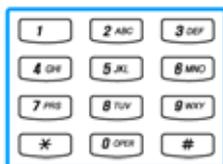
(Figure 3-27) Automatically Selecting Phone Numbers Starting “2”



(Figure 3-28) Selecting Edit Mode Using the F2 Button of Keypad



(Figure 3-29) Moving to IP Address By Pressing the OK Button of Keypad



(Figure 3-30) Changing the IP Address to “211.34.113.45”



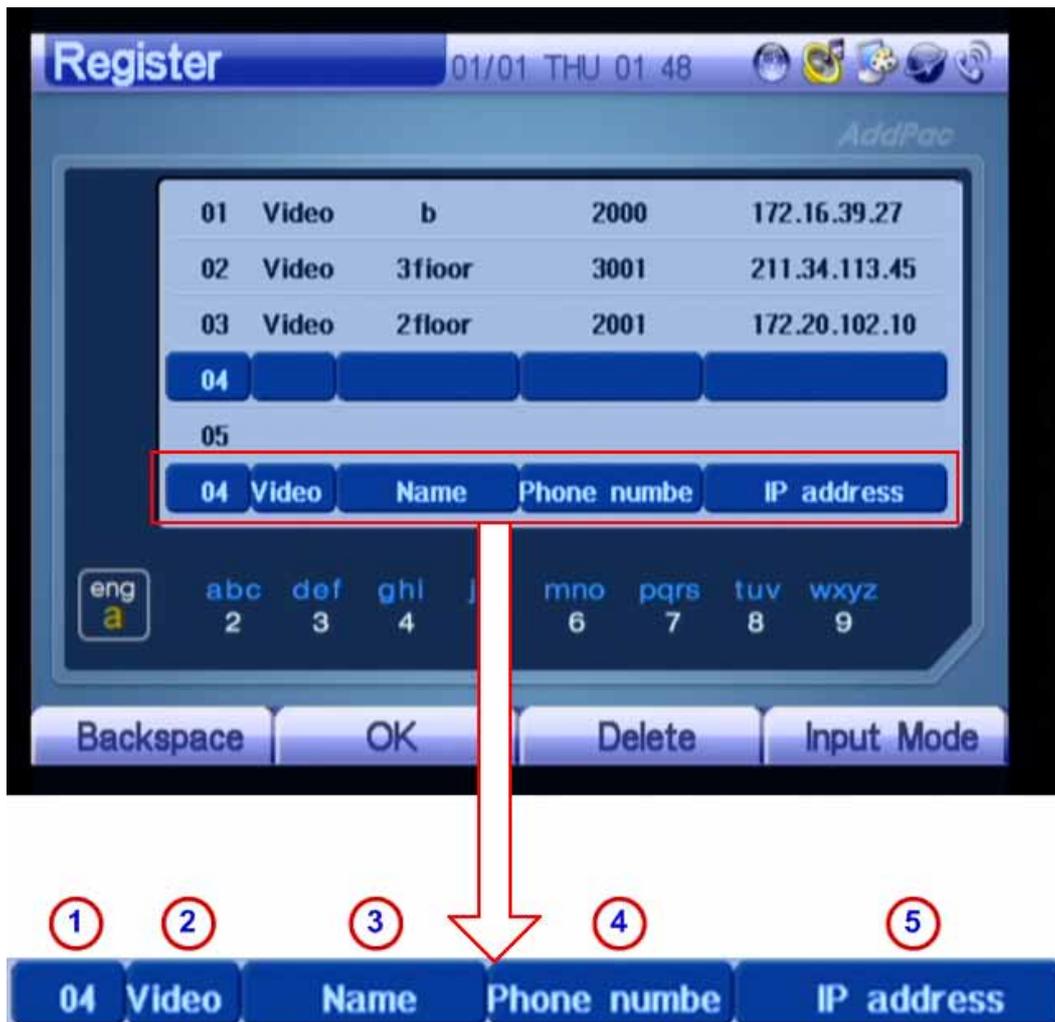
(Figure 3-31) Completing Input by Pressing the “OK” Button of Keypad

Phone Book – Register

Figure 3-32 is a screen displayed when you select OSD >> Phone Book >> Register. The Register menu allows you to enter a new phone number in Phone Book. Enter the name, phone number, and IP address of the other party by using the remote control. The saved information is automatically registered in the speed dial.



(Figure 3-32) Register Screen



(Figure 3-33) Entering New Phone Number in Register Screen

Table 3-7 shows a description of input items for a new phone number:

[Table 3-7] Input Items for a New Phone Number in the Register Screen

| Category | Description |
|---------------------|---|
| Index | Displays the index number of a phone number. This index number is the sorting criteria of speed dial numbers. |
| Session Information | Selects whether a session is only for voice or for video. |
| Name | Enters the name of the other party in Phone Book. |
| Phone Book | Enters the caller ID in Phone Book. |

| | |
|------------|---|
| IP Address | Enters the IP address of the other party in Phone Book. |
|------------|---|

Figures 3-34 to 3-45 show an example of entering a new phone number in the Register screen by using the keypad:



(Figure 3-34) Selecting Menu >> Phone Book



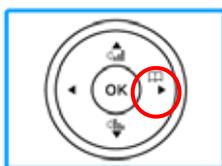
(Figure 3-35) Selecting Phone Book >> Register



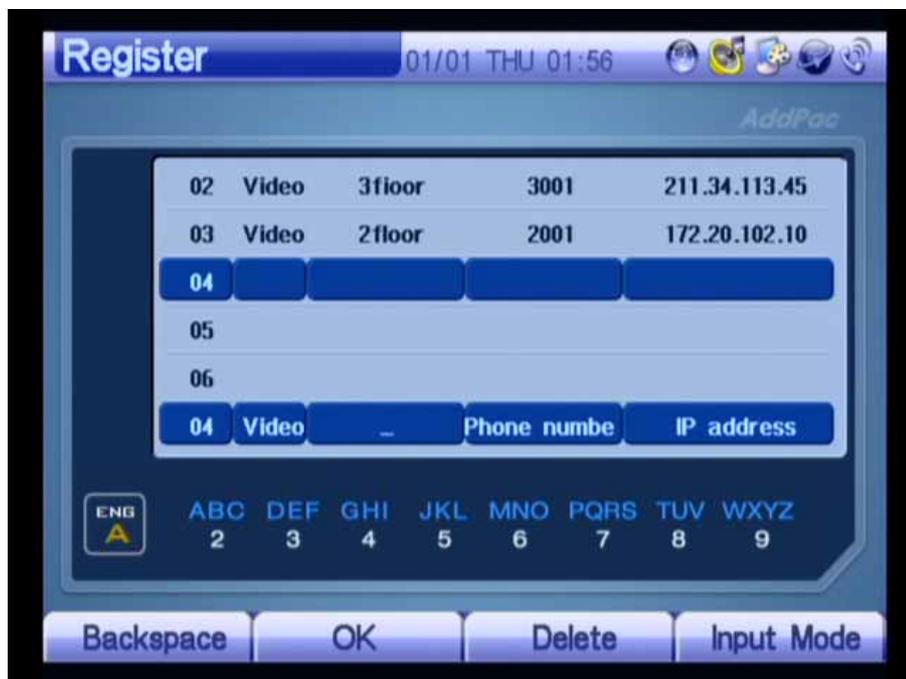
(Figure 3-36) Register



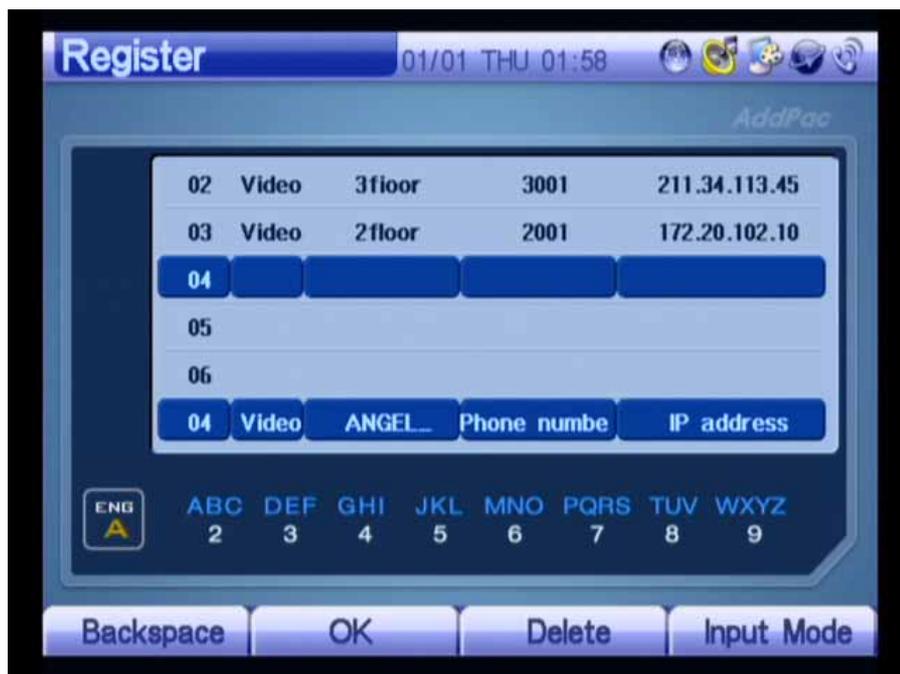
(Figure 3-37) Selecting Audio/Video Session Using Number Keys of Keypad



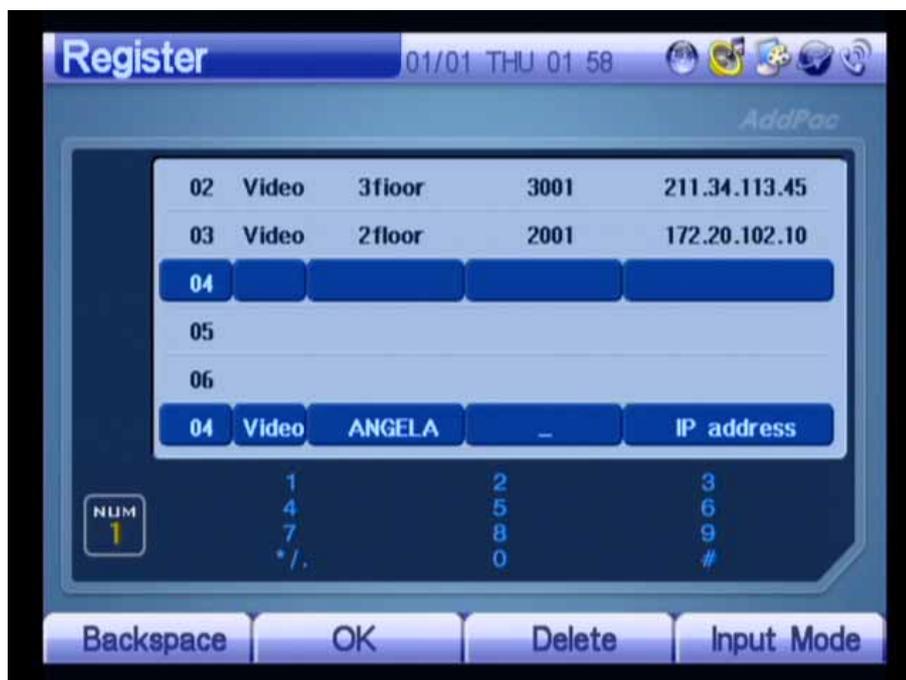
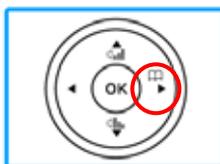
(Figure 3-38) Moving to the Name Textbox When Using the OK Key of Keypad



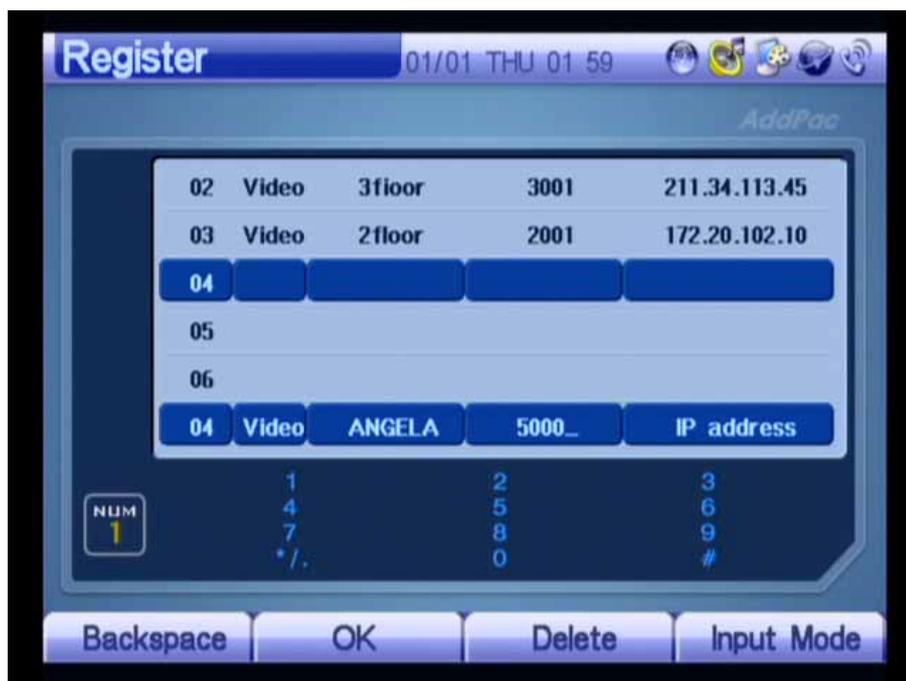
(Figure 3-39) Changing Input Mode to Alphabetical Uppercase
Using the F4 Button of Keypad



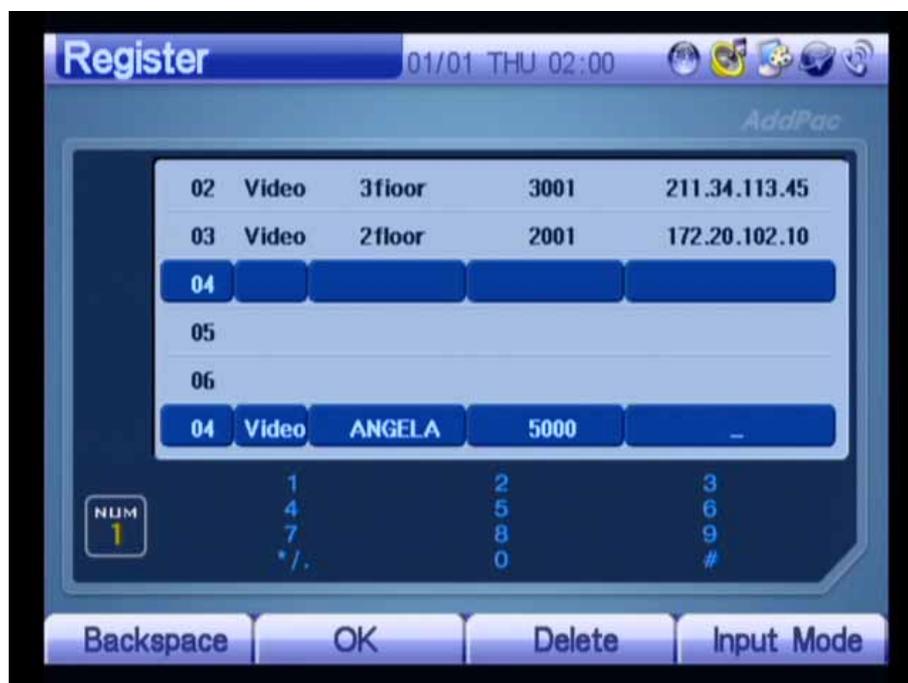
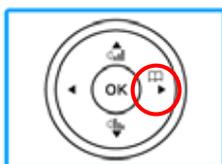
(Figure 3-40) Entering ANGELA in the Name Textbox



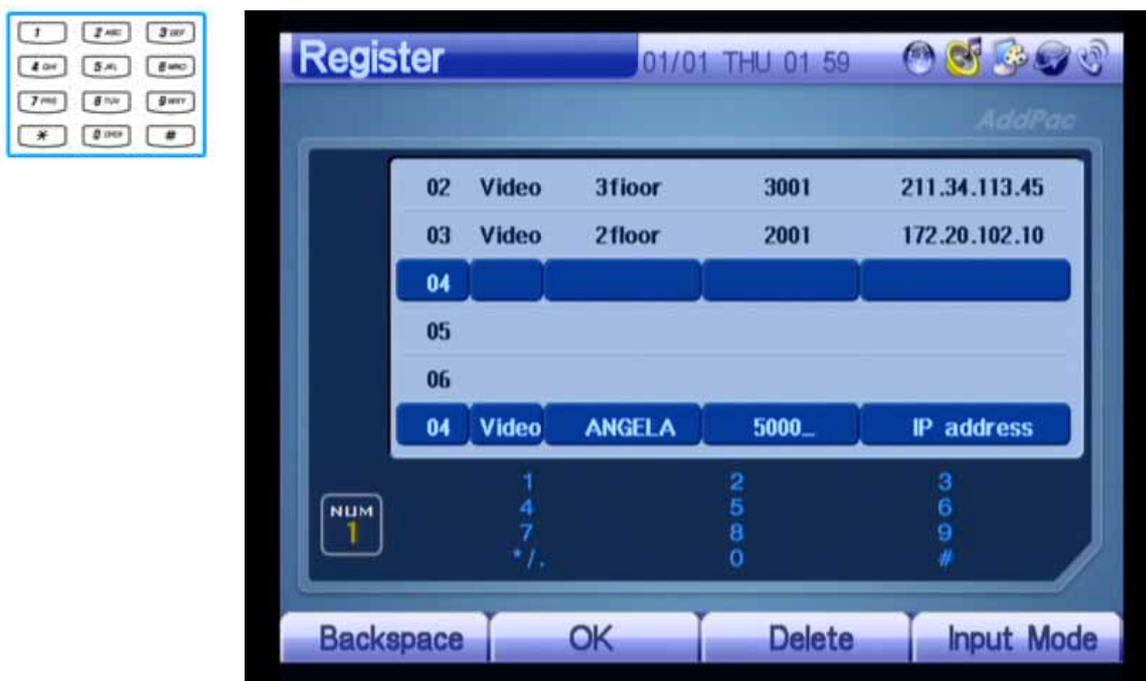
(Figure 3-41) Moving to the Phone Number by Pressing the OK Button of Keypad



(Figure 3-42) Entering 5000 as Phone Number



(Figure 3-43) Moving to the IP Address by Pressing the OK Button of Keypad



(Figure 3-44) Entering "213.23.112.32" as IP Address



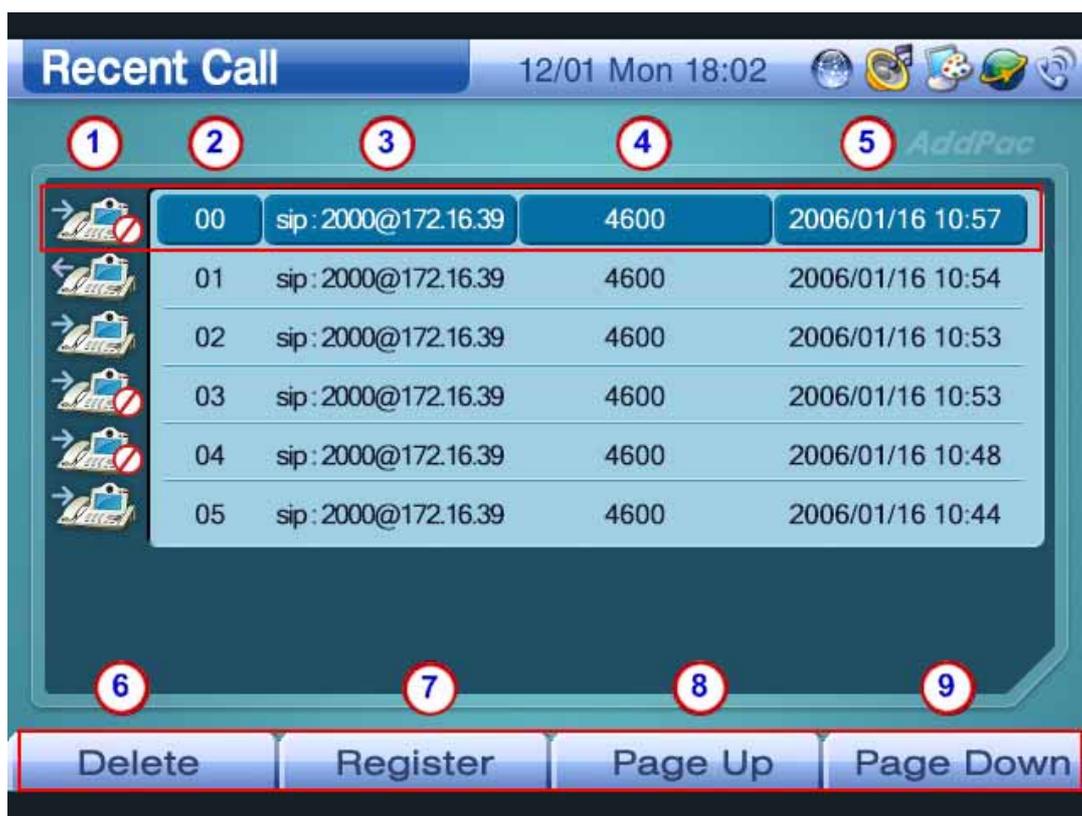
(Figure 3-45) Completing Input by Pressing the F2 Key After the "OK" Button of Keypad

Phone Book – Recent Call

Figure 3-46 shows a screen displayed when you select OSD >> Phone Book >> Recent Call. The Recent Call menu displays a recent call log and information on the other party. This menu allows you to make a call to an answered call, to check a call connected while you are absent, and to save incoming calls in the Phone Book menu.



(Figure 3-46) Recent Call Screen



(Figure 3-47) Recent Call Screen

Figure 3-47 shows a description of the Recent Call screen:

[Table 3-8] Recent Call Screen

| Category | Description |
|-------------------|--|
| Incoming/Outgoing |  Displays the connection of a voice call. |
| |  Displays that a voice call is connected and the call is not been answered. |
| |  Displays the origination of a voice call. |
| |  Displays that a voice call has not been made or connected. |
| |  Displays that a call is connected to a video phone. |
| |  Displays that a call is connected to a video phone and the call has not been answered. |

| | |
|---|--|
|  | Displays that a call is made to a video phone. |
|  | Displays that a call is made or connected to a video phone. |
| Index Number | Displays the index numbers in Phone Book. |
| Remote Information | Displays the call information on the other party. H.323 ID is displayed for the H.323 protocol, and URL is displayed for the SIP protocol. |
| Phone Number | Displays the caller ID. |
| Call Time | Displays the time when a call is made. |
| Delete (F1) | Deletes a call log. |
| Register (F2) | Saves the information on a session. |
| Page Up (F3) | Moves up one page. |
| Page Down (F4) | Moves down one page. |

Figures 3-48 to 3-52 show an example of making a call by using the information on incoming calls saved in the Recent Call menu:



(Figure 3-48) Selecting Menu >> Phone Book



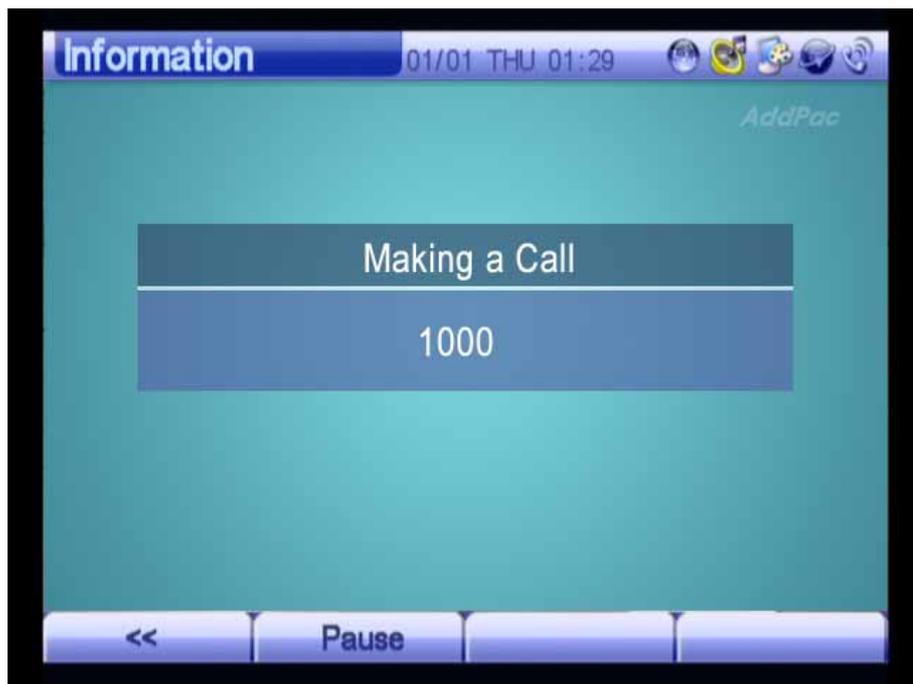
(Figure 3-49) Selecting Phone Book >> Recent Call



(Figure 3-50) Recent Call



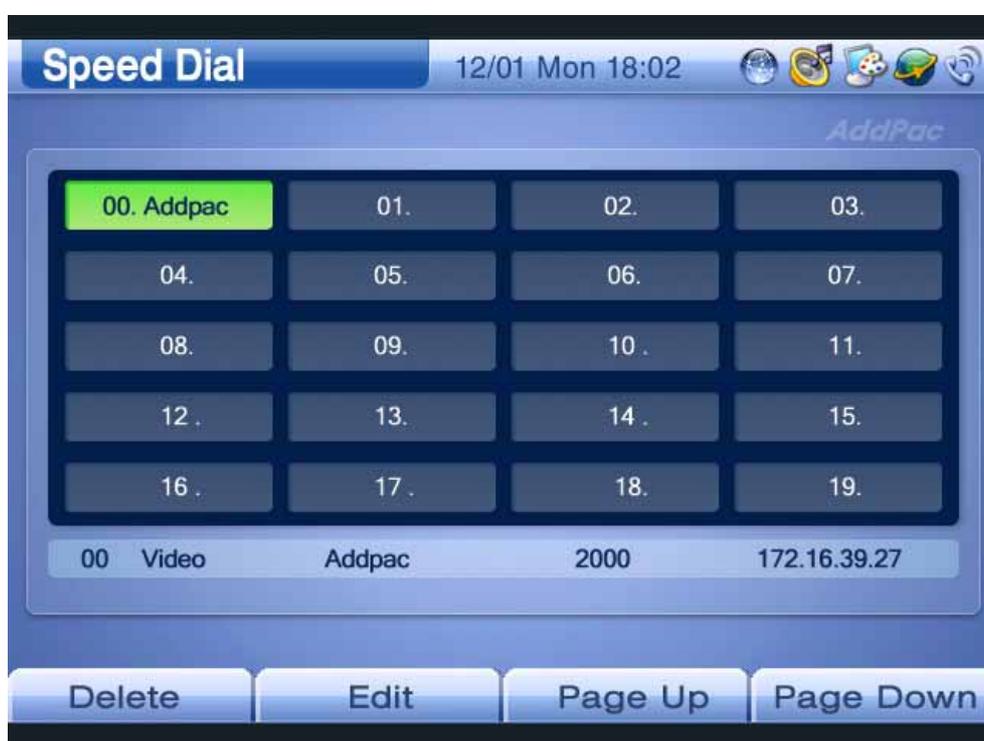
(Figure 3-51) Selecting Index 03



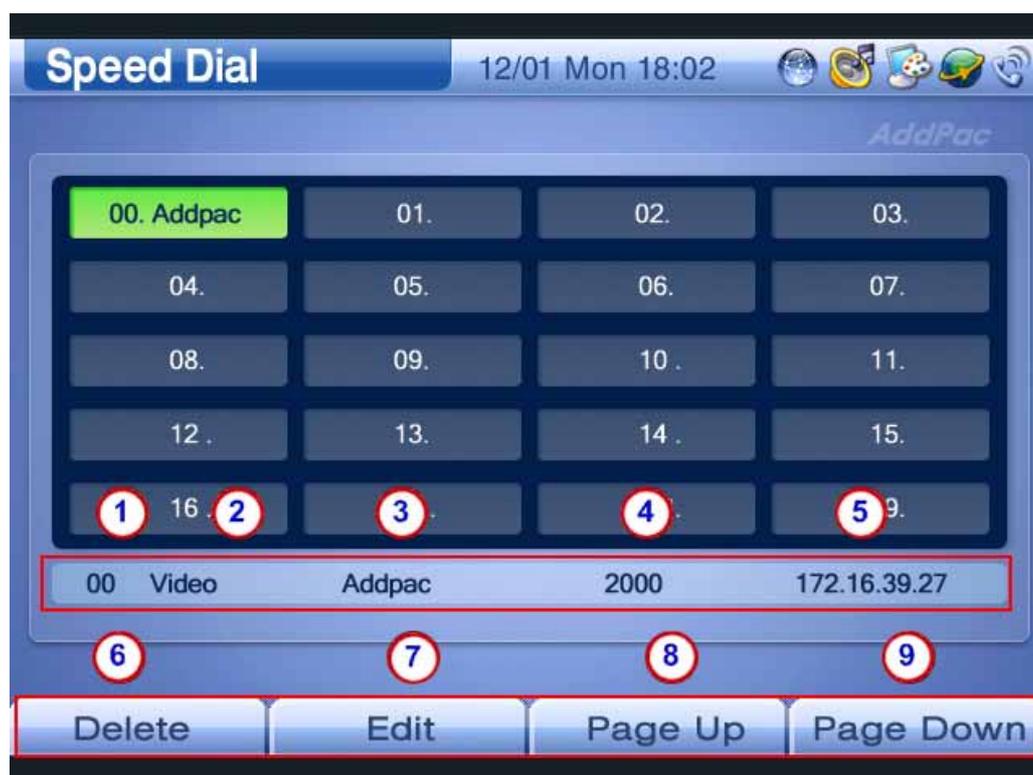
(Figure 3-52) Making a Call Using the Call Button of Keypad

Phone Book – Speed Dial

Figure 3-53 shows a screen displayed when you select OSD >> Phone Book >> Speed Dial. In the Speed Dial menu, phone numbers are sorted by index number and name only from the Phone Book menu. This menu allows you to search the phone number of the other party easily by displaying 20 phone numbers on the screen at a time. If you select a name, the information on the name will be displayed at the bottom of the screen. Use this feature to make a call promptly.



(Figure 3-53) Speed Dial Screen



(Figure 3-54) Speed Dial Screen

The Speed Dial screen is described in Table 3-9:

[Table 3-9] Speed Dial Screen

| Category | Description |
|---------------------|--|
| Index Number | Displays the index numbers in the Phone Book menu. |
| Session Information | Displays whether a session is only for voice or for video. |
| Name | Displays a name from the Phone Book menu. |
| Phone Number | Displays a caller ID. |
| IP Address | Displays the IP address of the other party. |
| Delete (F1) | Deletes information. |
| Edit (F2) | Edits session information. |
| Page Up (F3) | Moves up one page. |

Page Down (F4) Moves down one page.

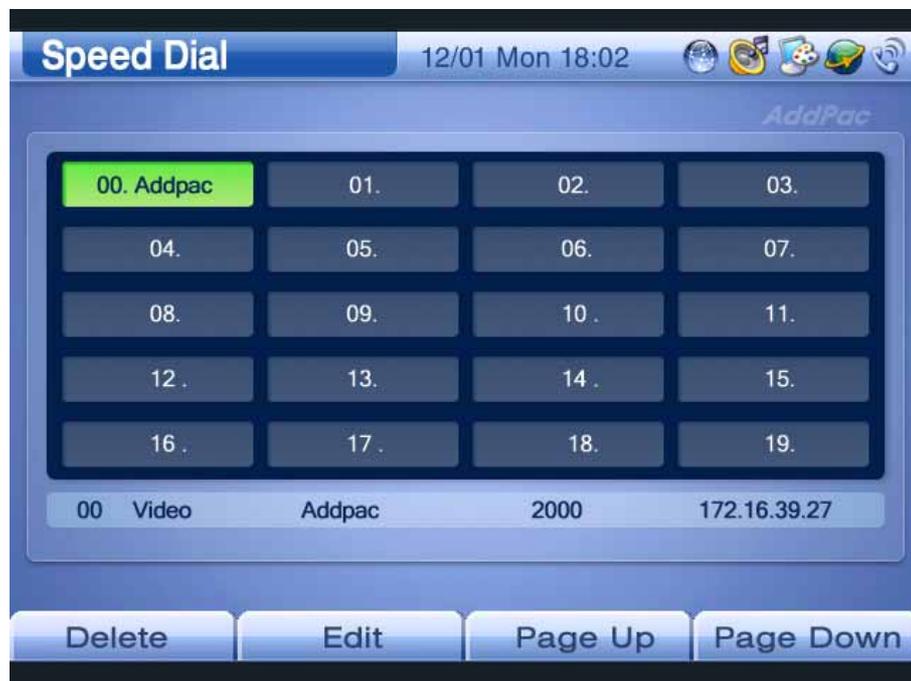
Figures 3-55 to 3-58 show an example of making a call by using the speed dial:



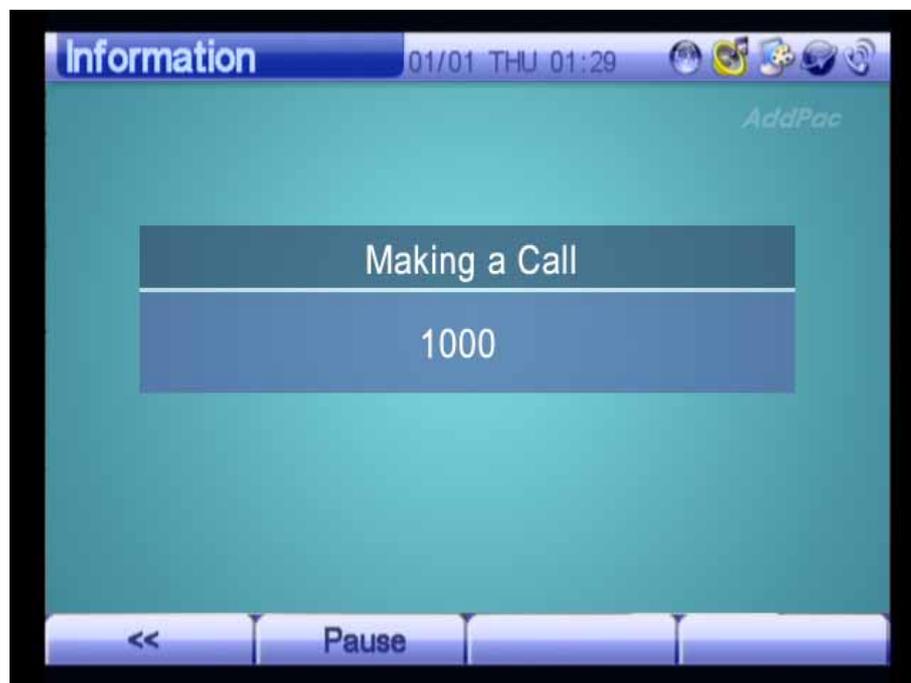
(Figure 3-55) Selecting Menu >> Phone Book



(Figure 3-56) Selecting Phone Book >> Speed Dial



(Figure 3-57) Selecting Index 04



(Figure 3-58) Making a Call Using the Call Button of Keypad

Tool Box Menu

This menu is configured with the Date & Time, Save All, Factory Default, Ring, and Power Save submenus.



(Figure 3-59) Tool Box Screen

[Table 3-10] Tool Box Menus

| Category | Description |
|---|--|
|  | Enters or changes the time of AP-VP150. |
|  | Saves modifications in OSD of AP-VP150. |
|  | Initializes the settings of AP-VP150 to the factory default. |



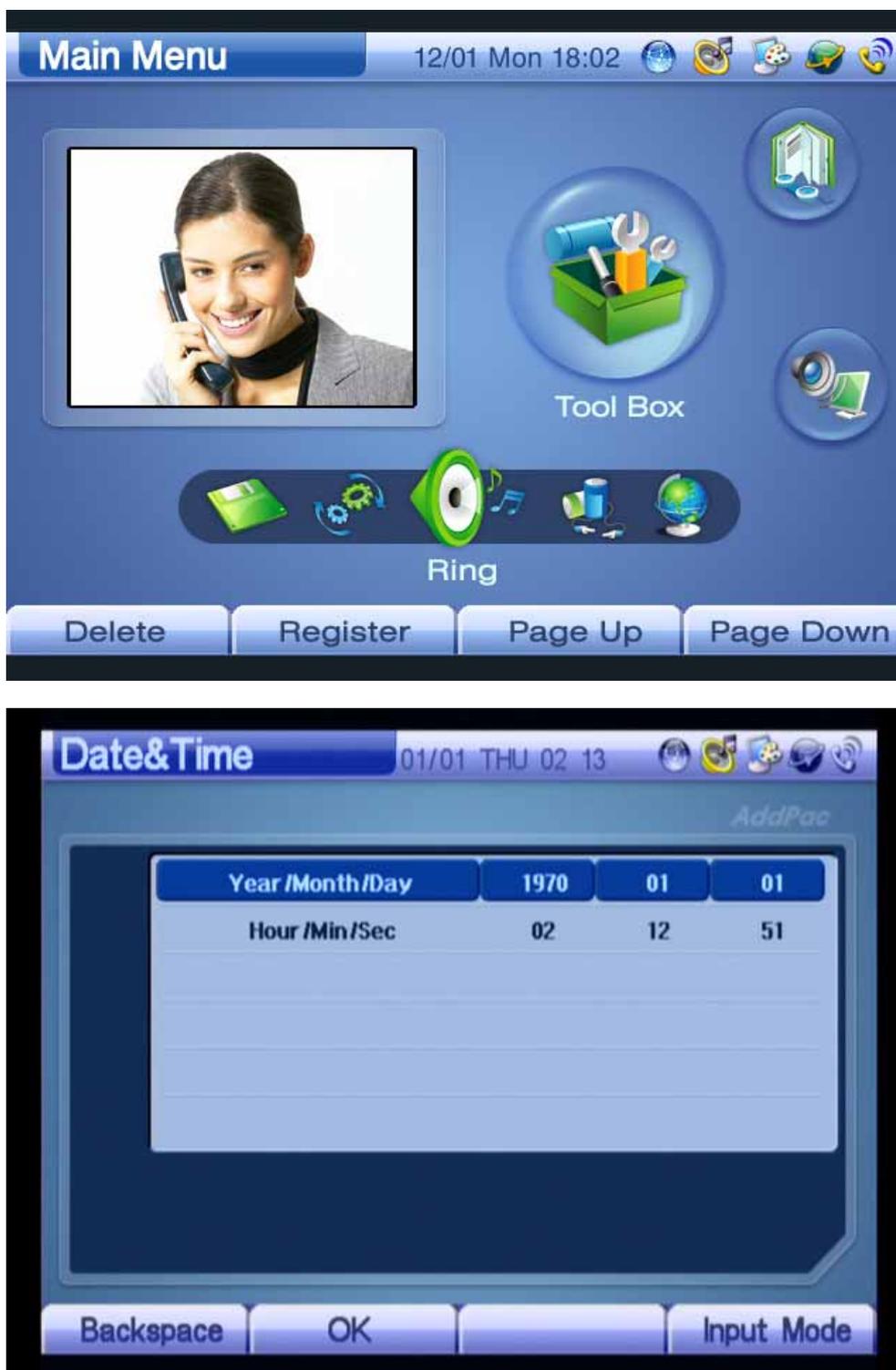
Changes the ringing sound of AP-VP150 (To be enabled).



Saves the power of AP-VP150 LCD/camera.

Tool Box — Date & Time

This menu allows you to set the time and date in AP-VP150. You can use enter the time and date by using the remote control, and save them by using the SAVE(F2) button on the remote control.



(Figure 3-60) Date & Time Screen

[Table 3-11] Date & Time

| Category | Description |
|-----------------|---|
| Year | Enter the year in the current system. |
| Month | Enter the month in the current system. |
| Day of the Week | Enter the day in the current system. |
| Hour | Enter the hour in the current system. |
| Minute | Enter the minute in the current system. |
| Second | Enter the second in the current system. |

Tool Box – Save All

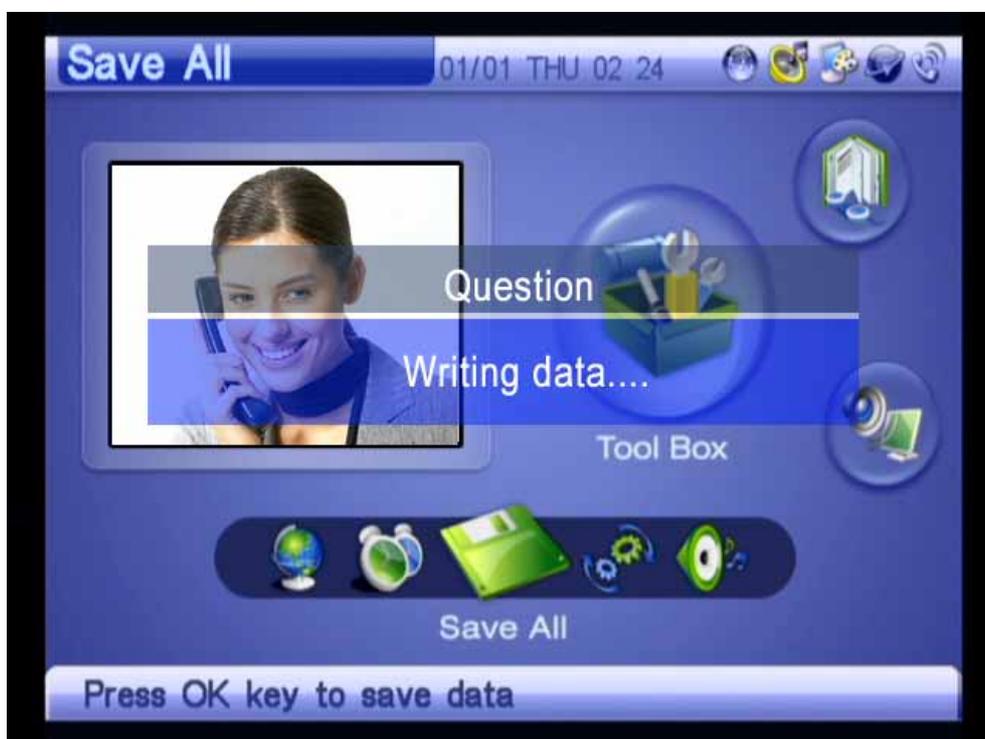
This menu allows you to save the values entered by using the remote control in OSD. Once the settings are saved, the settings remain the same even when AP-VP150 restarts.



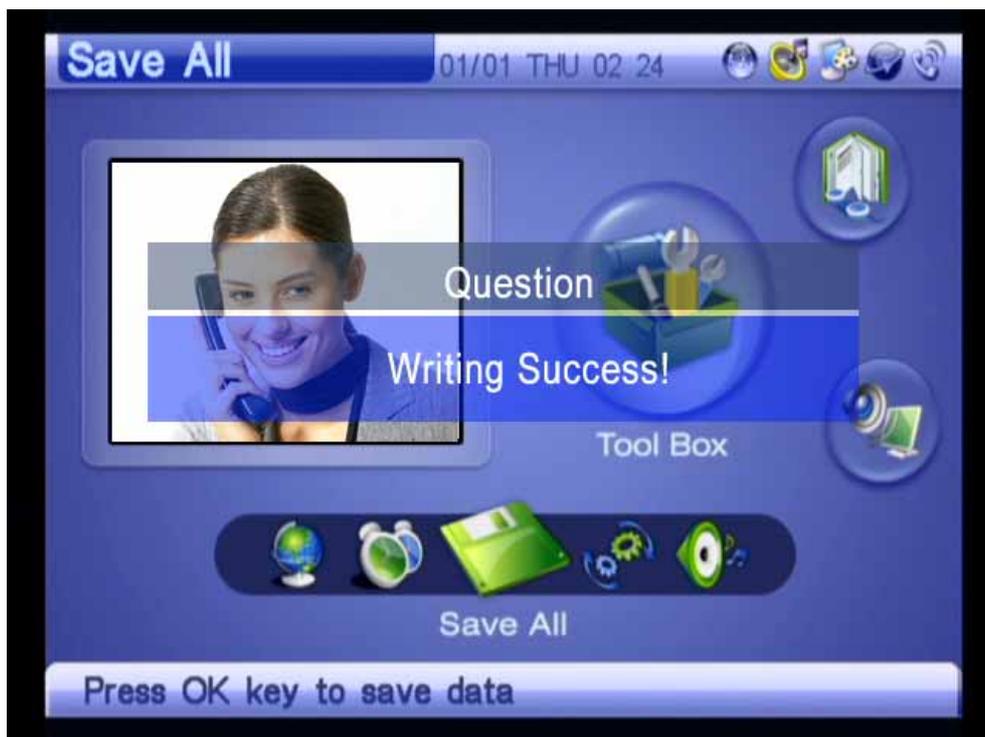
(Figure 3-61) Save All Screen



(Figure 3-62) Selecting the “OK” Button of the Keypad to Save Data



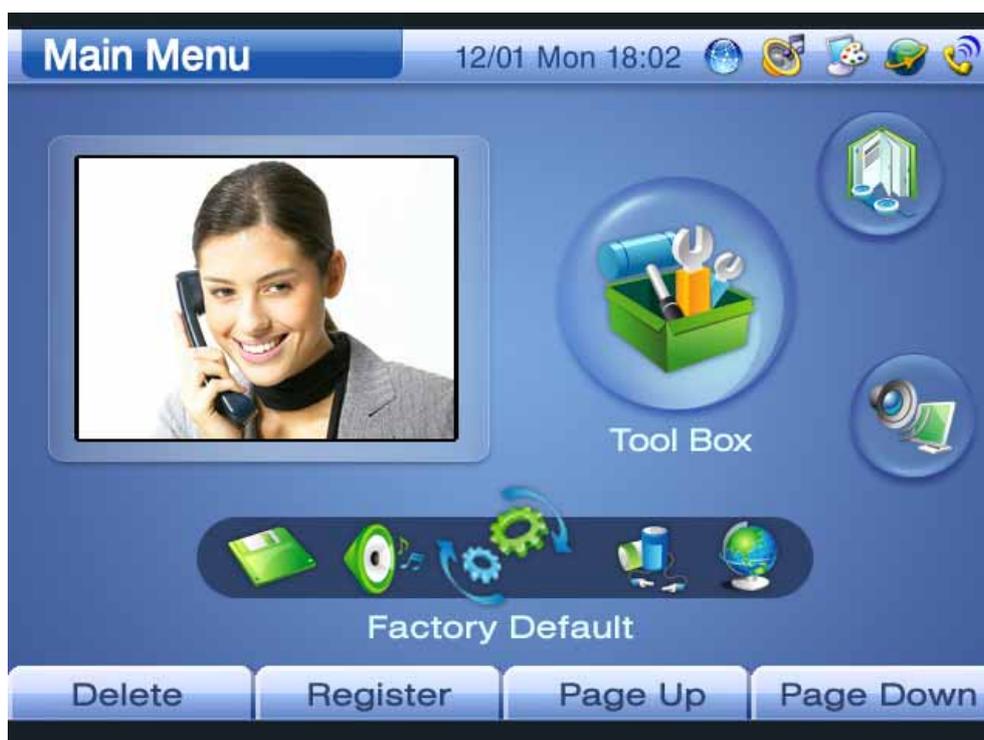
(Figure 3-63) Display Screen of the “Writing” Message



(Figure 3-64) Checking the Display of the “Writing Success” Message

Tool Box – Factory Default

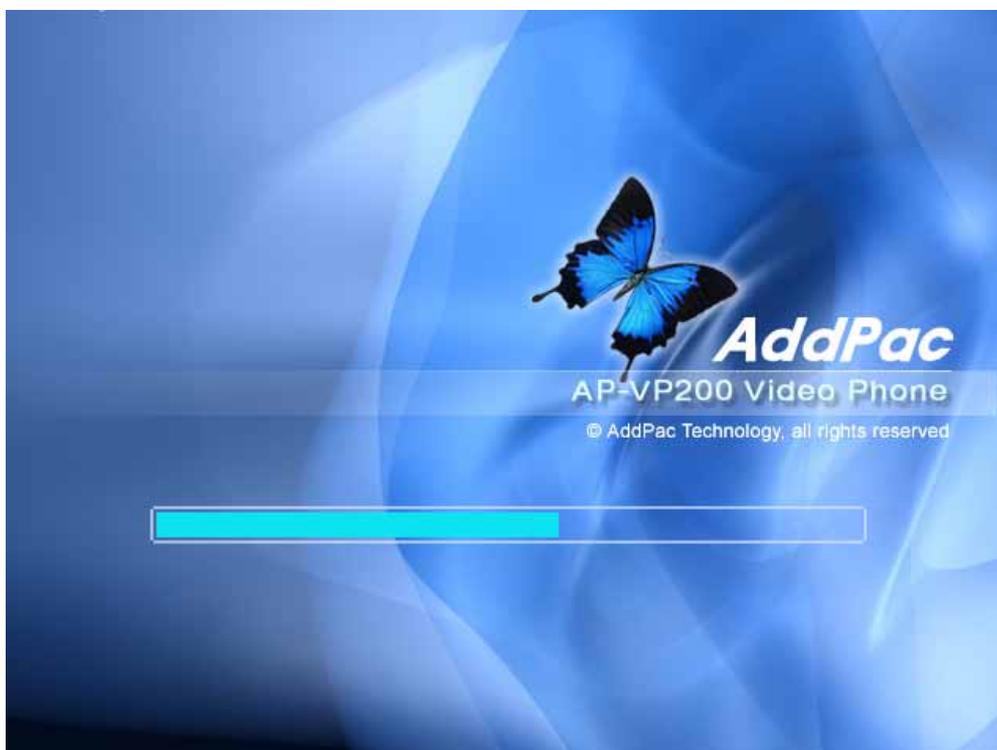
This menu allows you to delete and automatically reset the Configuration, Phone Book, and Recent Call menus of AP-VP150. It is not recommended that you should enable this menu except that this menu is requisite.



(Figure 3-65) Factory Default Screen



(Figure 3-66) Pressing the “OK” Button for Three Seconds After Selecting the Factory Default Menu



(Figure 3-67) Restarting Automatically After All Settings and Records are Deleted

Tool Box – Ring (To be Enabled)

This menu allows you to select seven types of ringing sound from the internal speaker including mute when an outside call is made. You can hear six types of ringing sound except for mute by using the F1 key (Play) and select one. Also, you can adjust volume of the ringing sound by using the Volume menu.



Tool Box – Power Save

This menu enables LCD and the internal camera to turn off automatically in accordance with the time setting for the purpose of power saving. AP-VP150 in power saving mode allows you to turn on LCD and the camera by using the touch screen or keypad. **It is recommended that this menu should be enabled for longer lifetime of LCD and quality assurance.**



(Figure 3-68) Power Save Screen

As shown in 3-69, you can select a time from 5, 10, 20, 30, or 45 minutes (**Default: 10 minutes**).



(Figure 3-69) Power Save Screen

AV Setup Menu

This menu is configured with the Volume, Display, Audio Codec, Video Codec, Bandwidth, and IO Ports submenus. The submenus allow you to enable acoustic and video features mainly. You can control all of the features by using the keypad easily, and select or enable most of the features in real-time while calling.



(Figure 3-70) AV Setup Screen

[Table 3-12] AV Setup Menu

| Category | Description |
|---|--|
|  | <p>Adjusts ringing sound from the internal speaker and the volume of the audio I/O port. You can adjust the volume by using the slide-type bar.</p> |
|  | <p>Performs composite RCA video input, and adjusts the brightness and sharpness of composite RCA video and S-VHS output.</p> |
|  | <p>Selects the audio codec of the audio I/O port from G.711(PCM) and G.726(ADPCM).</p> |
|  | <p>Adjusts MPEG4/H.263, bandwidth, resolution, and frame rate, and selects the best image quality depending on network status.</p> |
|  | <p>Sets the bandwidth from 128 Kbps to 4160 Kbps.</p> |
|  | <p>Controls the microphone/line-in properties of the input port and the speaker/line-out properties of the audio output port depending on the attributes of the I/O port of an acoustic device that will inter-work with AP-VP150.</p> |

AV Setup – Volume

This menu allows you to adjust the volume of the audio I/O port and internal speaker and to amplify the microphone.

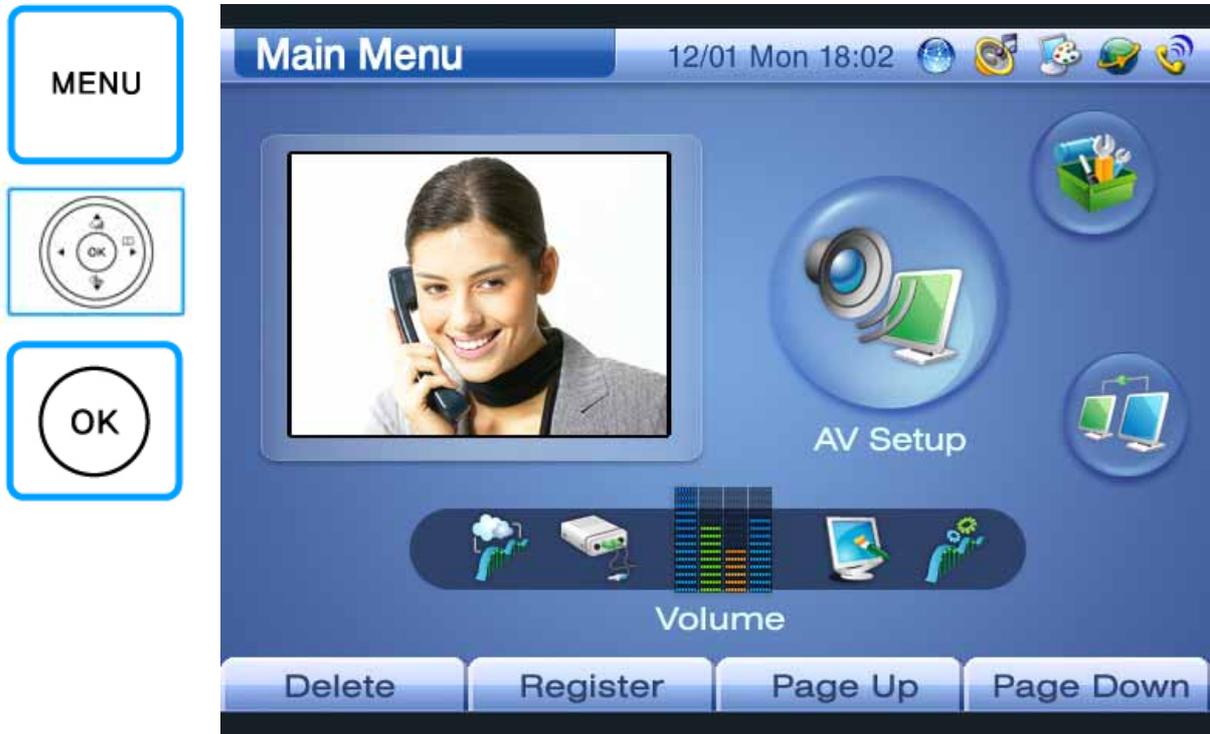


(Figure 3-71) Volume Screen

[Table 3-13] Volume Menu

| Category | Description |
|-----------|---|
| Ext In | Selects the volume of the audio I/O port. |
| Ext Out | Selects the volume of the audio output port. |
| Bell Vol | Selects the volume of a ringing sound from the internal speaker. |
| Input | Selects the input volume of the speaker phone and handset. |
| Output | Selects the output volume of the speaker phone and handset. |
| Mic Boost | Enables or disables the boost feature when audio input is performed by using MIC. |

Figures 3-72 to 3-78 show an example of adjusting the volume of the audio I/O port. You can control the volume by using the left/right direction keys of the keypad.



(Figure 3-72) Selecting Menu >> AV Setup



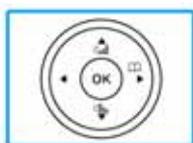
(Figure 3-73) Selecting AV Setup >> Volume



(Figure 3-74) Adjusting Audio Input Volume to 5



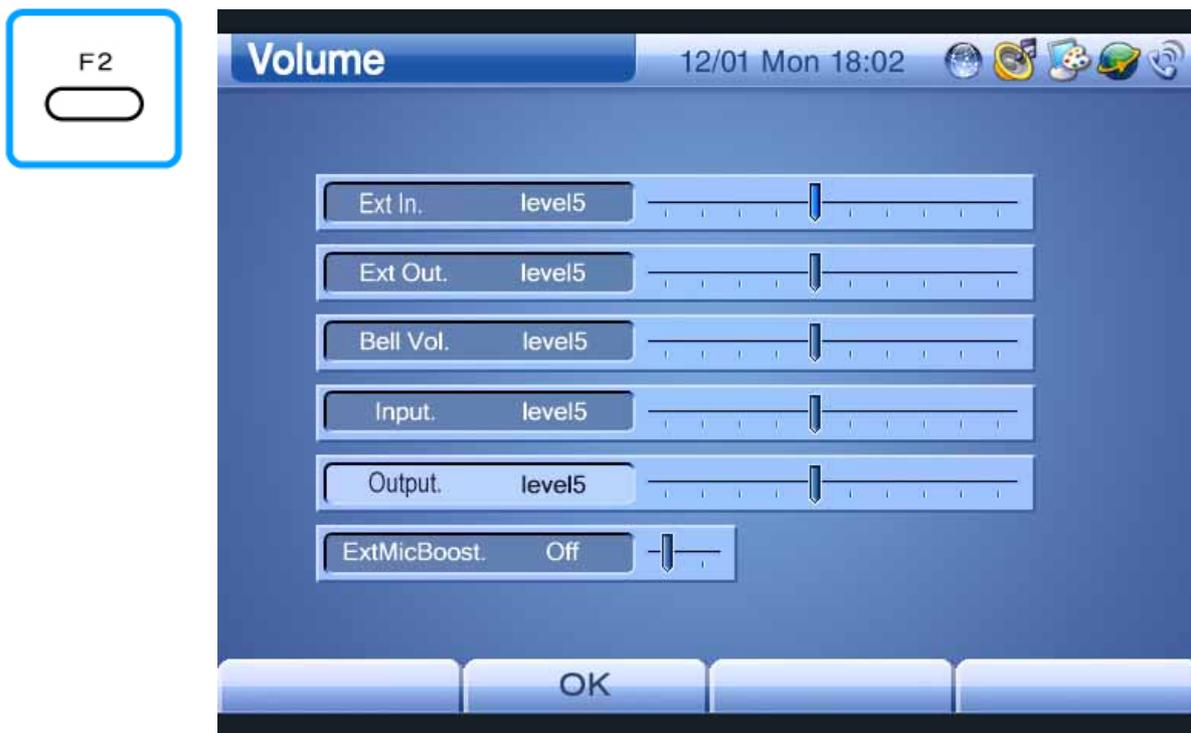
(Figure 3-75) Adjusting Audio Output Volume to 7



(Figure 3-76) Adjusting Ringing Sound Volume to 3



(Figure 3-77) Adjusting Speaker Phone/Headset Input Volume to 3



(Figure 3-78) Adjusting Speaker Phone/Headset Output Volume to 6

AV Setup – Display

This menu has the Camera In (Internal camera and composite RCA video input) and Display Out (Internal LCD, composite RCA video output, and S-VHS) submenus. The Camera In submenu has the Brightness, Contrast, Saturation, Horizontal Offset, Vertical Offset, and Mirror options. This menu is configured with Brightness, Blue Gain, and Red Gain.



(Figure 3-79) Display Screen

[Table 3-14] Display Menu

| Category | Description |
|-------------|---|
| Camera In | Adjusts or mirrors the brightness, contrast, and saturation of the internal camera and composite RCA video input port. You can move to an option by pressing the “OK” button. |
| Display Out | Adjusts output of the internal LCD and composite RCA video, brightness of S-VHS output, Red-Gain, and Blue-Gain. You can move to an option by pressing the “OK” button. |

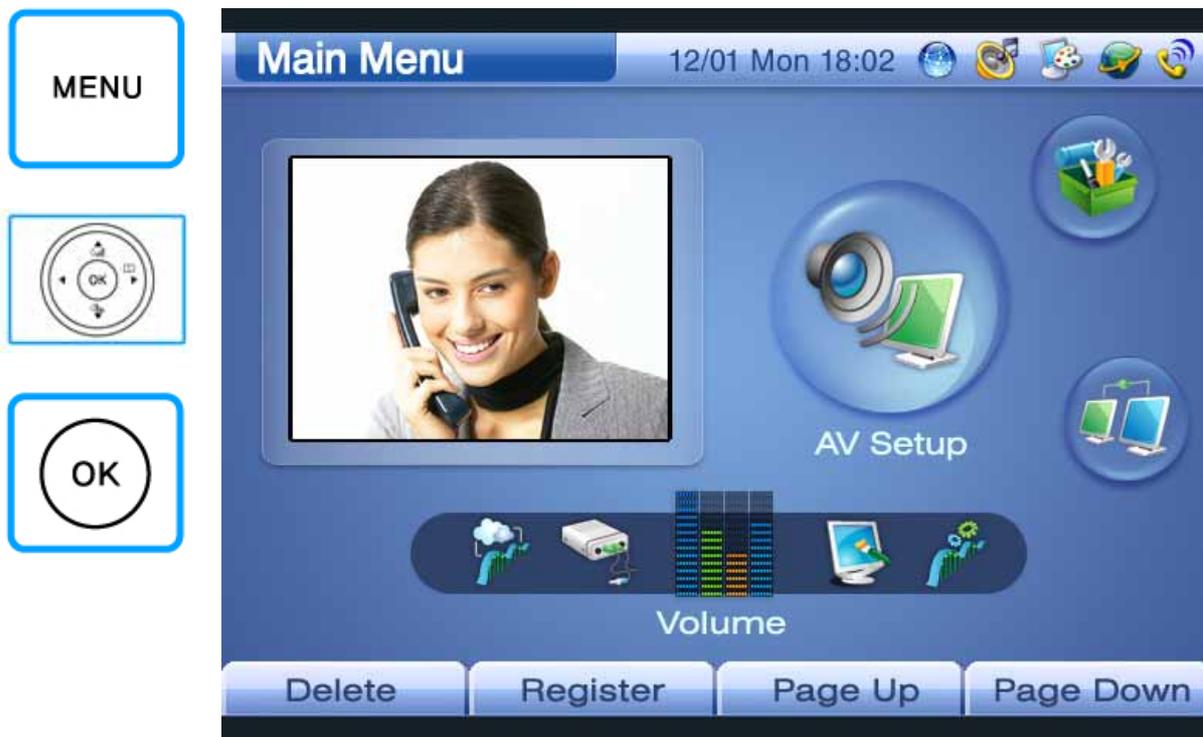


(Figure 3-80) Adjusting Camera Input Screen

[Table 3-15] Camera In Menu

| Category | Description |
|-------------------|--|
| Brightness | Adjusts brightness of the composite video input. The maximum value is 255, and the default is 128. |
| Color Contrast | Adjusts color contrast of the composite video input. The default is 64. |
| Saturation | Adjusts saturation of the composite video input. The default is 68. |
| Horizontal Offset | Adjusts default horizontal offset of the composite video input. The default is 8. |
| Vertical Offset | Adjusts the default vertical offset of the composite video input. The default is 19. |
| Mirror | Changes the left and right directions of LCD. |
| Flickless | Turns on by using the F1 key of the keypad/remote control. Flickless On is enabled when the indoor fluorescent light is 50 Hz. It is recommended that you should enable Flickless Off. |

Figures 3-81 to 3-88 show an example of adjusting the Camera In screen:



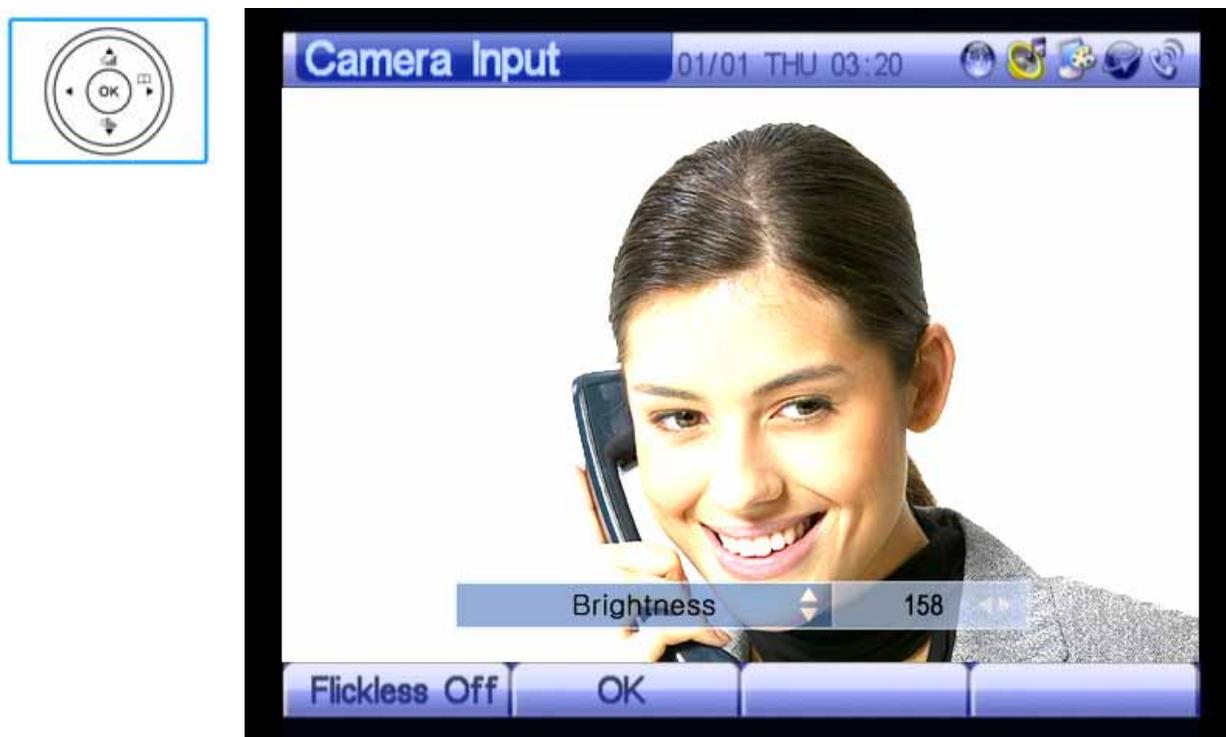
(Figure 3-81) Selecting Menu >> AV Setup



(Figure 3-82) Selecting AV Setup >> Screen



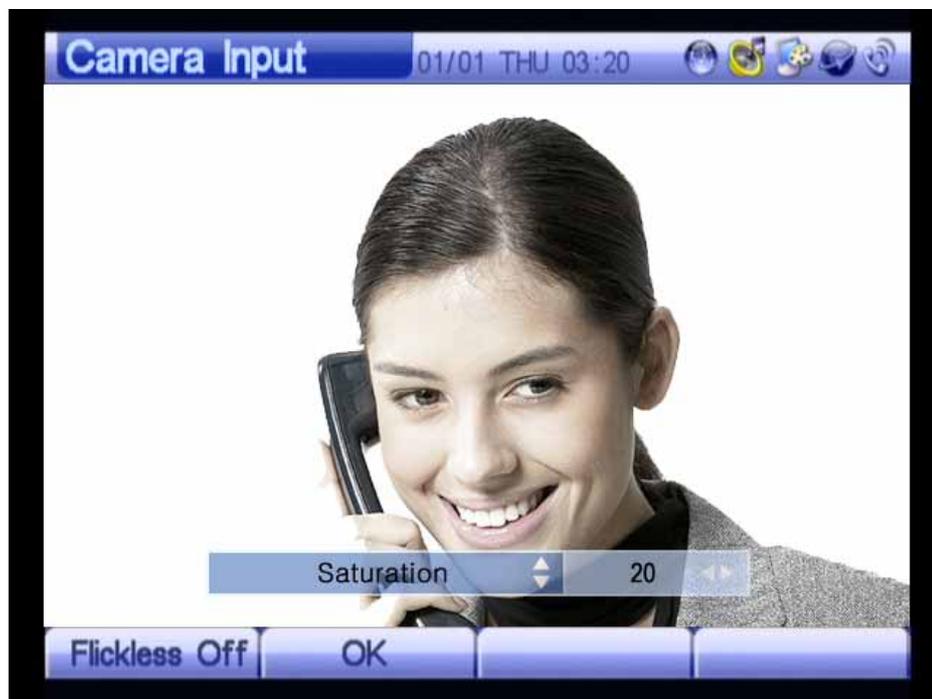
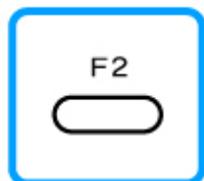
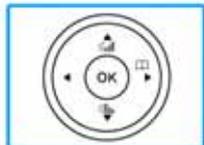
(Figure 3-83) Selecting Screen >> Camera In



(Figure 3-84) Adjusting Brightness



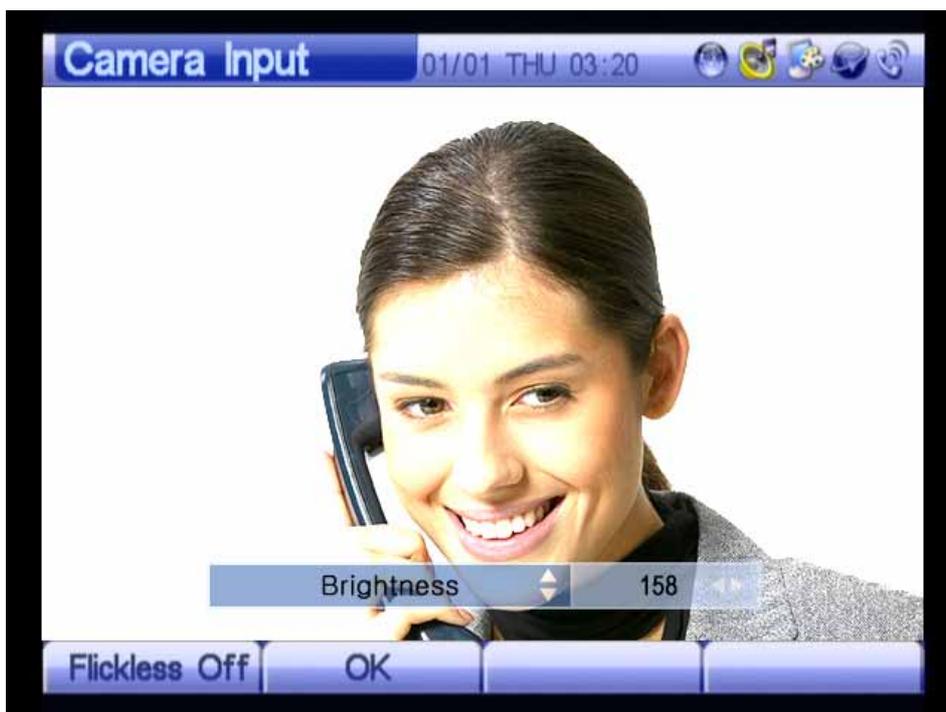
(Figure 3-85) Adjusting Contrast



(Figure 3-86) Adjusting Saturation by Using the F2 Button of the Keypad



(Figure 3-87) Inverting Camera Input Left or Right



(Figure 3-88) Adjusting Display

[Table 3-16] Display Out Menu

| Category | Description |
|------------|---|
| Brightness | Adjusts the brightness of the composite video and S-VHS output. The default is 19. |
| Blue Gain | Adjusts the composite video and S-VHS output by using the blue bar. The default is 128. |
| Red Gain | Adjusts the composite video and S-VHS output by using the red bar. The default is 128. |

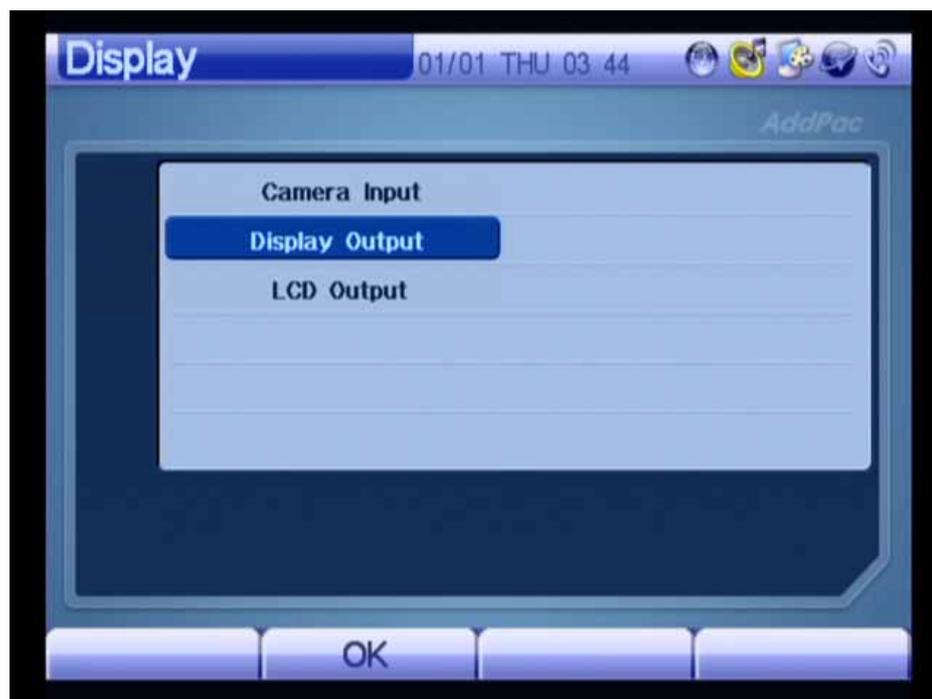
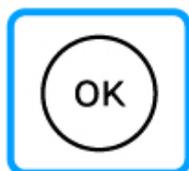
Figures 3-89 to 3-94 show an example of adjusting the Display screen:



(Figure 3-89) Selecting Menu >> AV Setup



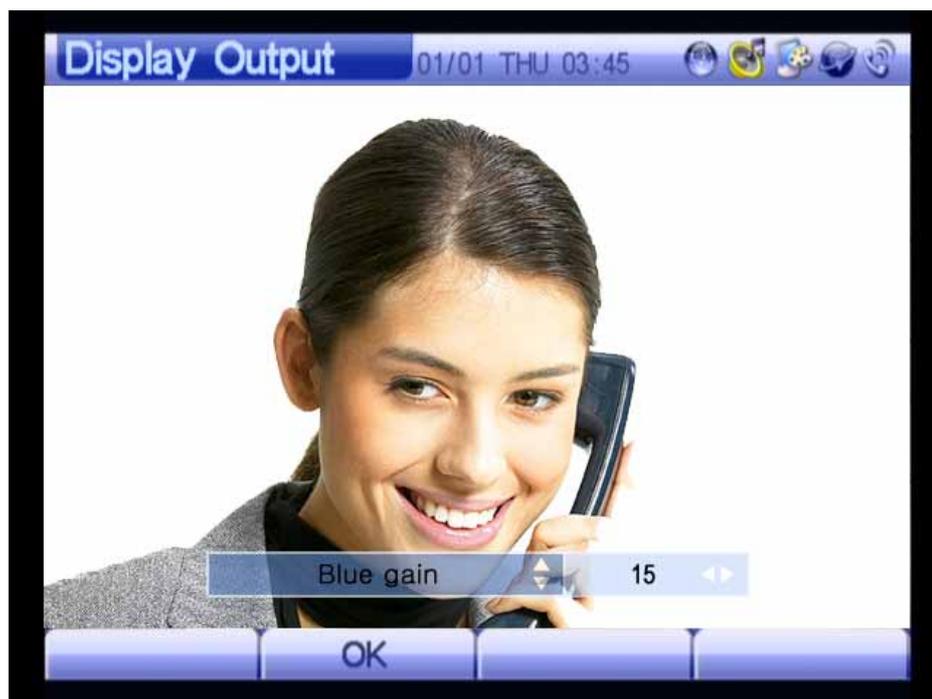
(Figure 3-90) Selecting AV Setup >> Display



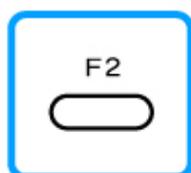
(Figure 3-91) Selecting Display >> Display Out



(Figure 3-92) Adjusting Brightness



(Figure 3-93) Adjusting Blue Gain



(Figure 3-94) Adjusting Red Gain

AV Setup – Audio Codec

This menu allows you to select the voice codec of AP-VP150. You can select G.711[PCM], G.729, or G.723.1 in OSD depending on your environment. Set the priority of the audio codecs depending on network environments and sound quality.



(Figure 3-95) Audio Codec Screen

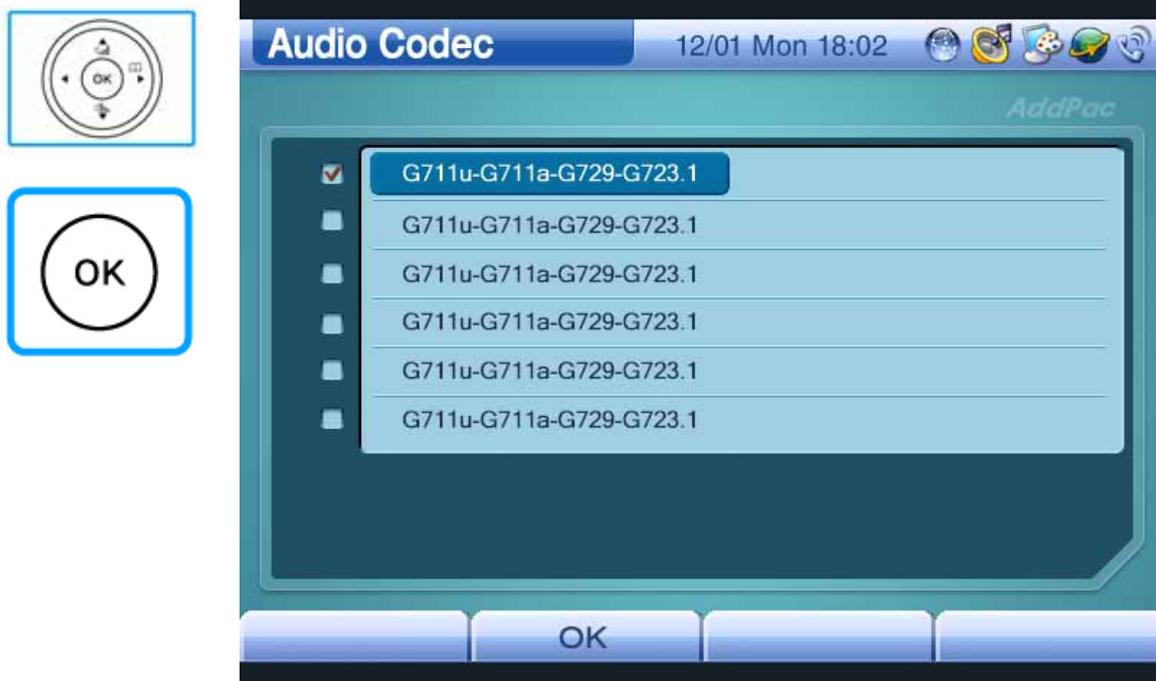
Figures 3-96 to 3-98 show an example of selecting an audio codec:



(Figure 3-96) Selecting Menu >> AV Setup



(Figure 3-97) Selecting AV Setup >> Audio Codec



(Figure 3-98) Changing Priority of Codecs

AV Setup – Video Codec

This menu allows you to select a video codec used for AP-VP150. MPEG-4 and H.263 are used for AP-VP150, and the image quality of MPEG-4 is better than that of H.263. Examples of H.263 include QCIF and CIF, and those of MPEG-4 include QVGA, HalfVGA, and VGA. You can select a video codec, resolution, and frame rate from OSD.



(Figure 3-99) Video Codec Screen

Figures 3-101 to 3-105 show an example of selecting a video codec:



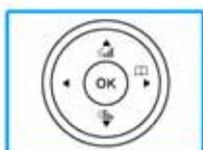
(Figure 3-101) Selecting Menu >> AV Setup



(Figure 3-102) Selecting AV Setup >> Video Codec



(Figure 3-103) Selecting the MPEG-4 Codec



(Figure 3-104) Setting Image Size to VGA



(Figure 3-105) Setting Frame Rate to 30 fps

AV Setup – Bandwidth



(Figure 3-106) Video Bandwidth Setting Screen

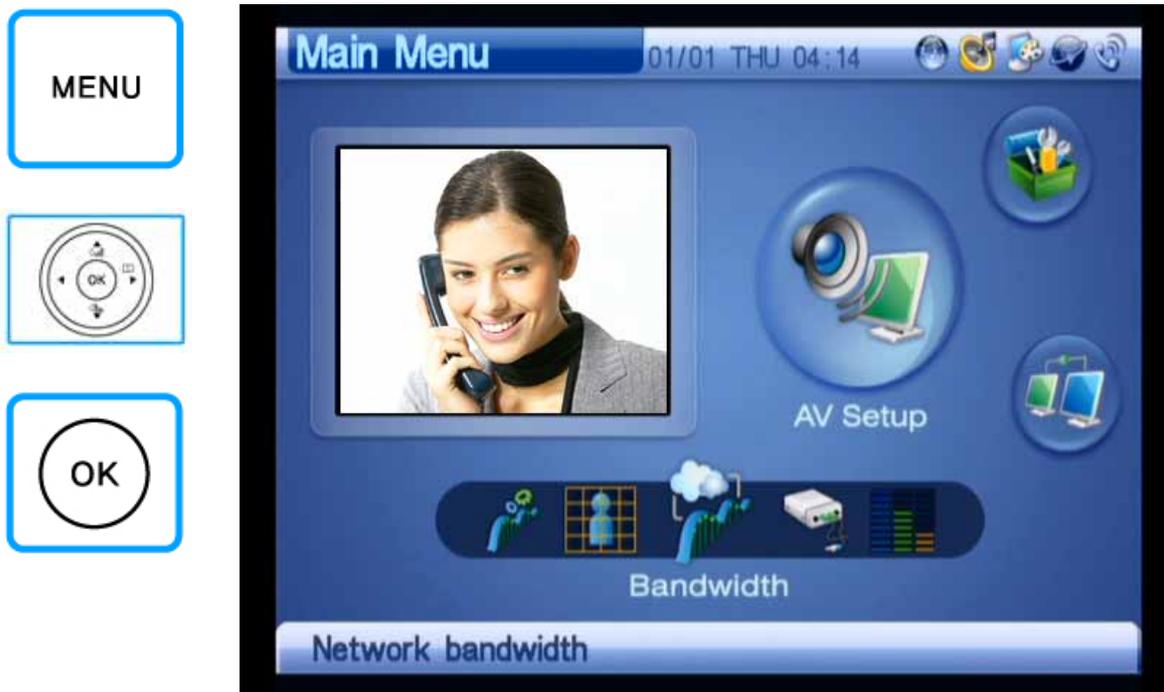


(Figure 3-107) Video Bandwidth Setting Screen

[Table 3-18] Video Bandwidth Settings

| Category | Description |
|-----------------|---|
| Bandwidth | Changes the bandwidth setting in a higher-level range. |
| Detail | Sets a bandwidth in detail. Changes the bandwidth in the unit of 64 kbps. |

Figures 3-108 to 3-112 show an example of setting a video bandwidth:



(Figure 3-108) Selecting Menu >> AV Setup



(Figure 3-109) Selecting AV Setup >> Video Codec



(Figure 3-110) Setting Bandwidth to 4096 Kbps



(Figure 3-111) Setting the Higher-Level Range of Bandwidth



(Figure 3-112) Setting the Bandwidth in Detail to 4096 Kbps

AV Setup – I/O Ports

This menu allows you to select the property of the audio I/O port. Since the audio input port can be connected to the line-out of the microphone or DVD player, you should select a microphone or line-in to fit for the attributes of this product. Since the audio output port is connected to the internal speaker/line-out, select an internal speaker or a separate speaker system to perform audio output when inter-working with the video broadcasting system.



(Figure 3-113) I/O Ports Screen

[Table 3-19] I/O Port Settings

| Category | Description |
|-------------------|---|
| Audio Input Port | Sets the microphone/line-in properties of the AIN (audio input) port on the rear panel of AP-VP150. |
| Audio Output Port | Sets the line-out property of the rear panel and internal speaker. |

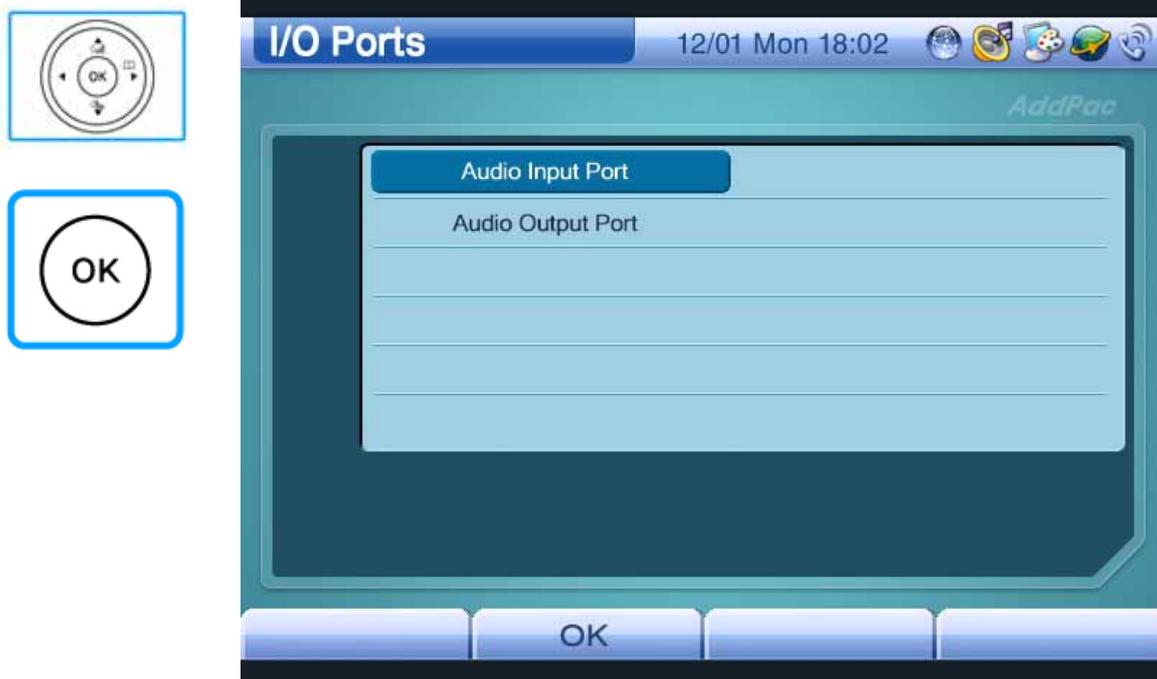
Figures 3-114 to 3-121 show an example of changing the property of the audio input port to line-in, and that of the audio output port to line-out:



(Figure 3-114) Selecting Menu >> AV Setup



(Figure 3-115) Selecting AV Setup >> IO Ports



(Figure 3-116) Selecting Audio Input Port



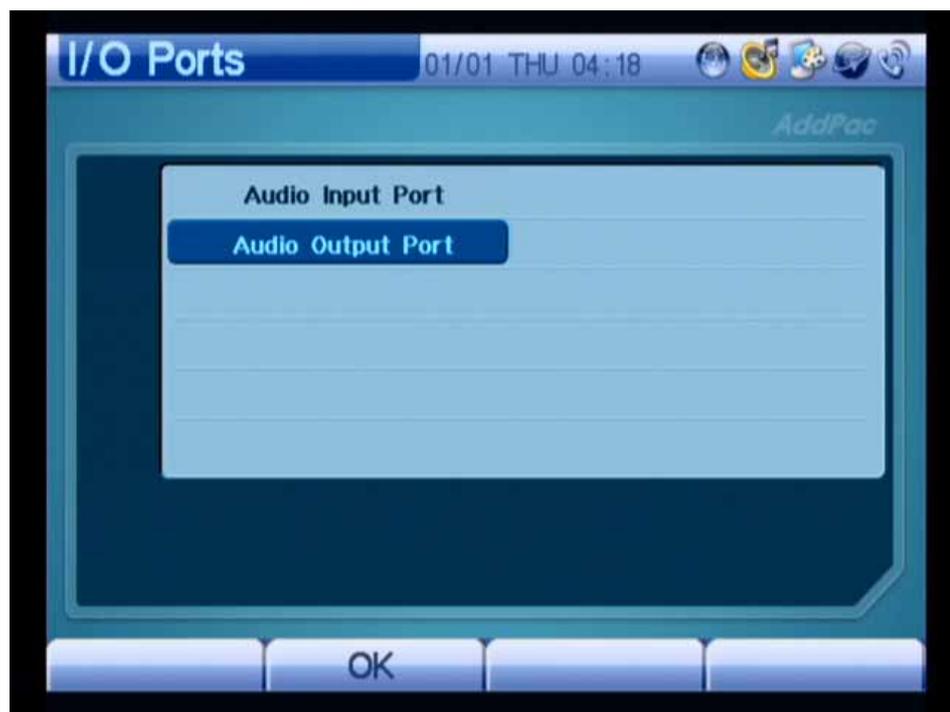
(Figure 3-117) Audio Input Port



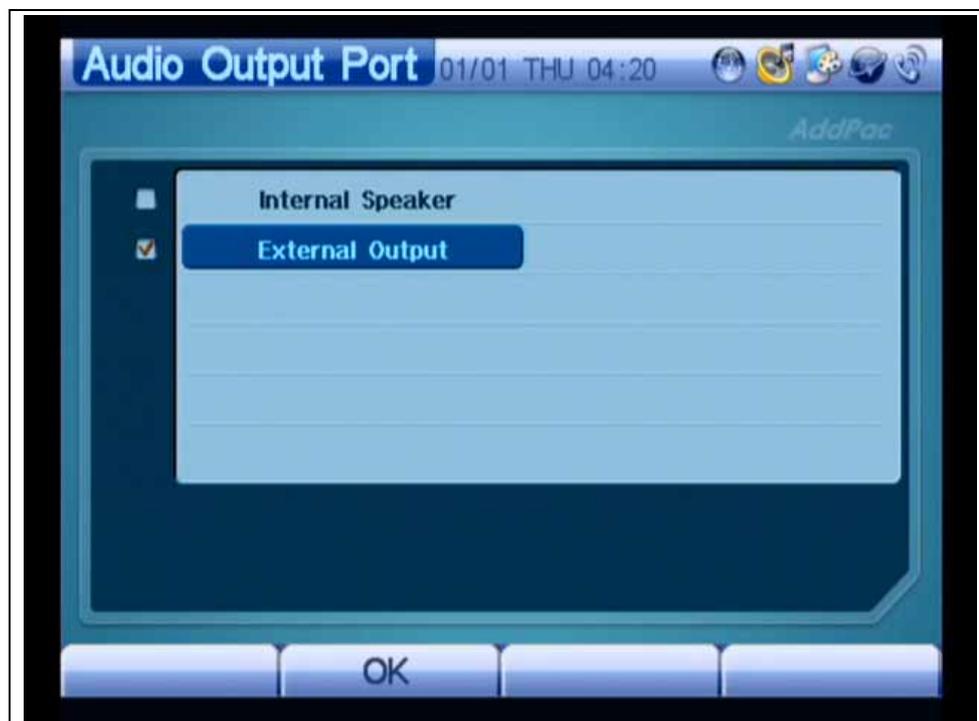
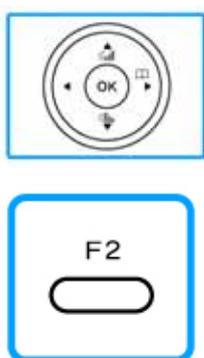
(Figure 3-118) Selecting Line Input, Moving to the Upper Menu by Pressing the CANCEL Key



(Figure 3-119) Selecting Audio Output Port



(Figure 3-120) Audio Output Port



(Figure 3-121) Selecting External Output

Network Setup Menu

This menu is configured with the submenus for WAN/LAN interface setting, SIP/H.323 signaling, services such as FTP, QoS for video, and other calling options. You should fully understand this menu to use AP-VP150. The menu is very important to build the optimal environment.



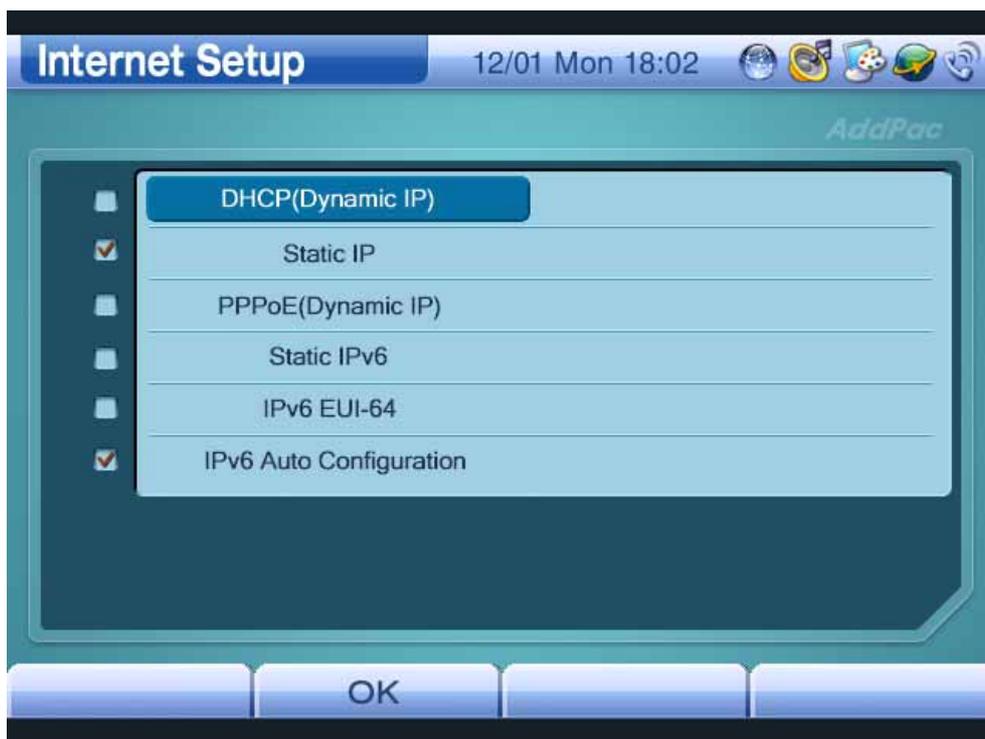
(Figure 3-122) Network Setup Screen

[Table 3-20] Network Setup Menu

| Category | Description |
|---|--|
|  | This menu allows you to set the WAN interface of AP-VP150. You can select DHCP, static IP address, or PPPoE depending on your network environment. |
|  | This menu allows you to set the LAN interface of AP-VP150 and to use AP-VP150 as an IP sharing equipment or a bridge. |
|  | Uses a phone in the SIP/H.323 protocol by using the SIP server or gatekeeper. Or, adjusts information on other protocols and QoS. |
|  | Enables or disables the FTP, HTTP, TELNET, TFTP, SNMP, and Ez setup services of AP-VP150. Changes the TCP/UDP port number of a service. |
|  | Shows the current network settings of AP-VP150. |

Network Setup – Internet Setup

This menu enables the features of the WAN interface in AP-VP150. Since network environments are various, you should set this menu depending on your network environment. The WAN protocols supported by AP-VP150 are DHCP, static IP, and PPPoE. You can enter the address of IPv6.



(Figure 3-123) Internet Setup Screen

[Table 3-21] Internet Setup

| Category | Description |
|---------------------|---|
| DHCP (Flexible IP) | This is a WAN protocol that allows you to receive a flexible IP address from the DHCP server. Examples of DHCP include cable modems, VDSL, and IP-ADSL. |
| Static (Static IP) | Sets an IP address manually to configure the WAN interface. Examples include ADSL (My IP) and E1/T1 dedicated lines. |
| PPPoE (Flexible IP) | This is a WAN protocol that allows you to receive a flexible IP address from the PPP server. An example is ADSL. |

| | |
|------|---|
| IPv6 | Enters the address of IPv6. Selects Static, EUI-64, and Auto Configuration depending on your network environment. |
|------|---|

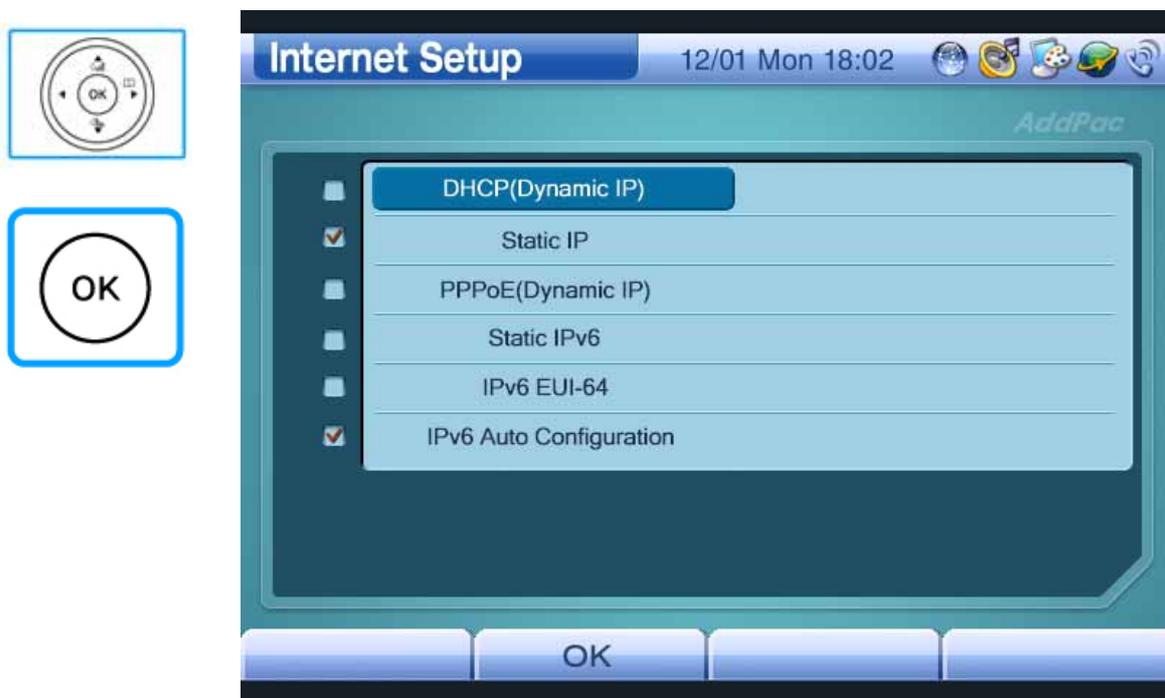
Figures 3-124 to 3-126 show a method of configuring DHCP in the cable modem environment:



(Figure 3-124) Selecting Menu >> Network Setup



(Figure 3-125) Selecting Network Setup >> Internet



(Figure 3-126) Pressing the "OK" Button After Selecting DHCP

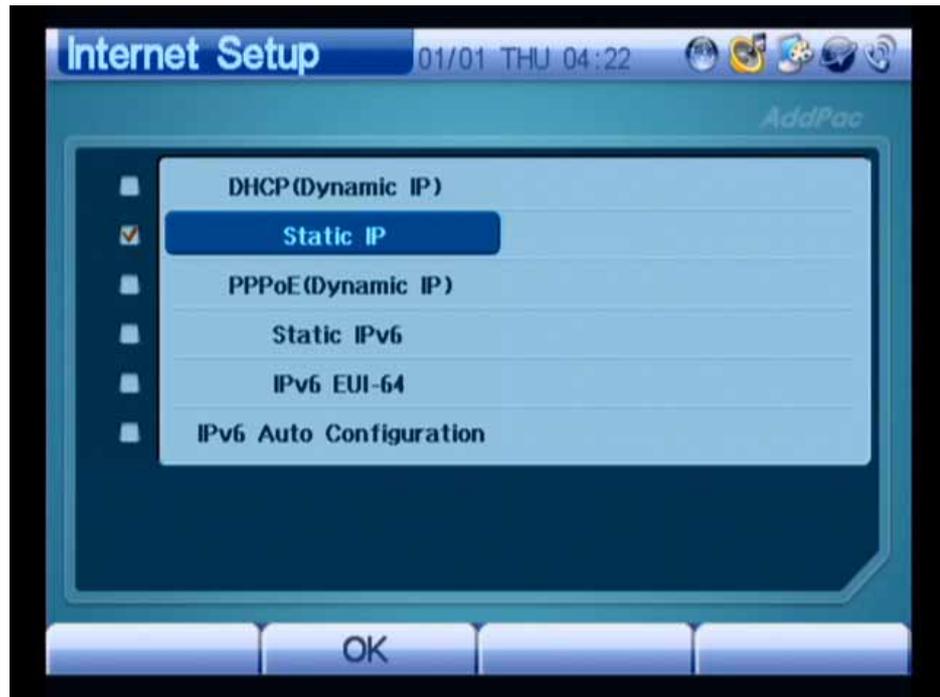
Figures 3-127 to 3-135 show a method of setting a static IP that uses a static IP address:



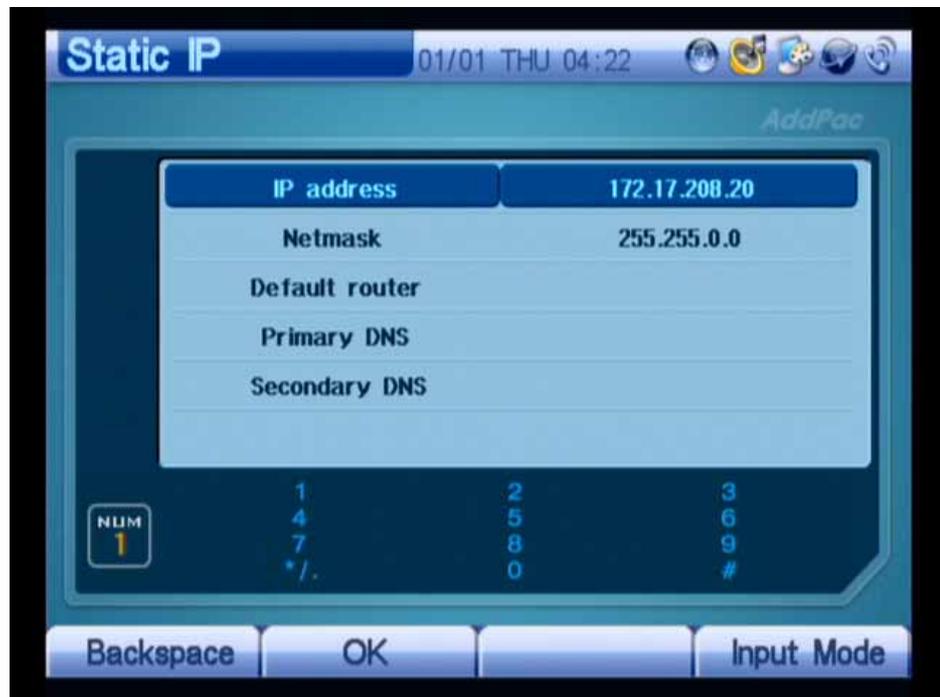
(Figure 3-127) Selecting Menu >> Network Setup



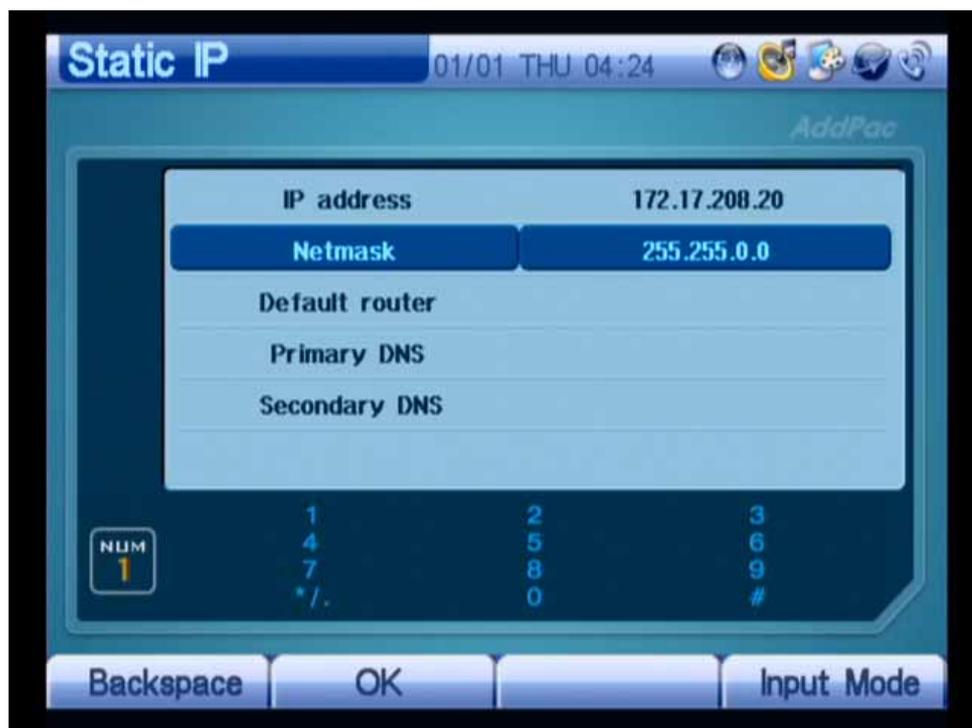
(Figure 3-128) Selecting Network Setup >> Internet



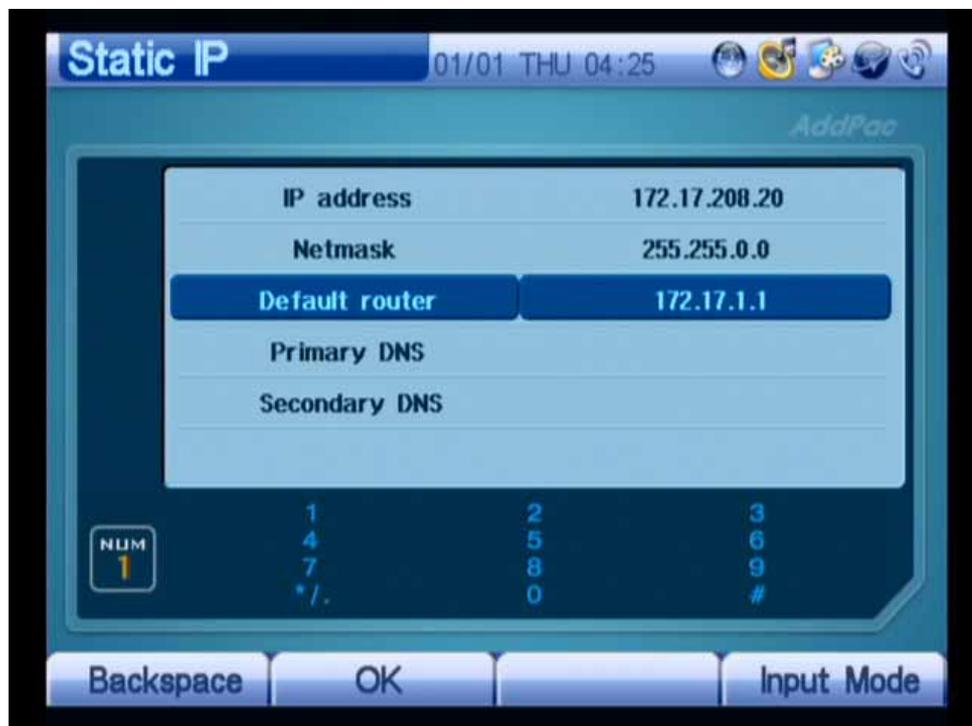
(Figure 3-129) Selecting Static IP



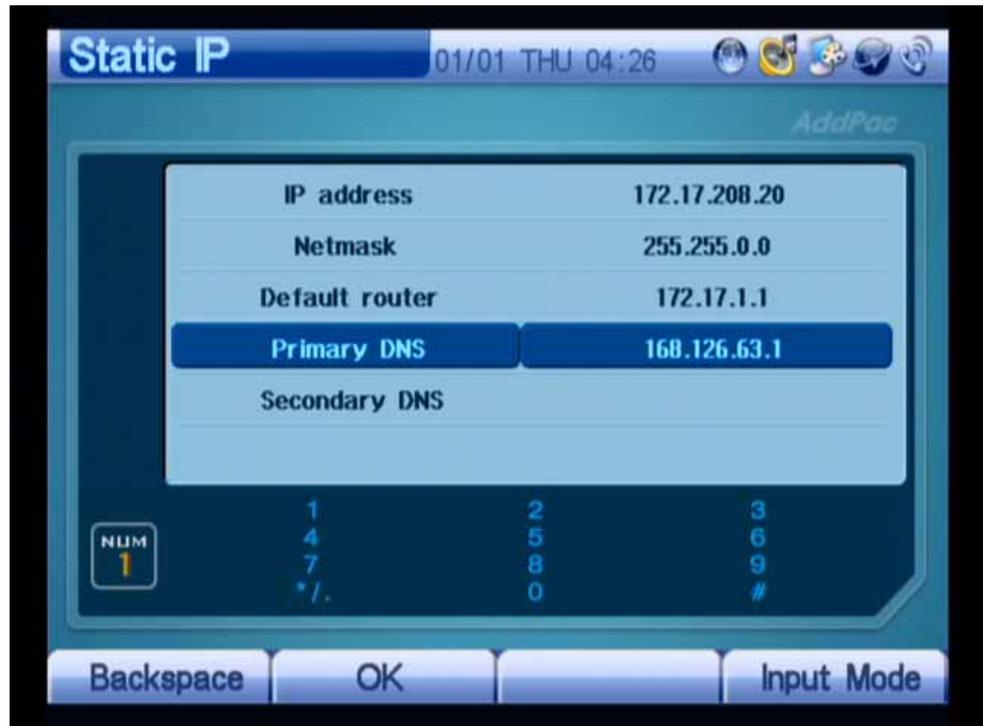
(Figure 3-130) Entering IP Address, "172.20.103.1"



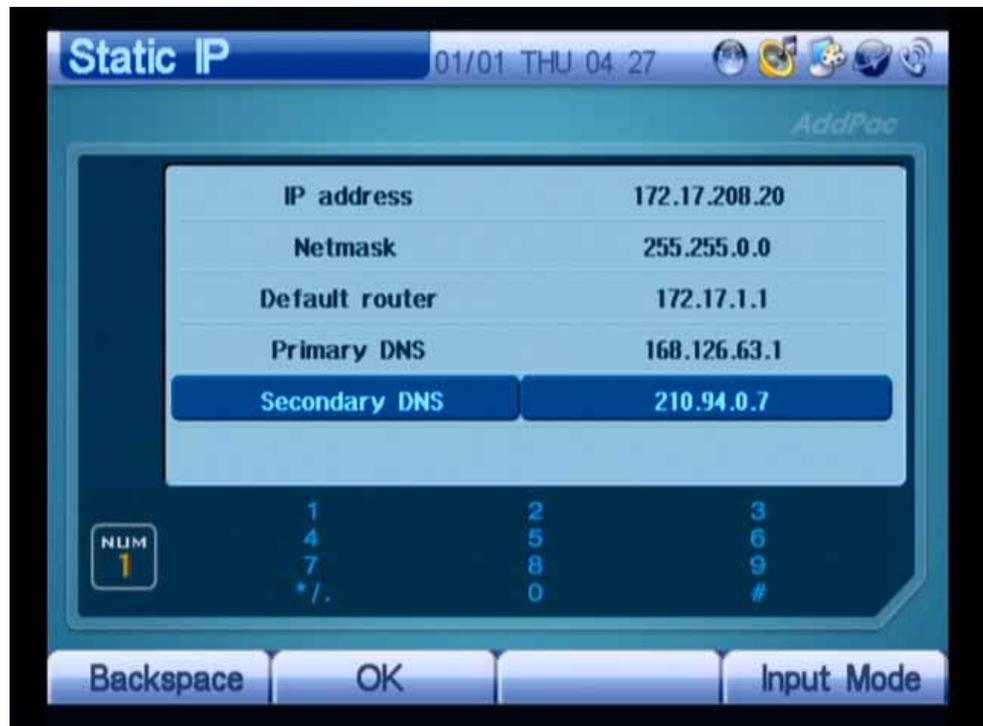
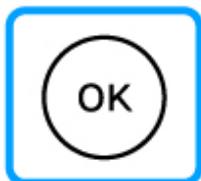
(Figure 3-131) Entering Net Mask, “255.255.0.0”



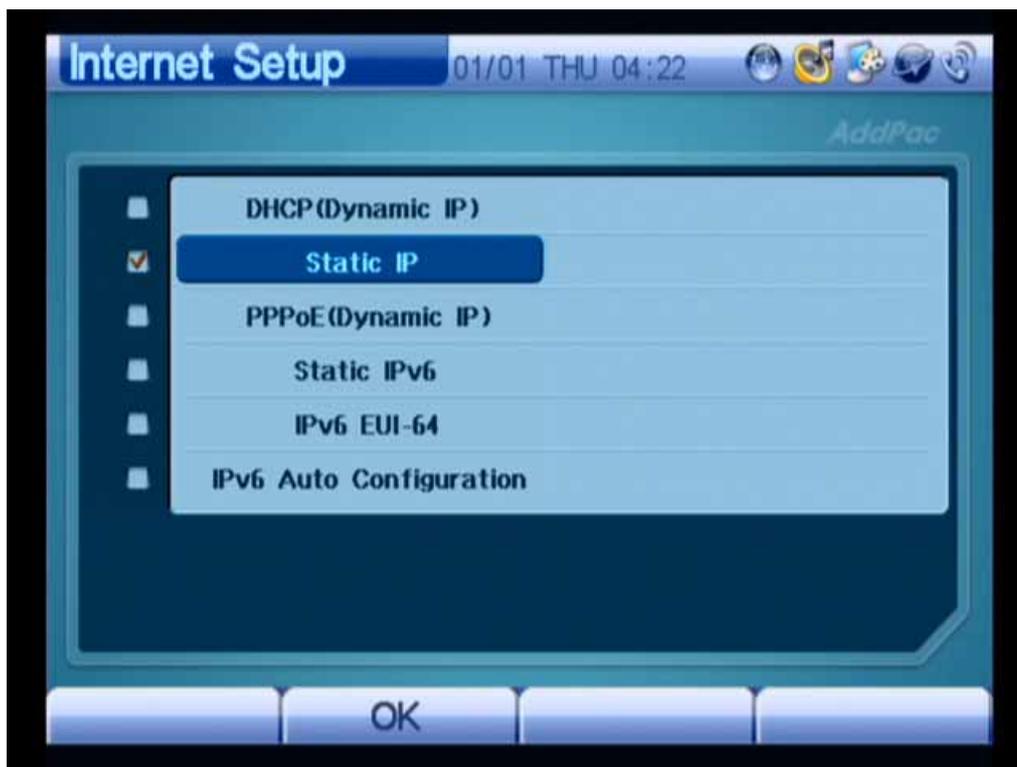
(Figure 3-132) Entering Default Gateway, “172.20.1.1”



(Figure 3-133) Entering Primary DNS, “168.126.63.1”



(Figure 3-134) Entering Secondary DNS, “210.94.0.7”



(Figure 3-135) Moving to the Upper Menu by Pressing the “OK” Button

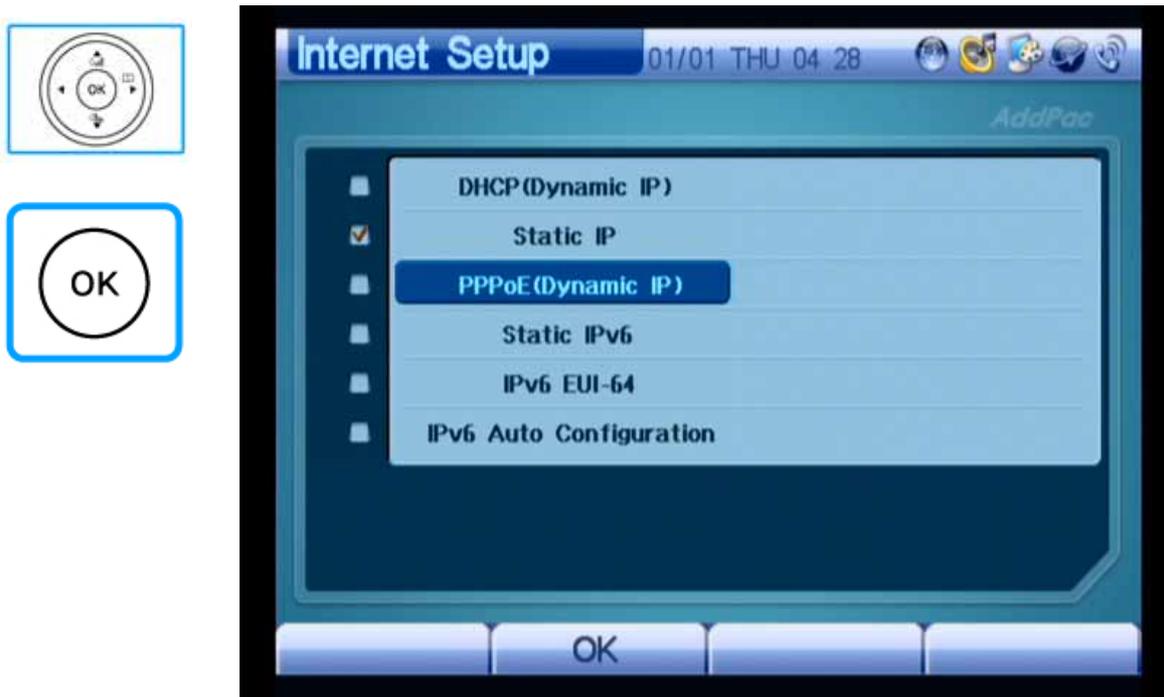
Figures 3-136 to 3-142 show a method of setting PPPoE used ADSL:



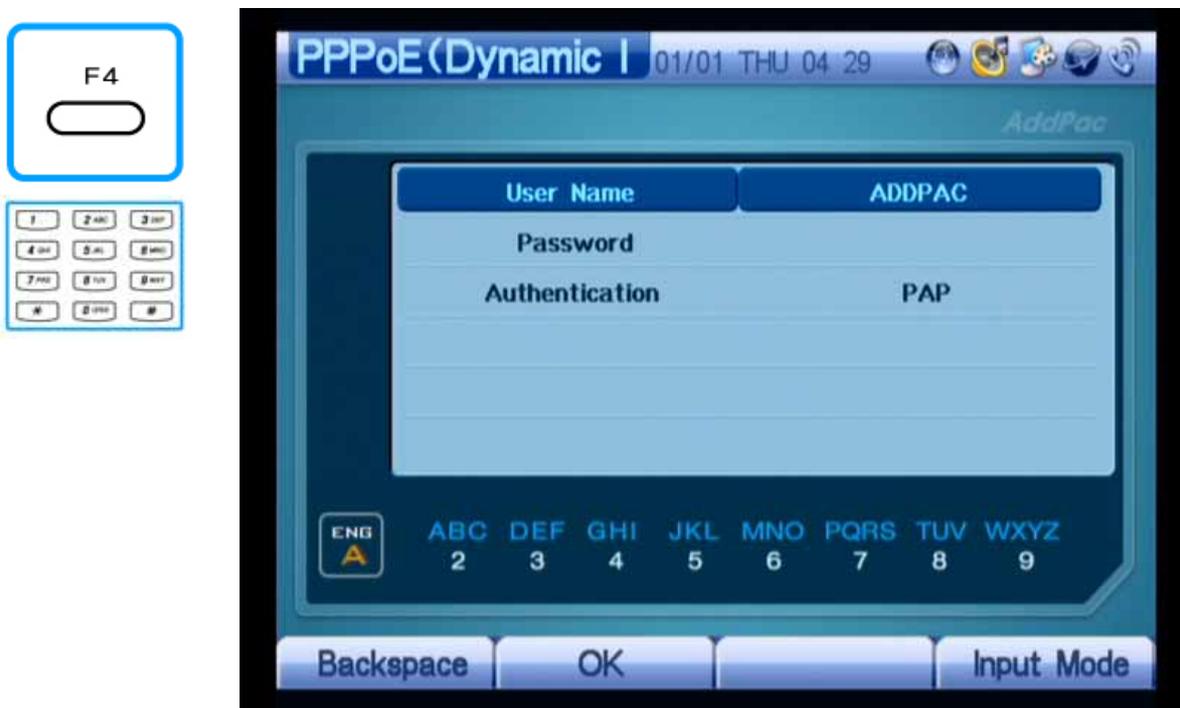
(Figure 3-136) Selecting Menu >> Network Setup



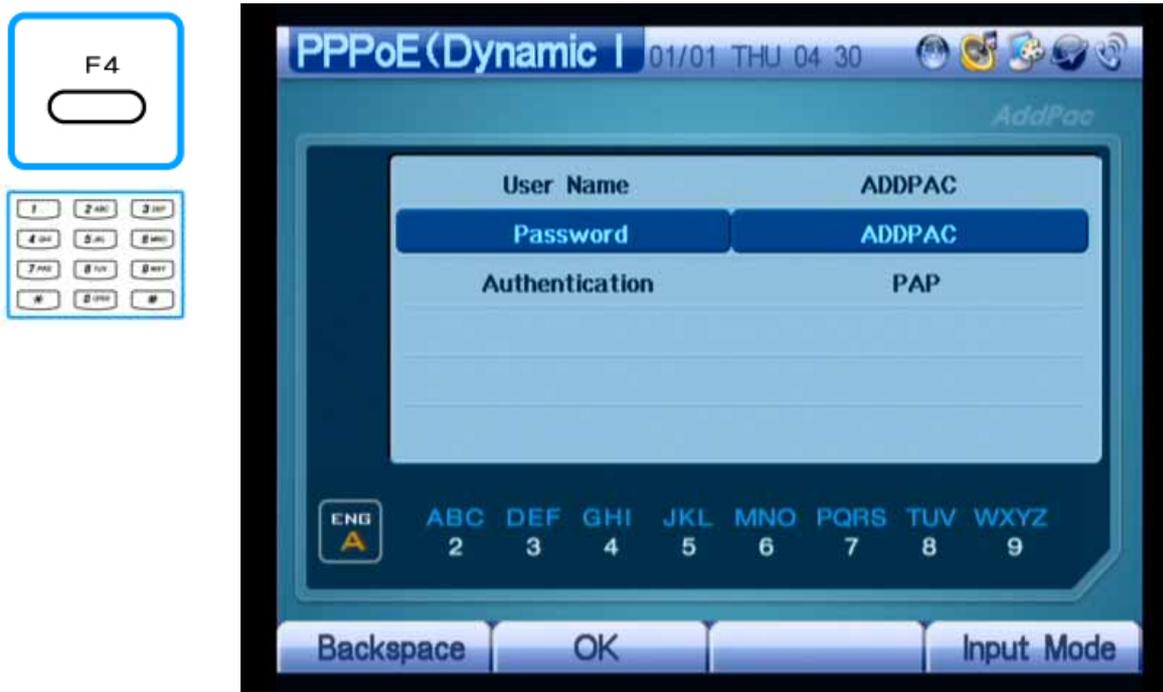
(Figure 3-137) Selecting Network Setup >> Internet



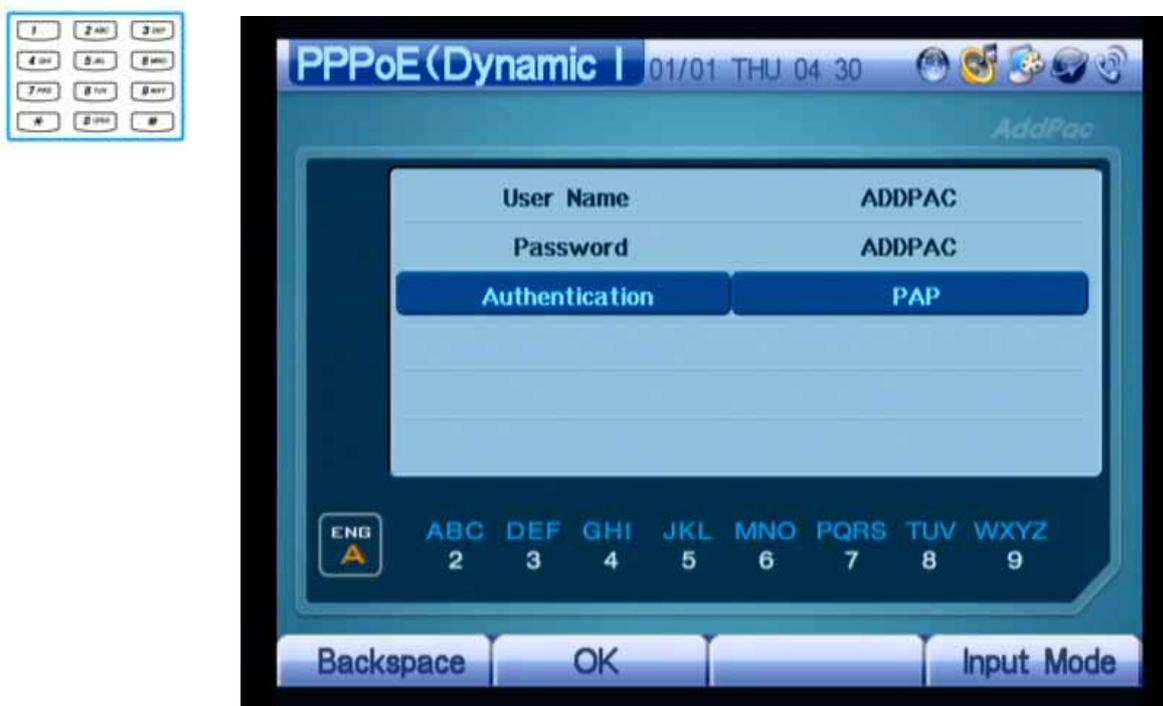
(Figure 3-138) Selecting PPPoE



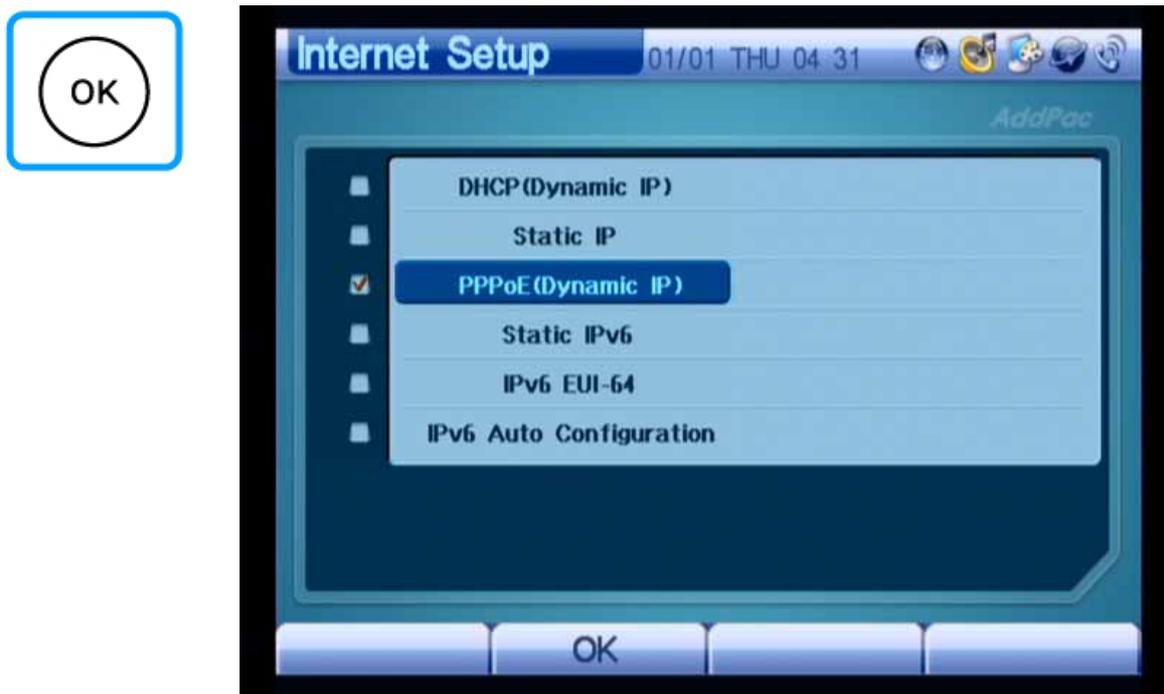
(Figure 3-139) Entering "ADDPAC" in User Name



(Figure 3-140) Entering “ADDPAC” in Password



(Figure 3-141) Entering “PAP” in Authentication by Using the Number Keys on the Keypad



(Figure 3-142) Moving to the Upper Menu by Pressing the “OK” Button

Network Setup – LAN Setup

This menu allows you to determine how the LAN1 interface of AP-VP150 will be used. Select one of the checkboxes, which are None, DHCP for 1 PC, and DHCP for Several PCs, to connect the PC or Ethernet hub to LAN1. DHCP for 1 PC performs IP sharing. AP-VP150 and the PC connected to LAN1 share the same IP address. Select DHCP for Several PCs to use more than one PC. If you select this option, the feature similar to the one performed by commercial IP sharing equipments will be enabled.



(Figure 3-143) LAN Setup Screen

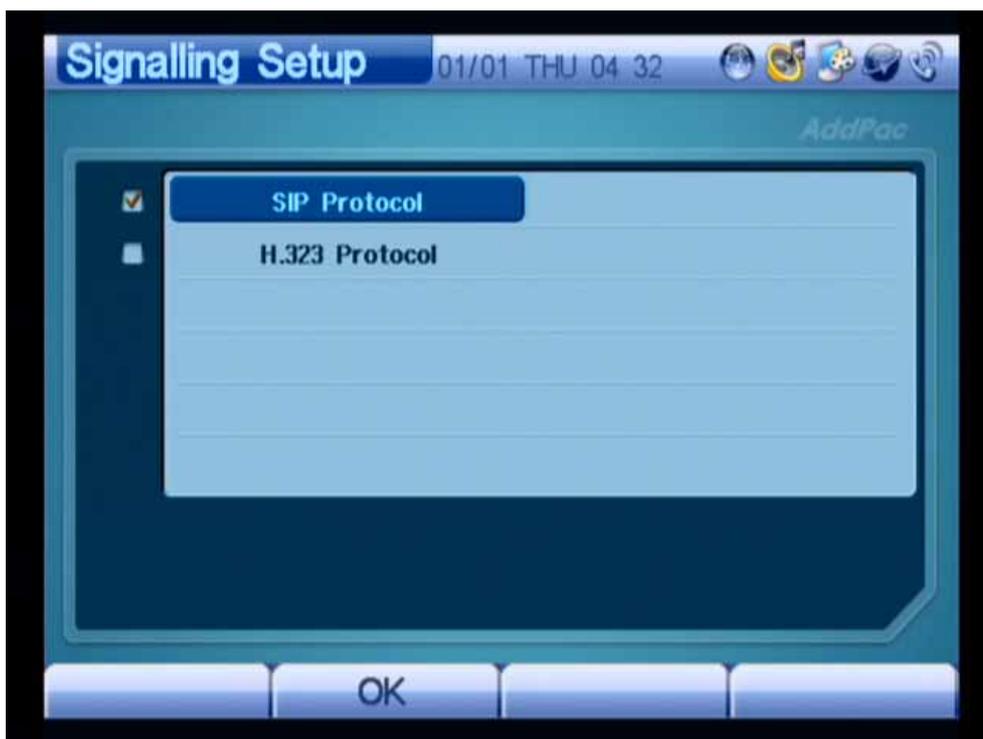
Network Setup – VoIP Setup

This menu allows you to perform settings required to inter-work with the SIP server or gatekeeper under SIP and H.323 or to adjust E.164 and QoS.

- Signaling Setup



(Figure 3-144_1) VoIP Setup Screen



(Figure 3-145_2) Signalling Setup Screen

The figure below shows the screen displayed when you select SIP Protocol:

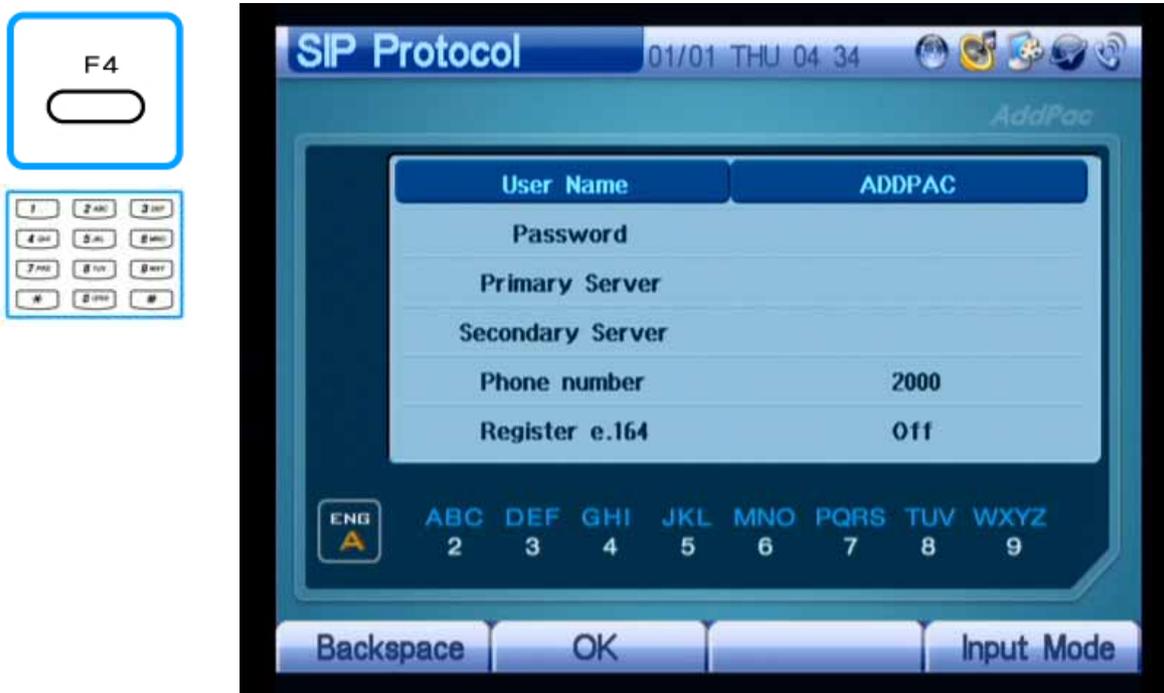


(Figure 3-146) SIP Protocol Screen

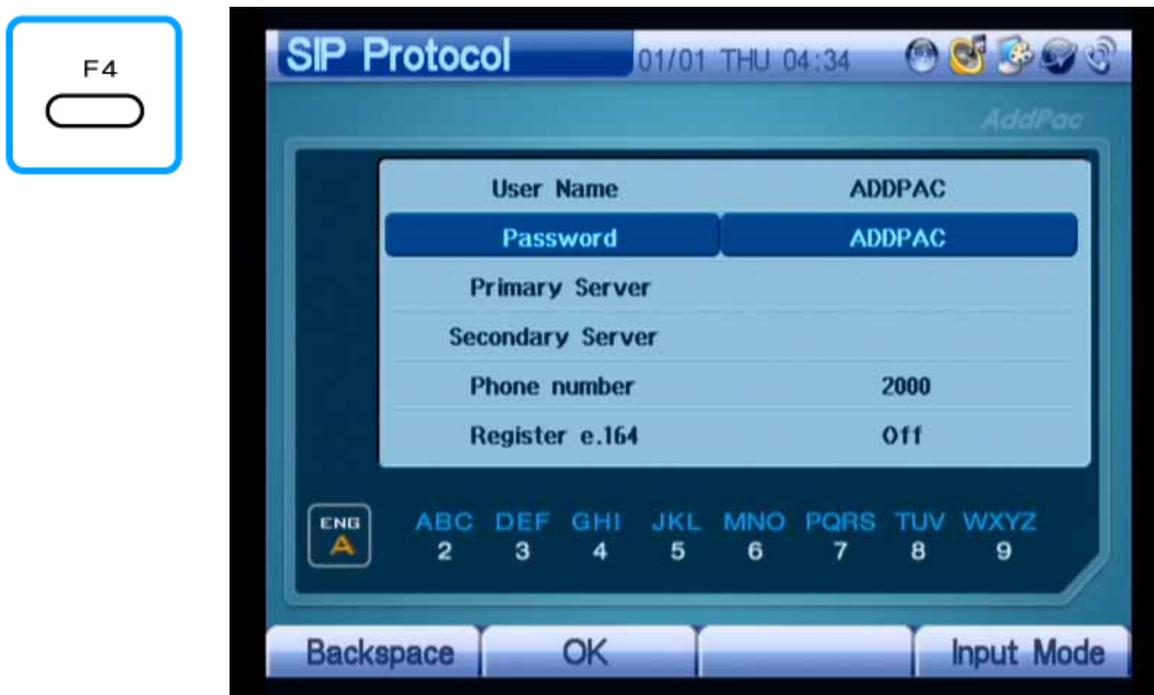
[Table 3-22] SIP Protocol

| Category | Description |
|-------------------------|---|
| User Name | Enters a user name required to sign up with the SIP server. |
| Password | Enters a password required to sign up with the SIP server. |
| Primary Server | Enters the IP address or domain of the main server from the SIP servers. |
| Secondary Server | Enters the IP address or domain of the secondary server from the SIP servers. |
| Phone number | Enters your E.164 number. |
| Register e.164 | Selects On or Off to determine whether to register with the SIP server. You can press a button (0 to 9) from the keypad to enable on or off. |

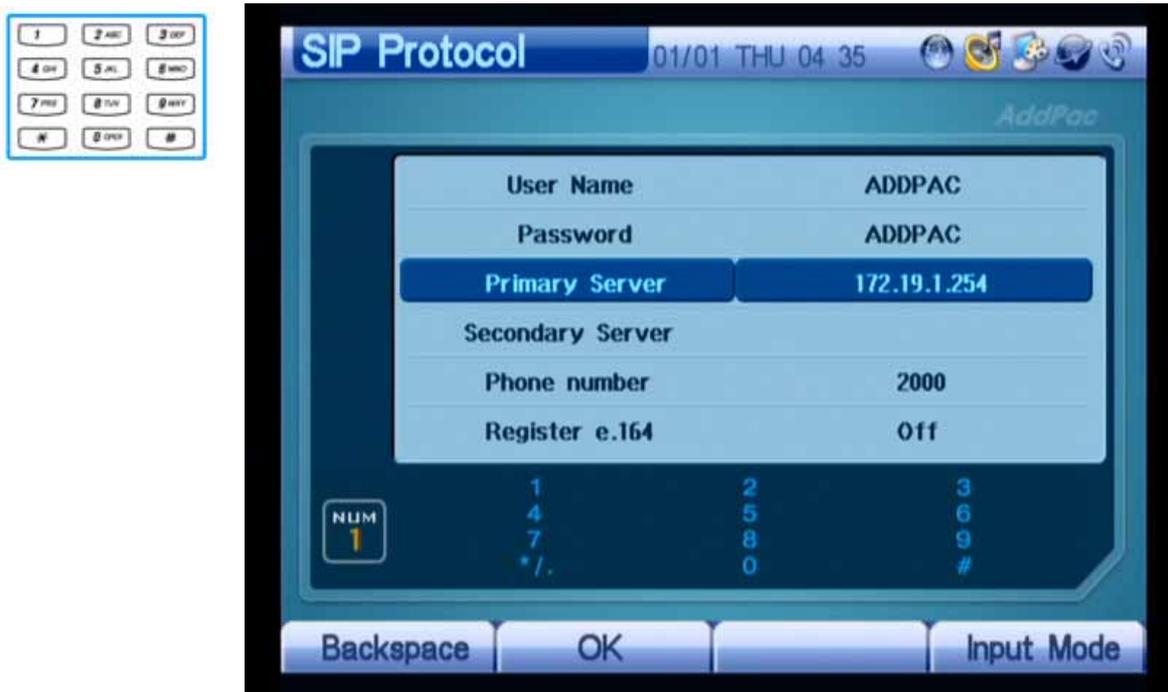
Figures 3-147 to 3-150 show an example of entering the values required to inter-work with the SIP server:



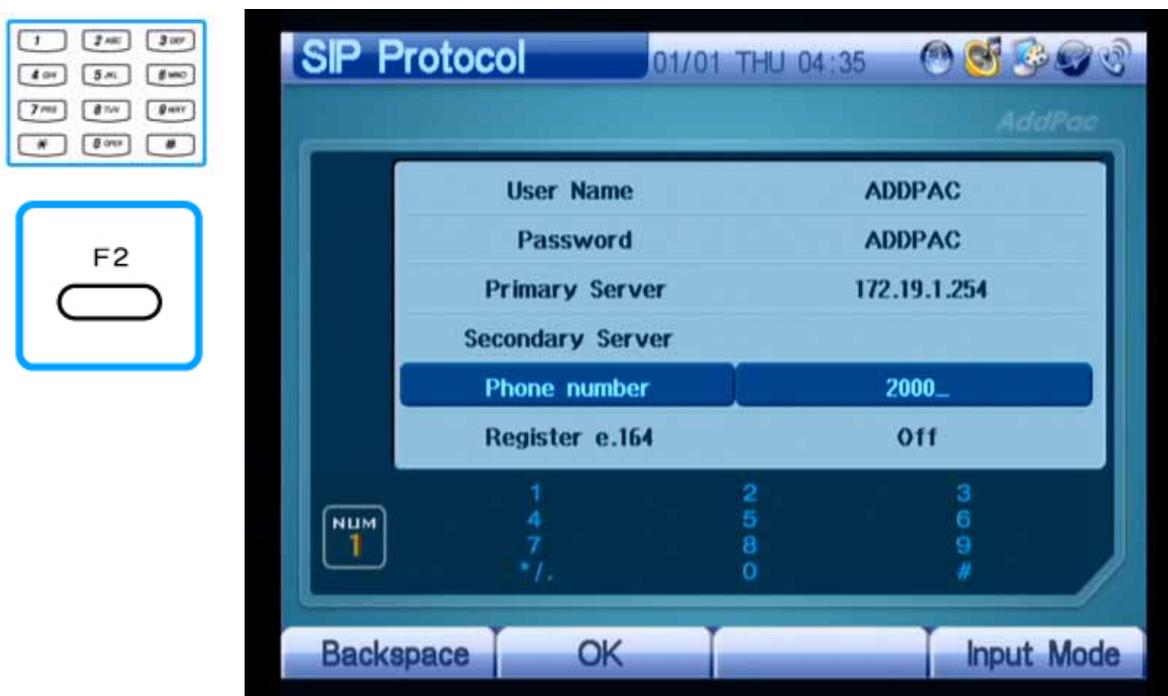
(Figure 3-147) Entering User Name



(Figure 3-148) Entering Password

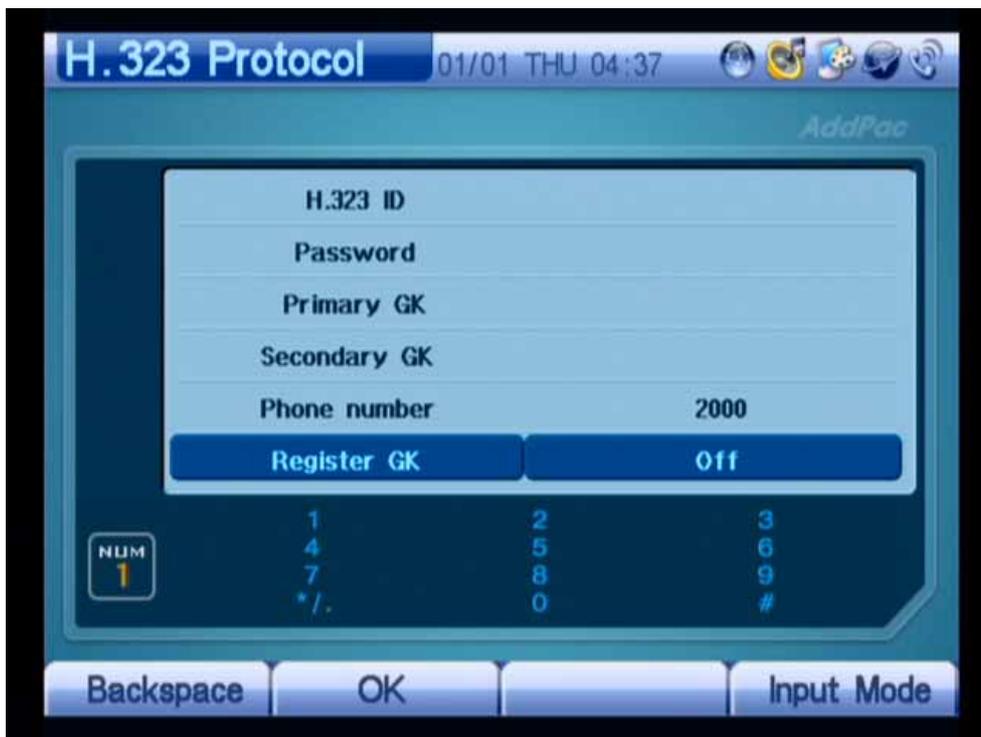


(Figure 3-149) Entering IP Address of Primary Server



(Figure 3-150) Entering Phone Number, Enabling On From Register e.164, and Entering OK

The figure below shows a screen displayed when you select the H.323 protocol:

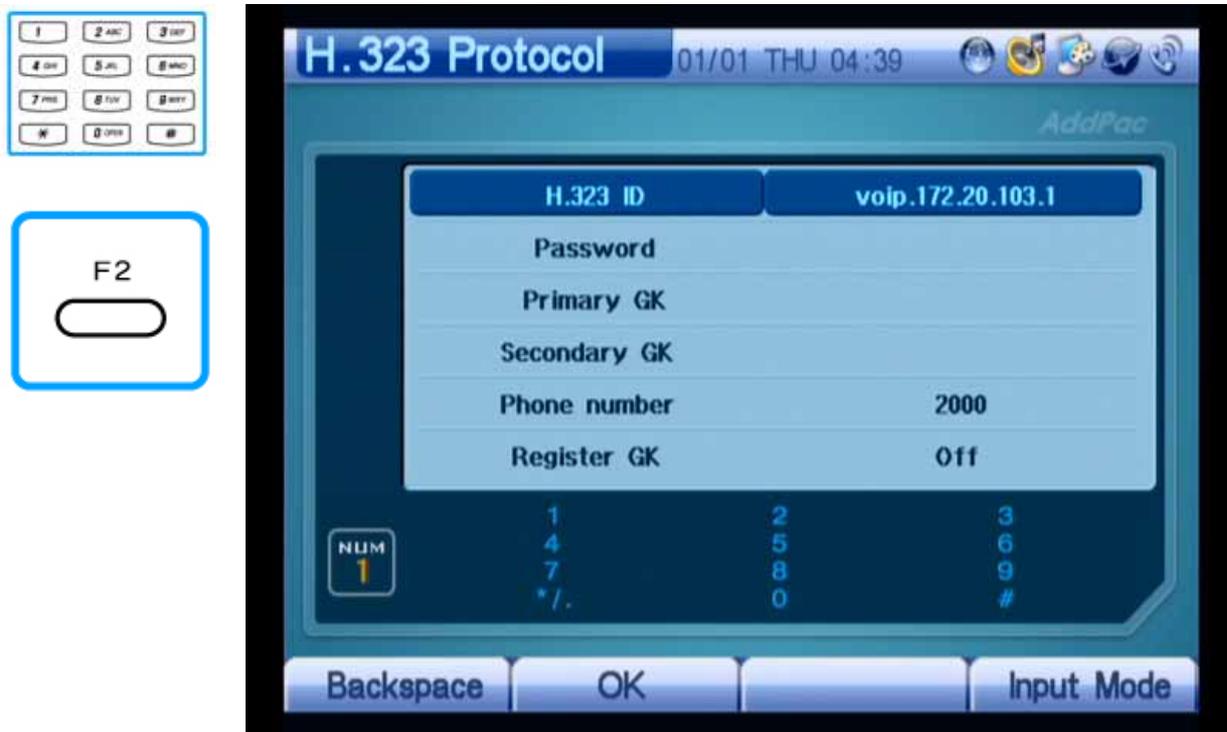


(Figure 3-151) H.323 Protocol Screen

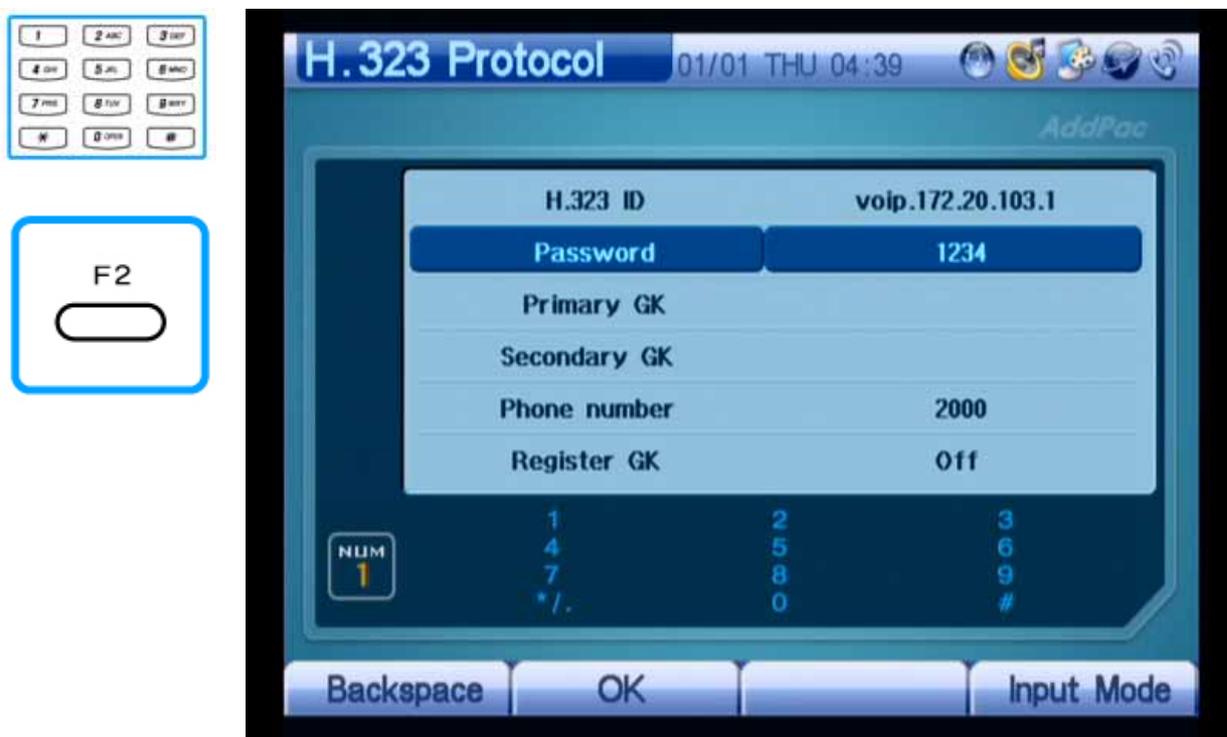
[Table 3-23] H.323 Protocol

| Category | Description |
|---------------------|--|
| H.323 ID | Enters the H.323 ID to be used for registering with the gatekeeper. |
| Password | Enters the password to register with the gatekeeper if authentication is required. |
| Primary GK | Enters the IP address of the main gatekeeper to be used first. |
| Secondary GK | Enters the IP address of the secondary gatekeeper to be used secondarily. |
| Phone Number | Enters your E.164 number. |
| Register GK | Selects On or Off to determine whether to register with the gatekeeper. You can press a button (0 to 9) from the keypad to enable on or off. |

Figures 3-152 to 3-157 show an example of entering the values required to inter-work with the gatekeeper:



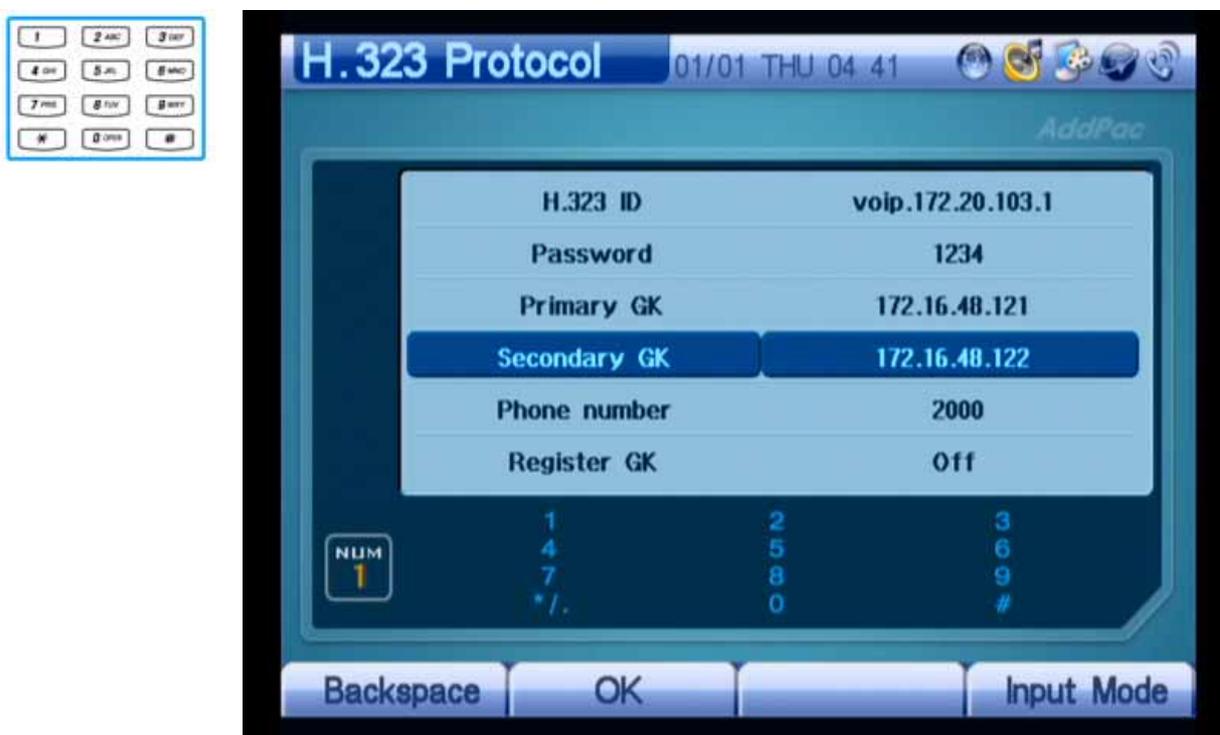
(Figure 3-152) Entering H.323 ID



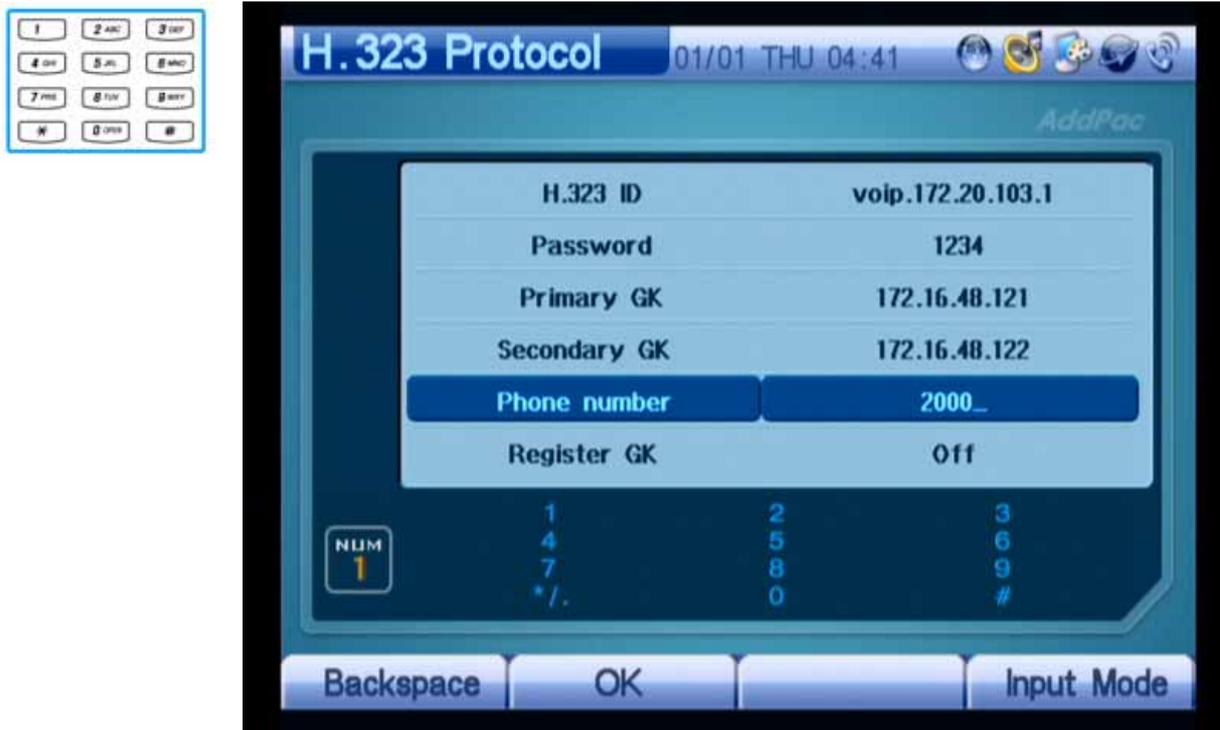
(Figure 3-153) Entering Password to Register With Gatekeeper



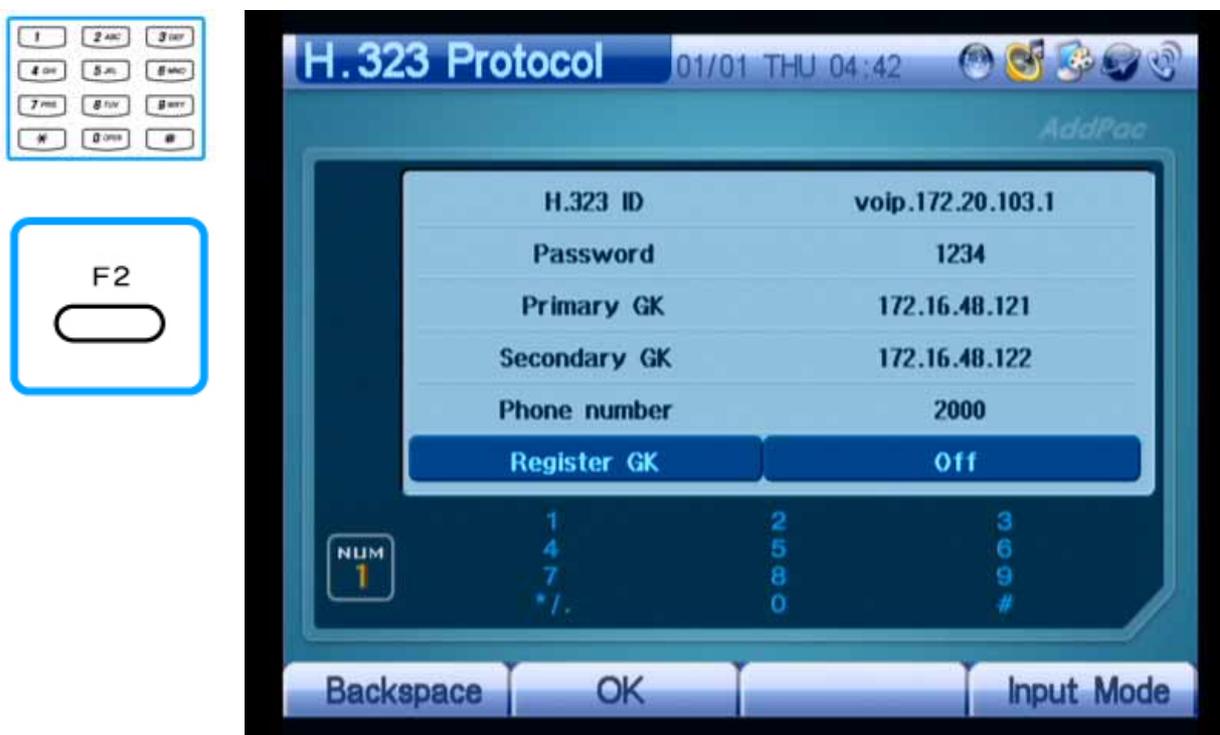
(Figure 3-154) Entering IP Address of Primary Gatekeeper



(Figure 3-155) Entering IP Address of Secondary Gatekeeper



(Figure 3-156) Entering Phone Number of E.164

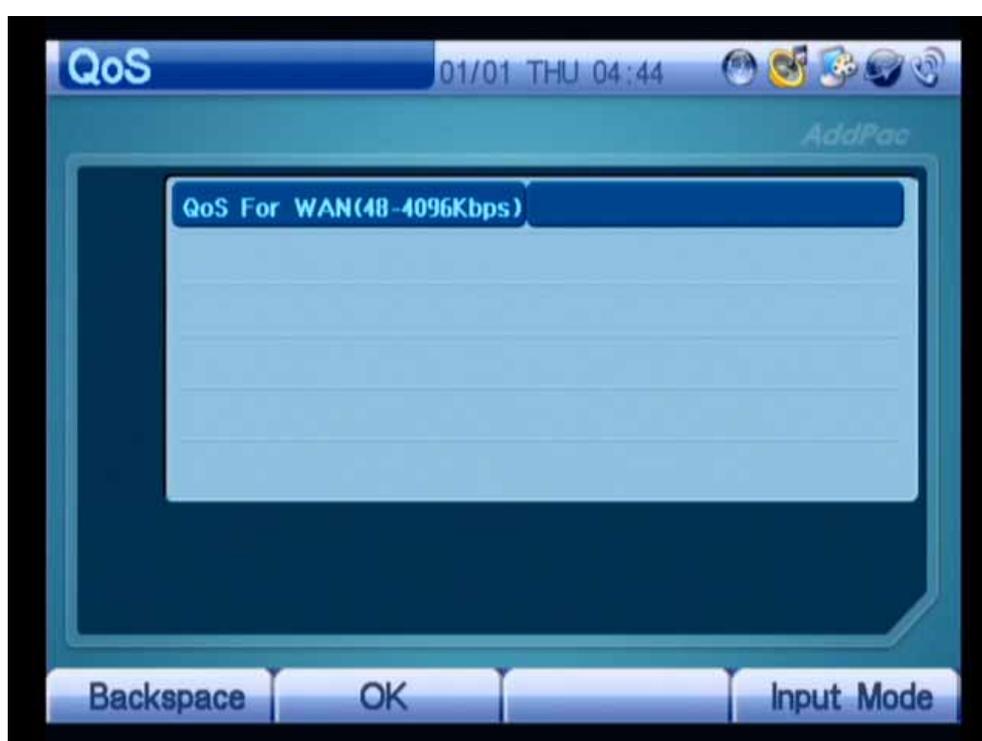


(Figure 3-157) Entering "On" in Register GK and Pressing the "F2" Key to Complete Input

- Quality of Service (QoS)

AP-VP150 allows you to transmit the compressed video of either MPEG-4 or H.263 as well as VoIP voice packets. High-definition video streams such as MPEG-4 are affected much by network status. If the network quality is low, a failure might occur in video transmission.

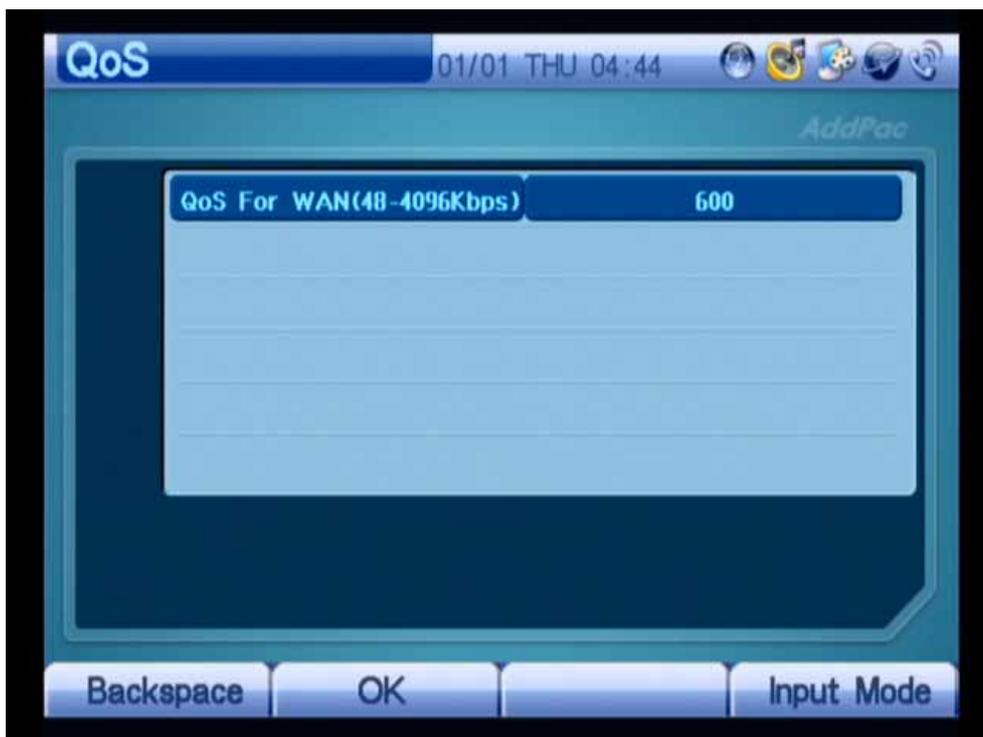
QoS disables acoustic and video packets to be forwarded at a bandwidth that can be ensured on a network. You should calculate the bandwidth that voice packets occupy from the bandwidth setting in the video codec to apply QoS.



(Figure 3-158) Main Screen of QoS

This QoS feature is enabled for the WAN interface; however, is not enabled for the LAN interface. The value range is 48 Kbps to 4 Mbps. Enter a value calculated by adding the bandwidth setting in the video codec to the bandwidth for voice packets using the keypad or remote control.

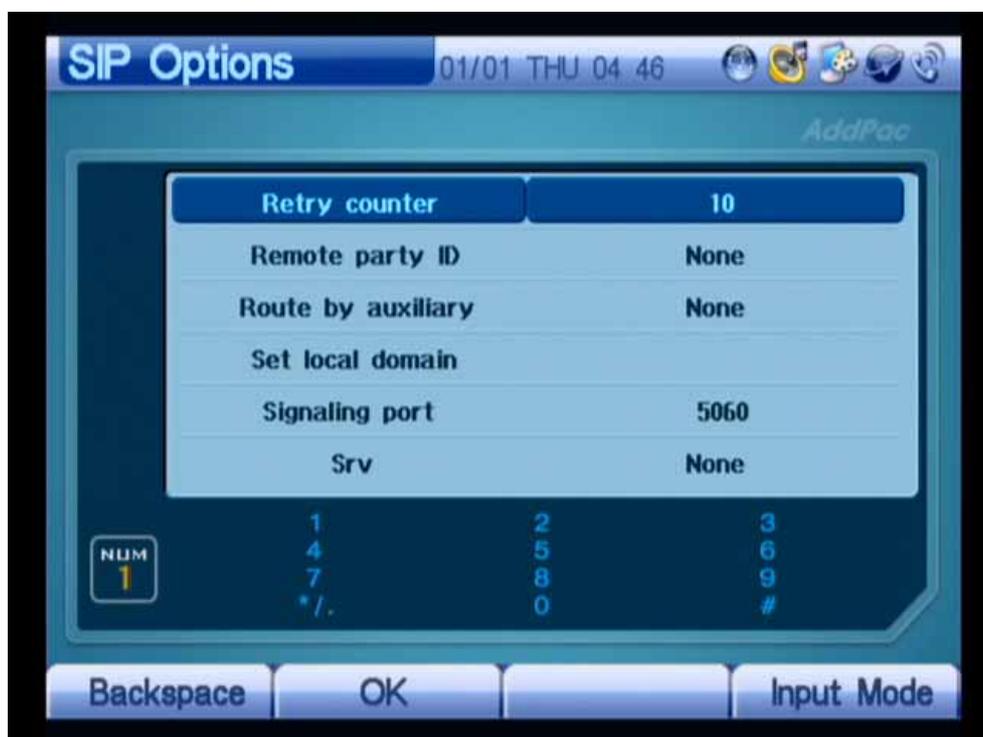
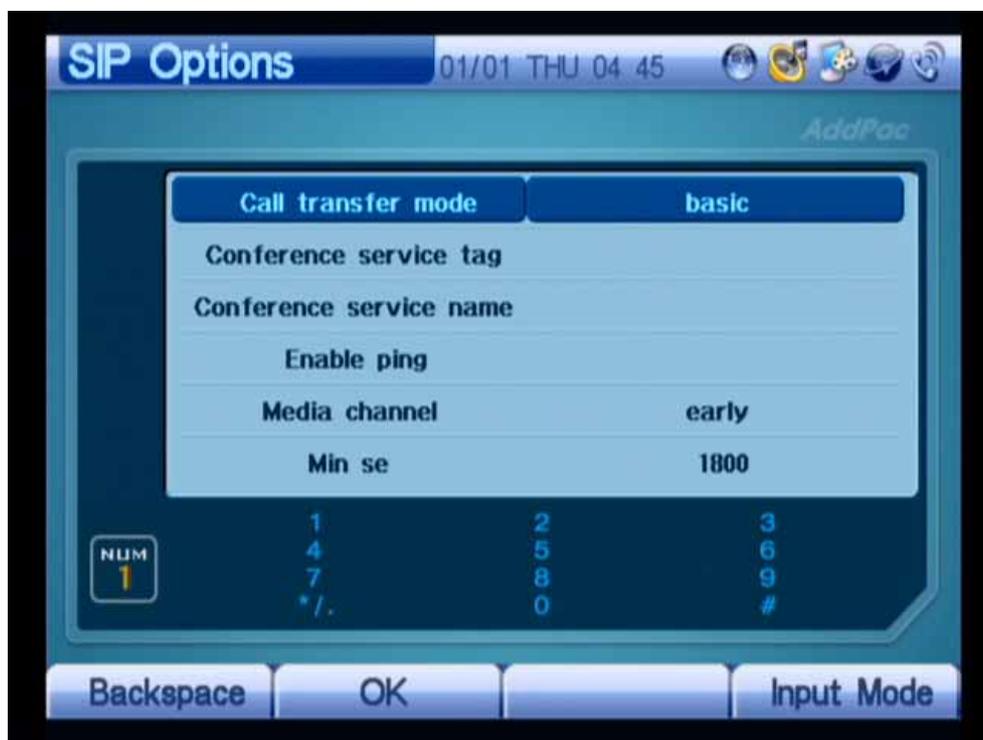
For instance, set the video codec to MPEG4/QVGA/512Kbps. Since G.711 requires 600 Kbps, enter "600".



(Figure 3-159) QoS Setting in MPEG4/QVGA/512 Kbps + G.711

- SIP Options

This menu allows you to use supplementary features and options used for the SIP protocol and H.323 protocol. The features continue to be upgraded through future APOS upgrade.



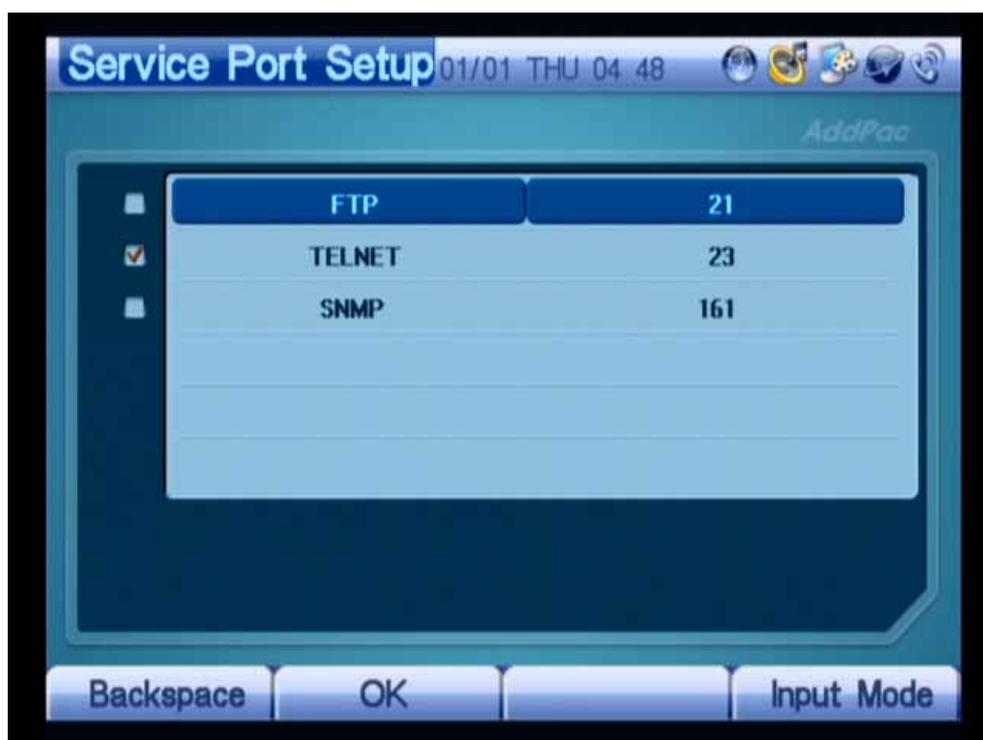
(Figure 3-160) SIP Options Screen

[Table 3-24] SIP Options

| Category | Description |
|--------------------|---|
| Call Transfer Mode | Sets the call transfer mode to basic or attend. |
| Conference Tag | Service Enters VoIP tag when using the conference service. |
| Conference Name | Service Specifies the name of conference service. |
| Enable Ping | Enters the firewall address to allow you to check the actual public IP when this product is used in the NAT/firewall environment. |
| Media Channel | Sends the RTP session information to hear an in-band ring back tone from the public network in the NAT/firewall environment. |
| Min Se | Specifies a session timer value. |
| Retry Counter | The number of SIP UA retries refers to the number of times that SIP INVITE will be transmitted when you make a call using AP-VP150. If an attempt message to SIP INVITE is not received within a specific time because the network quality is poor or a failure occurs in the network, AP-VP150 will forward an INVITE message. The default is 10, and the general setting is "3." |
| Remote Party ID | Enable this option for the register message if the user name consists of characters not numbers. |
| Route By Auxiliary | Enable this option if an incoming number consists of characters not numbers. |
| Set Local Domain | Sends the From/To field in an SIP message to the specified domain not the IP address. |
| Signaling Port | The default is 5060. Enable this option to change the value. |
| User-Register | Enable this option to register a user name consisting of characters not numbers with the SIP server. |

Network Setup – Service Port Setup

This menu allows you to enable or disable the FTP, TELNET, or SNMP service in AP-VP150 and to change the TCP port number of a service.



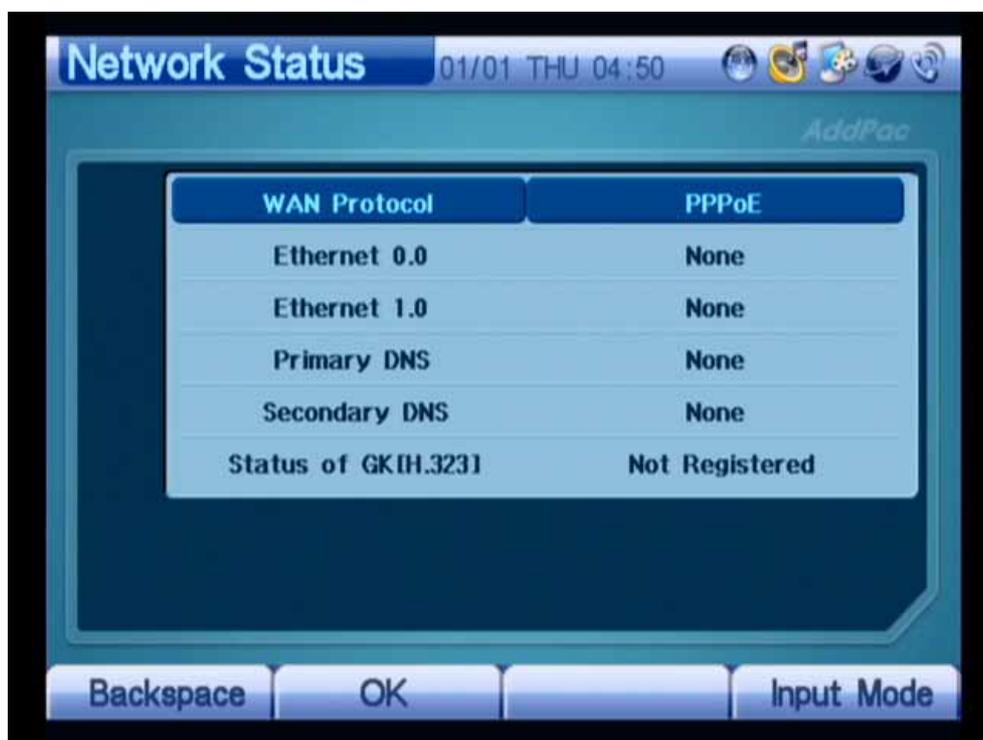
(Figure 3-161) Service Port Setup Screen

You can control by accessing AP-VP150 from a remote device through FTP (21), TELNET (23) and SNMP (161).

AP-VP150 can function as SNMP Agent. You can enable SNMP by accessing AP-VP150 from a remote device through SNMP (Default: 161).

Network Setup – Network Status

This menu allows you to view network status including the protocol, Ethernet port IP, DNS, GK[H.323], and registration with the SIP proxy server.



(Figure 3-162) Network Status Screen

Application Menu

This menu is configured with VoD Browser, IPTV, and Network Camera. The menu will be supported through software upgrade.



(Figure 3-163) Application Setup Screen

[Table 3-25] Network Setup Menu

| Category | Description |
|--|---|
|  | <p>IPTV is an application used for the IPTV solution of AddPac Technology. You can watch high-definition TV in real-time through a large-scale server.</p> |
|  | <p>VoD Browser is used for the VoD solution of AddPac Technology. This feature allows you to view a variety of contents at any time.</p> |
|  | <p>Network Camera allows you to view video of the camera installed remotely through the screen of AP-VP150 in real-time. This menu is used for remote monitoring.</p> |

Remote Setup Menu

This menu allows you to remotely adjust the screen size, frame rate, and bandwidth of AP-VP150 or AP-VG1000 that the other party is using while calling; thus, this feature is enabled only for the video devices of AddPac Technology.



(Figure 3-164) Remote Setup Screen

[Table 3-26] Remote Setup Menu

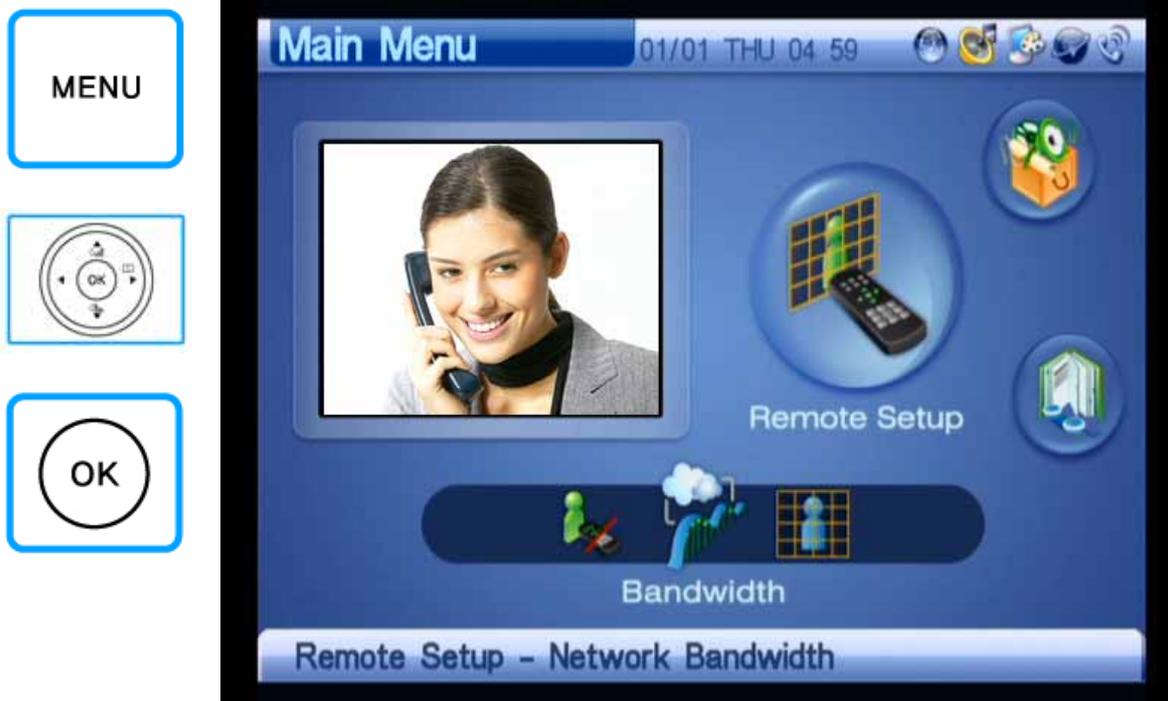
| Category | Description |
|--|--|
|  | <p>This menu allows you to set a bandwidth. The setting range is 128 Kbps to 4,160 Kbps.</p> |
|  | <p>This menu allows you to set a resolution and a frame rate used for AP-VP150.</p> |
|  | <p>This menu disables a change in the bandwidth or screen size of AP-VP150 in use.</p> |

Remote Setup – Bandwidth Remote



(Figure 3-165) Bandwidth Remote Screen

Figures 3-166 to 3-154 show an example of setting the video bandwidth:



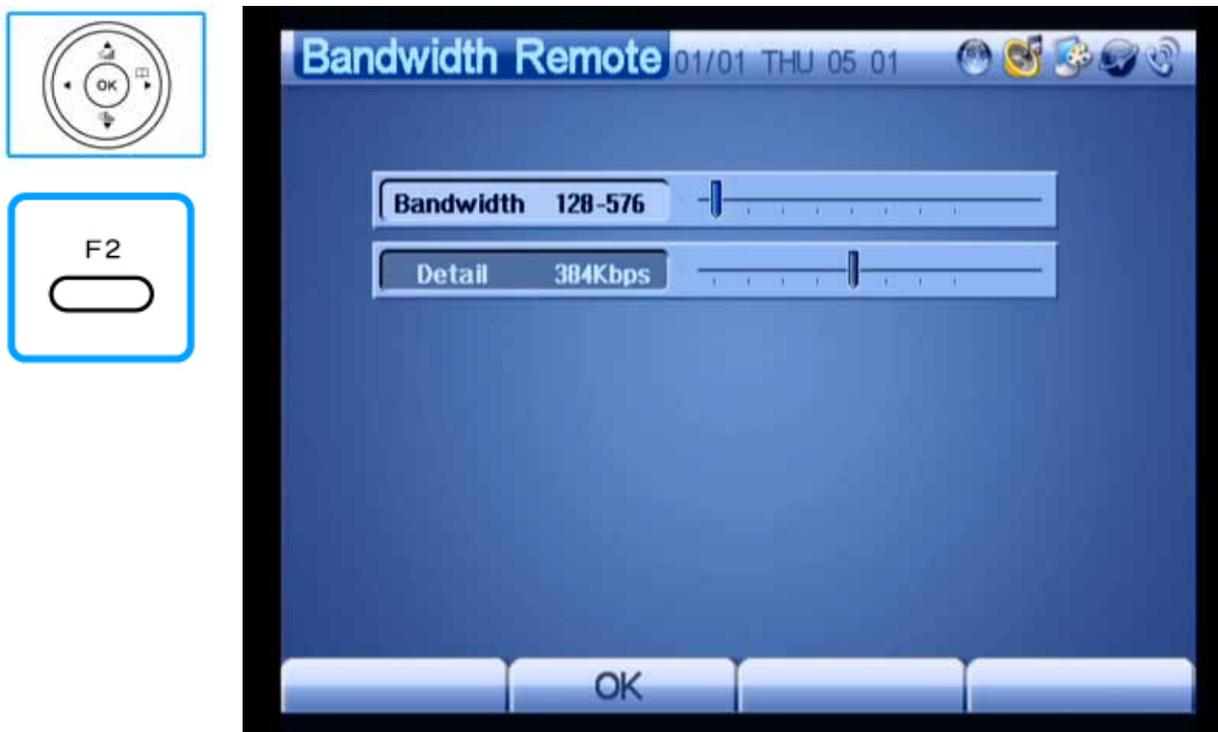
(Figure 3-166) Selecting Menu >> Remote Setup



(Figure 3-167) Selecting Remote Setup >> Bandwidth



(Figure 3-168) Selecting Bandwidth Remote



(Figure 3-169) Setting Bandwidth to 4,096 Kbps, Saving Using the F2 Key

Remote Setup – VCodec Remote

This menu allows you to set a resolution and a frame rate used for AP-VP150. Examples of MPEG-4 resolution include QVGA, HalfVGA, and VGA. Under H.263, QCIF(QVGA) and CIF(HVGA, VGA) are used. You can select a resolution and a frame rate from OSD.



(Figure 3-170) VCodec Remote Screen

Figures 3-156 to 3-159 show an example of selecting a video codec:



(Figure 3-171) Selecting Menu >> Remote Setup



(Figure 3-172) Selecting Remote Setup >> Video Codec



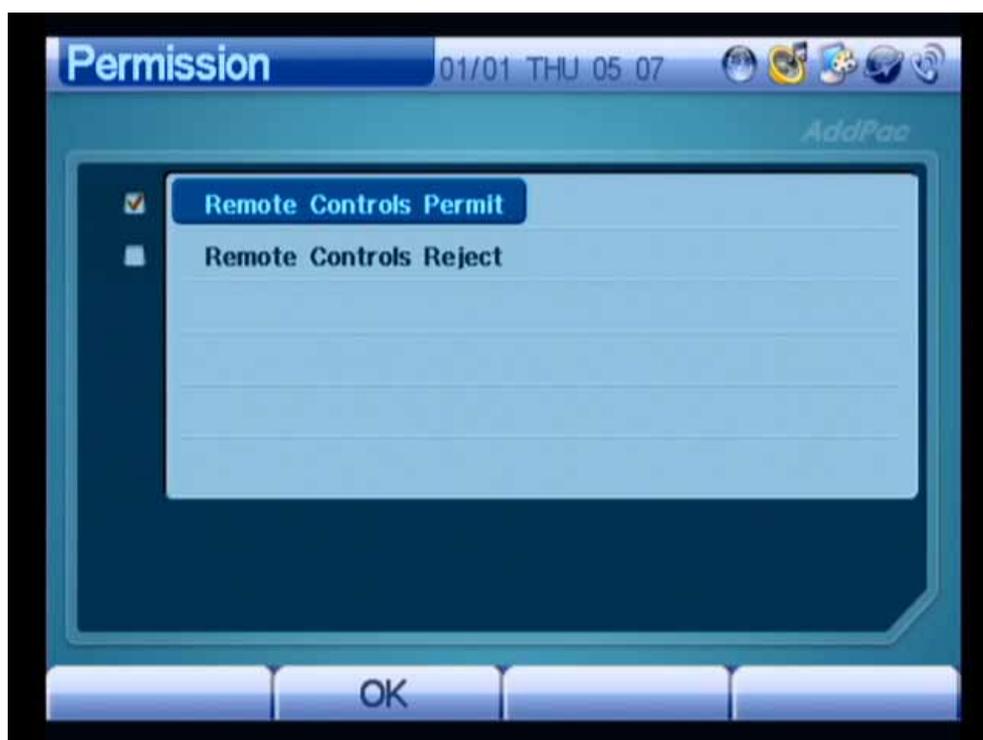
(Figure 3-173) Setting Image Size to QVGA



(Figure 3-174) Setting Frame Rate to 30 fps

Remote Setup – Permission

This menu disallows you to adjust the size, frame rate, and bandwidth of the video transmitted from AP-VP150 or AP-VG1000 that the other party is using. The default is Remote Controls Permit.



(Figure 3-175) Permission Screen

Chapter 4. How to Use AP-VP150

Using Video Phone With the Call/End Button

The keypad of AP-VP150 or the Call button of the remote control is used as described in Table 4-1:

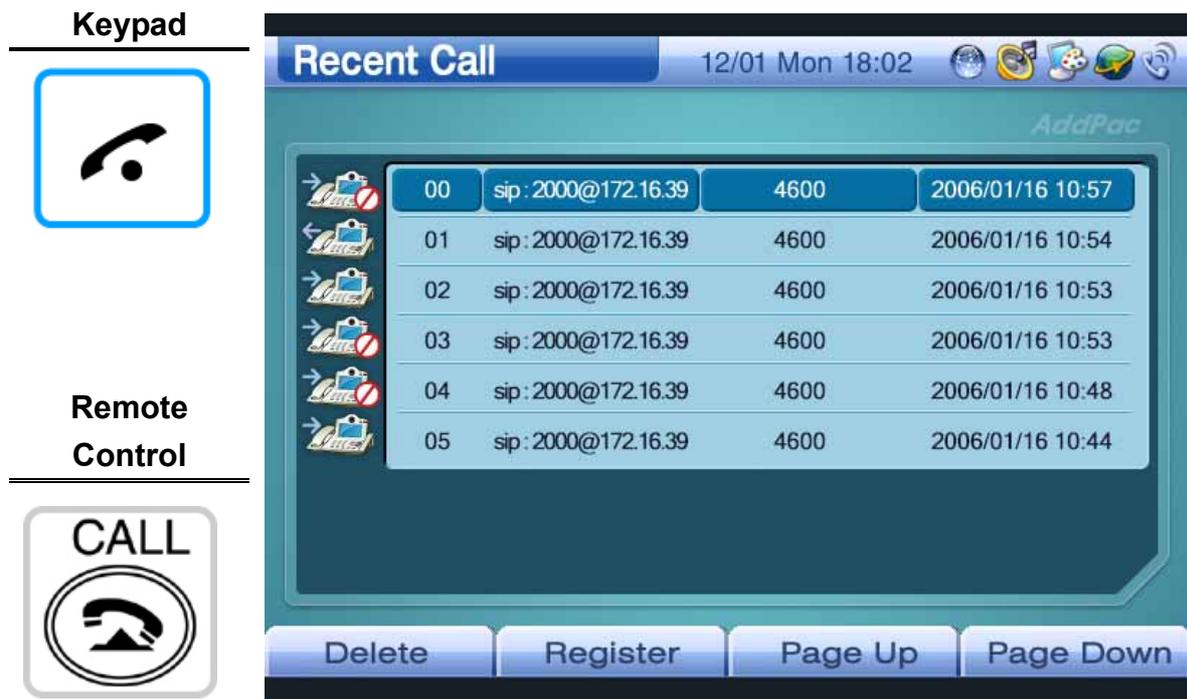
[Table 4-1] Use of the Call Button on the Remote Control

| Category | Description |
|-----------------------------------|--|
| Displaying Recent Call Log | Press the Call button while not calling to display the recent call log and to make a call promptly. |
| Making a Call | Press the Call button after dialing by using the number buttons while not calling. Then, AP-VP150 will send a calling signal to the other party. The Call button allows you to make a call to the other party from Phone Book. |
| Answering Call | a Press the Call button when a call is connected. Then, you can answer the call. |

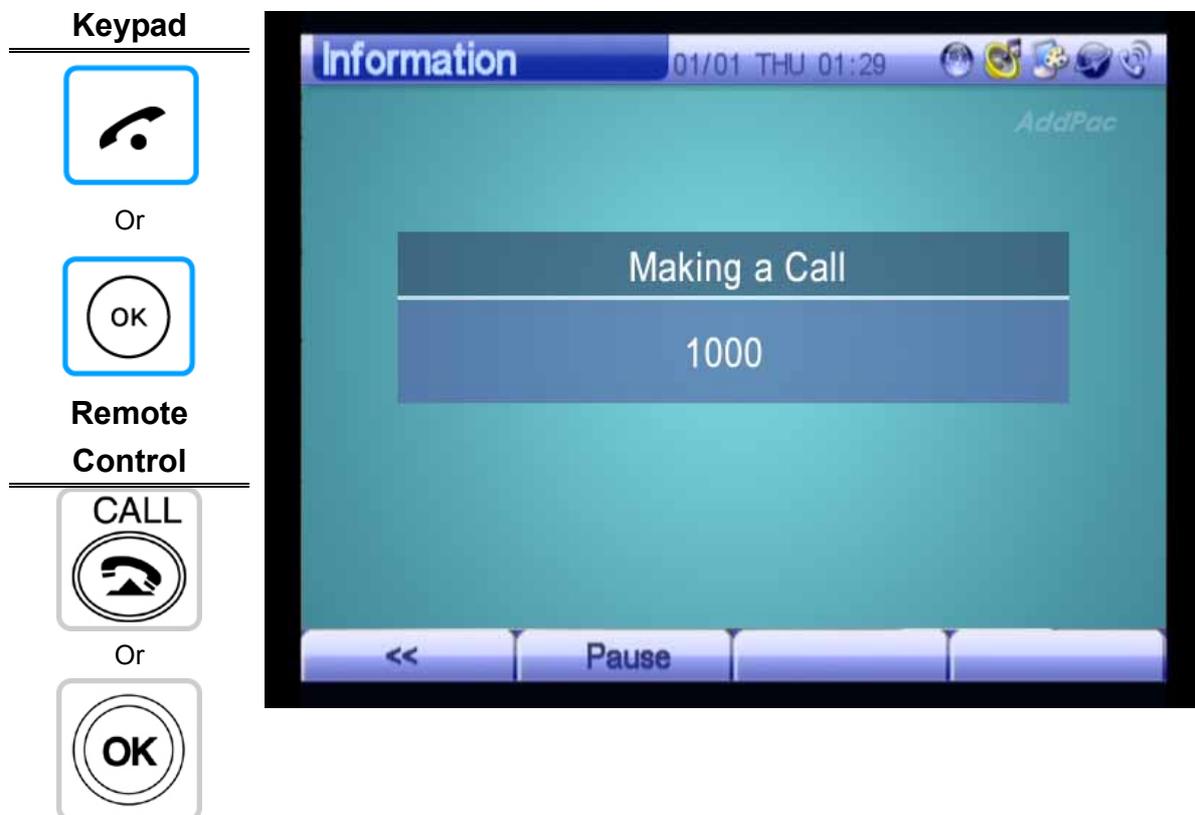
The keypad of AP-VP150 or the End button of the remote control is used as described in Table 4-2:

[Table 4-2] Use of the End Button on the Remote Control

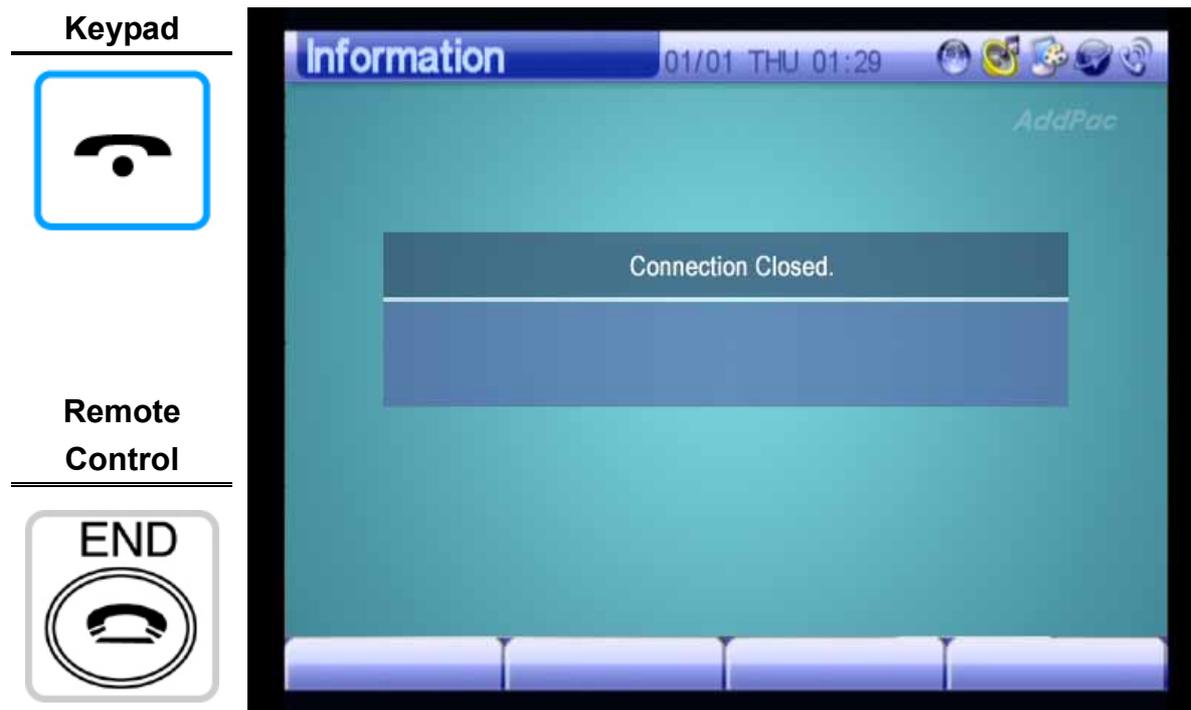
| Category | Description |
|----------------------------|---|
| Hang Up | Press the End button while calling to hang up a phone. |
| Cancel Call | Press the End button to cancel origination while making a call by using the Call button. |
| Switch to View Mode | Press the End button in OSD to move to another menu regardless of which menu you are using. |



(Figure 4-1) Recent Call Using the Call Button



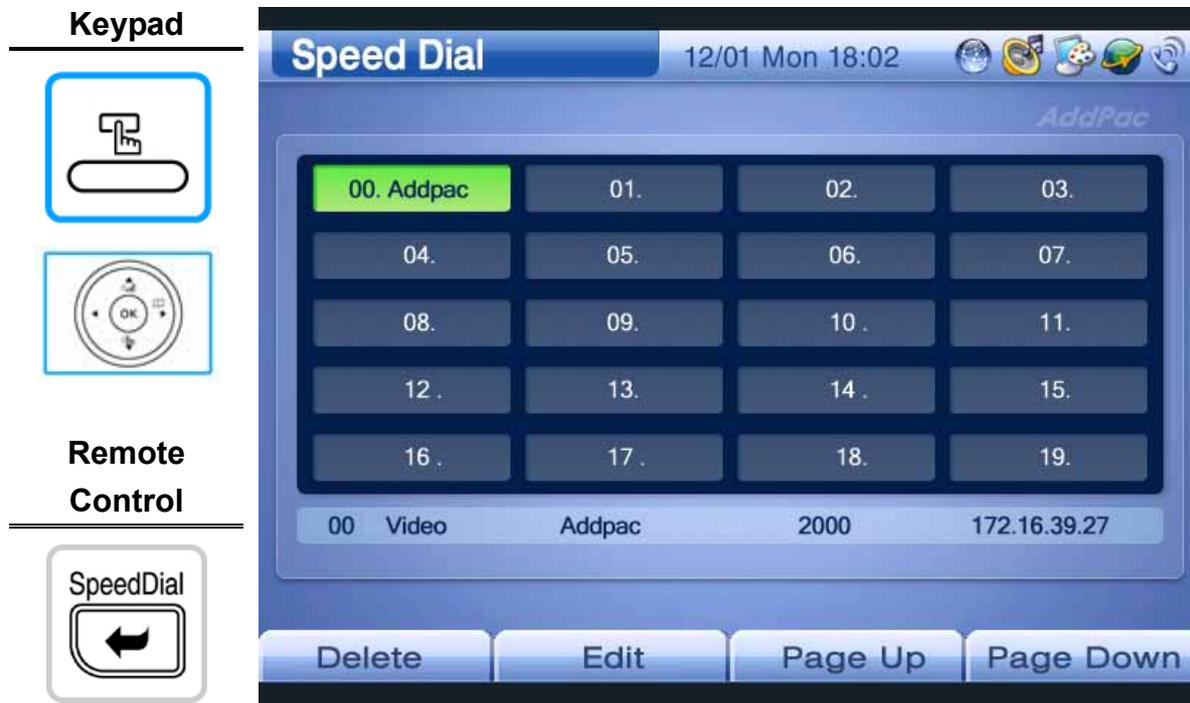
(Figure 4-2) Making a Call Using the Call Button



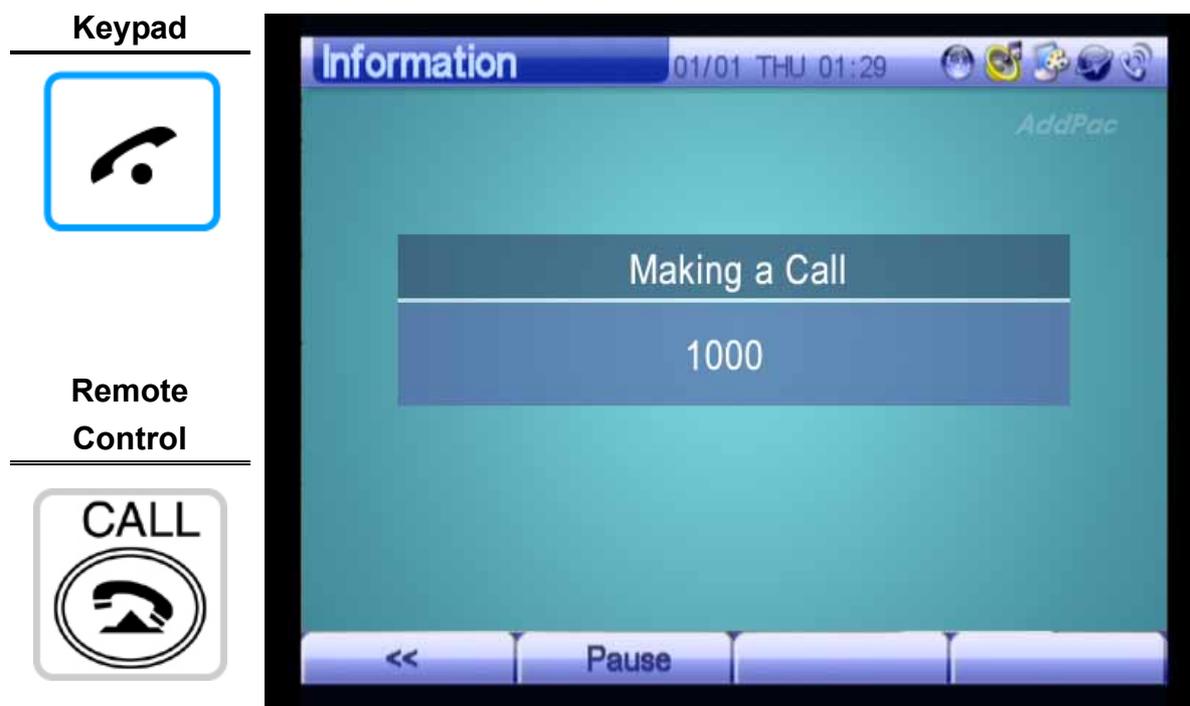
(Figure 4-3) Canceling Using the End Button

Speed Dial Using the Speed Dial Buttons

The speed dial buttons on the keypad or remote control allow you to enable the Speed Dial menu in OSD.



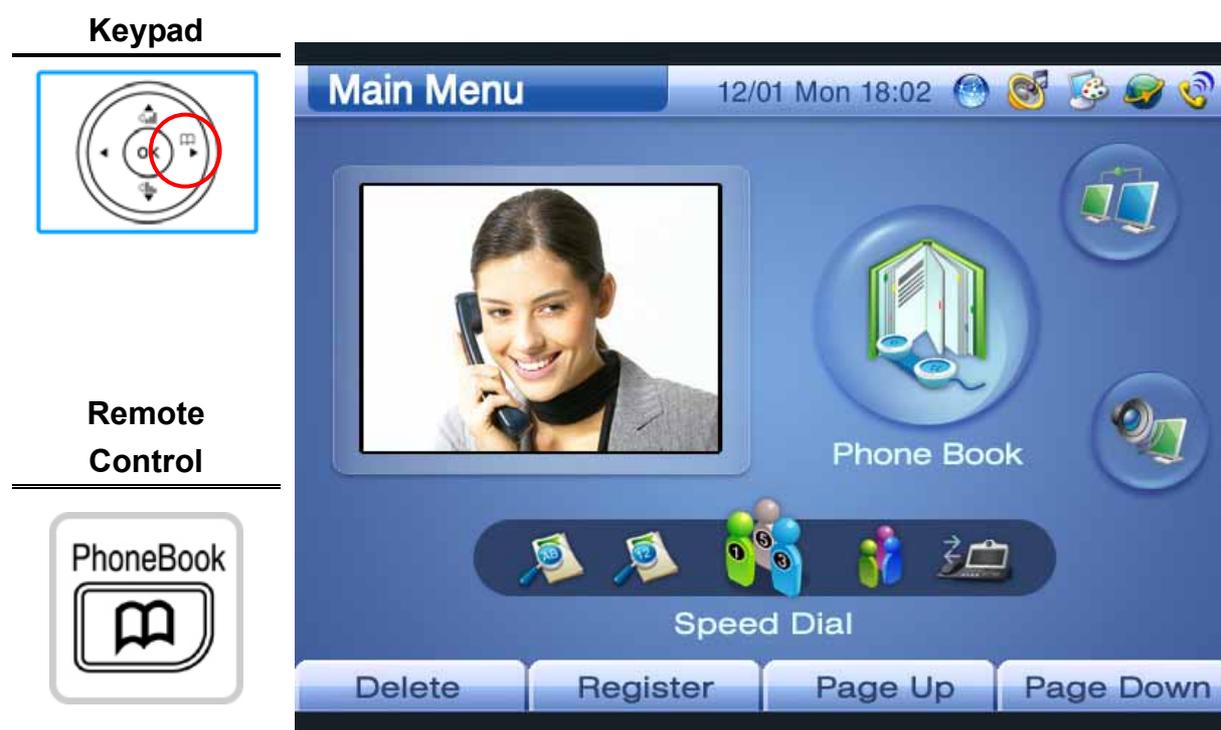
(Figure 4-4) Making Speed Dial Using the Speed Dial Buttons



(Figure 4-5) Making a Call Using the Call Button

Managing Phone Numbers Using Phone Book Buttons

The remote control or the Phone Book button of the keypad allows you to enable the Phone Book menu in OSD.



(Figure 4-6) Enabling a Menu Using the Phone Book Button

Bar Toggle Using the Remote Info Button

Press the Info button while calling to change the call time to the current time. If you press the button once again, the bars at the top and bottom of the screen will disappear. You can change the call time or current time or view the screen while calling more stably by removing the bars. You can remove the Info bars from either Local View or Remote View only.



(Figure 4-7) Remote View Before Pressing the Info Button



(Figure 4-8) Changing Display to Current Time by Pressing the Info Button



(Figure 4-9) Removing Bards at the Top and Bottom of the Screen by Using the Info Button

Changing View Mode Using the Layout Button

If you do not perform any operations while calling, AP-VP150 will enter Conversation View mode. If you press the View button, the mode will be changed to Remote View mode. If you press the button again, the mode will be changed to Local View mode.



(Figure 4-10) Conversation View While Making an Initial Call



(Figure 4-11) Switching to Remote View Using the Layout Button



(Figure 4-12) Switching to Local View Using the Layout Button

Enabling PIP Feature Using the OK Button

Picture In Picture (PIP) allows you to display more than one video from a regular monitor or a TV. AP-VP150 supports PIP to enable a variety of view modes. PIP is enabled only in the remote view and local view while making a video call by using the “OK” button on the remote control or keypad.



(Figure 4-13) Enabled in the Remote View and Local View



(Figure 4-14) Using PIP With the OK Button

As shown in Figure 5-14, use the OK button to change the location of the small screen from No.1 to No. 4 in sequence. If you press the OK button when the screen is located at No. 4, the screen will disappear. Press the OK button again to move the screen to No. 1. The Local View mode operates in the same method as the Remote View mode.

Camera Pan/Tilt Using the PTZ Button

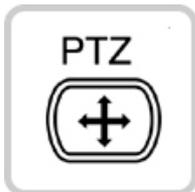
The Pan/Tilt feature allows you to adjust the video camera of the other party top/bottom/left/right easily and to enable zoom in/out or backlight only if the terminal of the other party is an AP-VG1000 video gateway. You can use the “PTZ” button of the remote control to adjust the camera of the other party.

[Table 4-3] PTZ Commands

| Category | Description |
|-----------|--|
| Pan | Controls the camera of the other party left or right by using the Left/Right keys of the remote control. |
| Tilt | Controls the camera of the other party top or bottom by using the Top/Bottom keys of the remote control. |
| Zoom | Controls zoom in/out of the camera by using the VOL+/- button of the remote control. |
| Mirror | Inverts the video of the other party by using the F3 key of the remote control. |
| Backlight | Operates the backlight of the camera by using the F4 key of the remote control. |
| Home | Press the OK button of the remote control to return the camera to the middle center automatically. |

Keypad

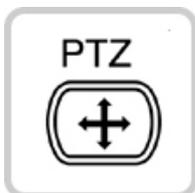
Remote Control



(Figure 4-15) Remote Camera Pan/Tilt

Keypad

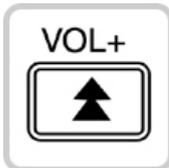
Remote Control



(Figure 4-16) Remote Camera Mirror

Keypad

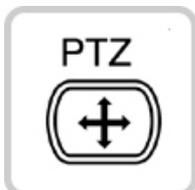
Remote Control



(Figure 4-17) Remote Camera Zoom In/Out

Keypad

Remote Control



(Figure 4-18) Remote Camera Backlight

Chapter 5. AP-VP150 Console Commands

Basic Commands for Network Setup

* Commands for Viewing Settings

```
VP150# show running-config
```

```
Building configuration...
```

```
Current configuration:
```

```
!
```

```
hostname VideoPhone
```

```
!
```

```
username root password router administrator
```

```
!
```

```
!
```

```
interface Loopback0
```

```
ip address 127.0.0.1 255.0.0.0
```

```
!
```

```
interface FastEthernet0/0
```

```
no ip address
```

```
speed auto
```

```
!
```

```
interface FastEthernet0/1
```

```
no ip address
```

```
speed auto
```

```
!
```

```
!
```

```
!
```

```
!
```

```
!
```

```
ftp server
```

```
!
```

```
-- more --
```

* IP and Default Route Settings

VP150# **configure terminal**

Enter configuration commands, one per line. End with CNTL/Z

VP150(config)# **interface fastethernet 0/0** → Fast Ethernet Interface Port 0

VP150(config-if)# **ip address 172.20.103.1 255.255.0.0** → IP Address Setting

VOIP_INTERFACE_DOWN

VOIP_INTERFACE_UP : (172.20.103.1)

VP150(config-if)# **exit**

VP150(config)# **ip route 0.0.0.0 0.0.0.0 172.20.1.1** → Default Route Setting

VP150(config)# **end** → Go to General Mode

VP150#

VP150# **write** → Save Settings

Proceed with write? [confirm] → OK

Building configuration...

[OK] Configuration saved to flash:/apos.cfg

* Once settings are complete, perform a ping test for the default router.

VP150# **ping 172.20.1.1**

PING 172.20.1.1 (172.20.1.1): 56 data bytes

64 bytes from 172.20.1.1: icmp_seq=1 ttl=255 time = 0.49 ms

64 bytes from 172.20.1.1: icmp_seq=2 ttl=255 time = 0.43 ms

64 bytes from 172.20.1.1: icmp_seq=3 ttl=255 time = 0.44 ms

64 bytes from 172.20.1.1: icmp_seq=4 ttl=255 time = 0.44 ms

64 bytes from 172.20.1.1: icmp_seq=5 ttl=255 time = 0.44 ms

--- 172.20.1.1 ping statistics ---

5 packets transmitted, 5 packets received, 0% packet loss

round-trip min/avg/max = 0.43/0.450/0.49 ms

If the result of the ping test is good, input in the console for making a call to a video phone is complete.

List of Video Mode Commands

In AP-VP150, audio/video settings should be changed to OSD; however, depending on circumstances, you can change related settings by using Telnet.

* Entering Video Mode

VP150#

VP150# configure terminal

Enter configuration commands, one per line. End with CNTL/Z

VP150(config)# video 0/0

VP150(config-video0/0)#

VP150(config-video0/0)#

[Table 0-1] List of Video Mode Commands

| Command | Description | Default |
|---------------------|--|---------|
| audio-in | Selects audio input. | mic |
| audio-in-gain | Adjusts audio line input gain. | 23 |
| audio-mic-boost | Audio microphone boost 20dB | on |
| audio-out | Selects audio output. | Head |
| audio-out-gain | Adjusts audio headset output gain. | 121 |
| video-in-bright | Adjusts video input brightness. | 128 |
| video-in-contrast | Adjusts video input contrast. | 64 |
| video-in-saturation | Adjusts video input saturation. | 68 |
| video-in-h-offset | Adjusts video input horizontal offset. | 8 |
| video-in-v-offset | Adjusts video input vertical offset. | 19 |
| video-out-bright | Adjusts video output brightness. | 31 |
| video-out-blue-gain | Adjusts video output blue gain. | 128 |
| video-out-red-gain | Adjusts video output red gain. | 128 |
| no | Enters default mode. | |

Selecting External Audio Input Port Mode

This command allows you to select line input or microphone input as mode of the external audio input port (Default: Microphone).

```
VP150(config-video0/0)# audio-in ?    => Enter ? to display a list of commands.
  line          Line input                => Line Input
  mic           Microphone input          => Microphone Input
VP150(config-video0/0)# audio-in line
VP150(config-video0/0)#
VP150(config-video0/0)# audio-in mic
VP150(config-video0/0)#
```

Adjusting Gain Value of External Audio Input Port

This command allows you to adjust the gain value of the external audio input port (Default: 23).

```
VP150(config-video0/0)#
VP150(config-video0/0)# audio-in-gain ?
  Gain        [0 - 31]                    => Setting Range
VP150(config-video0/0)# audio-in-gain 23
VP150(config-video0/0)#
```

Amplifying Microphone of External Audio Input Port

This command allows you to amplify the microphone of the external audio input port in microphone mode (Default: off).

```
VP150(config-video0/0)#
VP150(config-video0/0)# audio-mic-boost ?
  on          Enable
  off         Disable
VP150(config-video0/0)# audio-mic-boost off
VP150(config-video0/0)#
```

Selecting External Audio Output Port Mode

This command allows you to change mode of the external audio output port on CLI (Default: headphone).

```
VP150(config-video0/0)#  
VP150(config-video0/0)# audio-out ?  
  line          Line output  
  head          Headphone output  
VP150(config-video0/0)# audio-out head  
VP150(config-video0/0)#
```

Adjusting Gain Value of External Audio Output Port

This command allows you to adjust the gain value of the external audio output port (Default: 121).

```
VP150(config-video0/0)#  
VP150(config-video0/0)# audio-out-gain ?  
  Gain          [0 - 127]  
VP150(config-video0/0)# audio-out-gain 121  
VP150(config-video0/0)#
```

Adjusting Video Input Brightness

This command allows you to adjust the brightness of the internal camera and composite input port (Default: 128).

```
VP150(config-video0/0)#  
VP150(config-video0/0)# video-in-bright ?  
  Brightness    [0 - 255]  
VP150(config-video0/0)# video-in-bright 128  
VP150(config-video0/0)#
```

Adjusting Video Input Sharpness

This command allows you to adjust the sharpness of the internal camera and composite

input port (**Default: 64**).

```
VP150(config-video0/0)#  
VP150(config-video0/0)# video-in-contrast ?  
  Contrast          [0 - 127]  
VP150(config-video0/0)# video-in-contrast 64  
VP150(config-video0/0)#
```

Adjusting Video Input Saturation

This command allows you to adjust the saturation of the internal camera and composite input port (**Default: 68**).

```
VP150(config-video0/0)#  
VP150(config-video0/0)# video-in-saturation ?  
  Saturation        [0 - 127]  
VP150(config-video0/0)# video-in-saturation 68  
VP150(config-video0/0)#
```

Adjusting Horizontal Video Input Offset

This command allows you to adjust the horizontal offset of the internal camera and composite input port. This command is used to connect the external video devices of the DVD player, if required (**Default: 8**).

```
VP150(config-video0/0)#  
VP150(config-video0/0)# video-in-h-offset ?  
  H-offset          [2 - 254]  
VP150(config-video0/0)# video-in-h-offset 8  
VP150(config-video0/0)#
```

Adjusting Vertical Video Input Offset Value

This command allows you to adjust the vertical offset of the internal camera and composite input port. This command is used to connect the external video devices of the DVD player, if required (**Default: 19**).

```
VP150(config-video0/0)#  
VP150(config-video0/0)# video-in-v-offset ?  
  V-offset          [1 - 255]  
VP150(config-video0/0)# video-in-v-offset 19  
VP150(config-video0/0)#
```

Adjusting the Brightness of External Video Output Port

This command allows you to adjust the brightness of the internal LCD display and composite/S-VIDEO output port (**Default: 31**).

```
VP150(config-video0/0)#  
VP150(config-video0/0)# video-out-bright ?  
  Brightness        [0 - 31]  
VP150(config-video0/0)# video-out-bright 31  
VP150(config-video0/0)#
```

Adjusting Color of External Video Output Port (Blue / Red)

This command allows you to adjust the color of the internal LCD display and composite/S-VIDEO output port. The colors are blue and red (**Default: 128**).

```
VP150(config-video0/0)#  
VP150(config-video0/0)# video-out-blue ?  
  Gain      [0 - 255]  
VP150(config-video0/0)# video-out-blue 128  
VP150(config-video0/0)#  
VP150(config-video0/0)# video-out-red ?  
  Gain      [0 - 255]  
VP150(config-video0/0)# video-out-red 128  
VP150(config-video0/0)#
```

Chapter 6. Appendix

This Appendix describes the pin specification of the cables used for AP-VP150.

- Console port signal and pin-out (RJ-45 to DB9)
- Pin-out of the UTP cable (RJ-45 to RJ-45)

[Console Port Signal and Pin-Out]

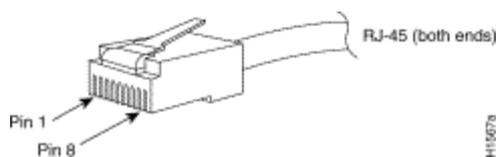
The built-in RJ-45 to DB9 (female DTE connector) cable is used to connect the console port of this product to the PC where the terminal emulator software operates.

[Table 6-1] Console Port Pin-Out

| Console Port (DTE) | RJ-45 | DB-9 | Console Device (PC) |
|--------------------|-----------|----------|---------------------|
| Signal | RJ-45 Pin | DB-9 Pin | Signal |
| RTS | 1 | 8 | CTS |
| DTR | 2 | 6 | DSR |
| TxD | 3 | 2 | RxD |
| GND | 4 | 5 | GND |
| GND | 5 | 5 | GND |
| RxD | 6 | 3 | TxD |
| DSR | 7 | 4 | DTR |
| CTS | 8 | 7 | RTS |

[Pin-Out of UTP Cable (RJ-45 to RJ-45)]

The RJ-45 to RJ-45 Ethernet cable is used to connect AP-VP150 to another device (typically hub). The pin sequence of the RJ-45 connector is shown in Figure 7-1. For the signals and specification, refer to Table 7-2, "Signals and Pin-Out of Serial Ethernet Cable".



(Figure 6-1) 100Base-TX RJ-45 Connector

[Table 6-2] Signals and Pin-Out of Serial Ethernet Cable

| RJ-45 | Signal | Direction | RJ-45 Pin |
|-------|--------|-----------|-----------|
| 1 | Tx + | → | 1 |
| 2 | Tx - | → | 2 |
| 3 | Rx + | ← | 3 |
| 4 | - | - | 4 |
| 5 | - | - | 5 |
| 6 | Rx - | ← | 6 |
| 7 | - | - | 7 |
| 8 | - | - | 8 |

- This specification is about the serial cable that connects AP-VP150 to the hub.
- Use a cross cable to connect AP-VP150 to either another AP-VP150 or a PC.

Abbreviation and Glossary

| Glossary and Abbreviation | Definition |
|--|--|
| ADSL | Stands for Asymmetric Digital Subscriber Line. If you use ADSL, the central office will be connected to each home directly in a 1:1 method. In a down-link where data is transferred downward from the central office to the users, high-speed data communications of at least 1.5 Mb can be made. On the contrary, in an up-link from the users to the central office, communications are made very slowly. Thus, this service is called an asymmetrical service not a symmetrical service. |
| AP-VPMS | Stands for VoIP Plug & Play Management Software. This integrated management software developed by AddPac Technology enables VoIP products to be installed in a GUI environment, be monitored in real-time, or to be upgraded. This software also enables network administration. |
| API | Stands for Application Programming Interface. API is a function call legend standard that defines service interfaces. |
| APOS | Stands for AddPac Internetworking Operation System. This is an operating system that supports the network products developed by AddPac Technology. |
| ATM | Stands for Asynchronous Transfer Mode. This is an international cell relay standard for providing a variety of services such as voice, video, and data in the form of a cell of a fixed length (53 bytes). If you use a fixed-length cell, cell processing will be performed in the hardware; thus, transmission delay can be reduced. ATM is designed to make use of high-speed transmission media such as E3, SONET, and T3. |
| ATM High-Speed National Network | This network has been commercialized by the Korean government since 1993. The high-speed national network designed for governmental offices provides data services (transport network services) and Internet services. Data services are categorized into ATM, dedicated lines, packet exchange, and frame relay services. Internet services are categorized into Internet multi-services provided through ATM connection circuits and simple Internet services. |
| ATM Forum | This is an international organization founded by Cisco Systems, NET/ADAPTIVE, Northern Telecom, and Sprint in 1991 to reach the agreement of a standard for ATM technologies. ATM Forum expands the formal standards developed by ANSI and ITU-T and the agreements on the implementation of technologies. |

| | |
|---------------------------|---|
| Authentication | Operation of verifying the identification of a person or a process. This is a security feature. |
| BNC Connector | This is a standard connector used to connect IEEE 802.3 10Base-2 coaxial cables to Media Access Unit (MAU). |
| Boot Loader | This is a chip installed into a printed circuit board used to send executable boot commands to a network device. |
| Bps | Stands Bits per second. Typically called bps. Reference: Bit Rate. |
| Cable Modem | <p>This device converts analog signals to digital signals in order to enable the Internet through a cable network. Since telephone networks are made of copper wires and cable networks are made of coaxial and optical cables, the bandwidth of cable networks are much wider than that of telephone networks. However, the modulation/demodulation technology, which converts digital to analog and vice versa, is required for cable networks when data is transferred.</p> <p>Call Center is a central place where calls from customers and other people are processed systematically. Computer automation is implemented in Call Center to some degree. Typically, Call Center processes many calls simultaneously, categorizes calls, connects the calls to personnel, and records calling logs automatically. Call Center is typically used for mail order catalog firms, telemarketing firms, customer centers for PC products, and large enterprises that sell products or provide services.</p> |
| Call Center | |
| Caller ID | <p>Caller ID is a call service that enables the phone number of the caller to be sent to the recipient. To see the phone number, a digital reader should be installed into the phone.</p> <p>One of the five-level UTP cable connection methods specified by the EIA/TIA-586 standard. Category 5 cabling enables data to be transferred at a rate of up to 100Mbps.</p> |
| Category 5 cabling | |
| CBR | <p>Stands for Constant Bit Rate. The ATM network QoS class CBR defined by ATM Forum is used for a connection device that is based on a precise clock processing method to ensure untwisted data transfer.</p> <p>Stands for Circuit Emulation Service. This service allows you to multiplex multiple line emulation streams for voice and video with packet data through a single high-speed ATM link without using a separate ATM access multiplexer.</p> |
| CES | |
| Checksum | This is a method for checking the integrity of transferred data. Checksum is an integer calculated from the octet sequence obtained by a series of operations. This |

| | |
|----------------------|--|
| | <p>value is calculated by the recipient again for verification.</p> |
| Coaxial cable | <p>This coaxial cable is made of an external cylinder-type conductor that wraps an internal wire conductor. Examples of the coaxial cables used for LAN include 50Ω cables used for digital signal processing and 75Ω cables used for high-speed digital signal processing.</p> |
| CODEC | <p>Stands for COder-DECoder. CODEC is: 1. A built-in circuit device that converts analog signals to digital bit streams and vice versa based on a pulse code modulation method; 2. A DSP software algorithm that compresses or decompresses voice or audio signals over Voice over IP, Voice over Frame Relay, or Voice over ATM.</p> |
| Console | <p>A DTE interface through which a command enters a host</p> |
| CoS | <p>Stands for Class of Service. CoS refers to the standard method that enables a higher-level protocol to make a lower-level protocol process messages. For the SNA lower-level area routing, CoS is used to determine the optional path for lower-level area nodes to set a given session. CoS consists of a virtual path number and a transmission priority field. Also called ToS</p> |
| Decryption | <p>Decryption means restoring data to the original non-encrypted state by applying the encryption algorithm to the encrypted data in reverse.</p> |
| DHCP | <p>Stands for Dynamic Host Configuration Protocol. DHCP has a mechanism that reassigns an IP address dynamically in order for the host to recycle unnecessary IP addresses.</p> |
| DNS | <p>Stands for Domain Name Server. This is a server system used for the Internet to convert the name of a network node name to an address.</p> |
| DS-3 | <p>Stands for Digital Signal level 3. This is a frame processing standard used to transmit digital signals at a rate of T3 (44.736Mbps).</p> |
| DSP | <p>Stands for Digital Signal Processor. This is a dedicated processor that processes only digital signals. DSP is used as a sub-processor for voice processing in NEXT.</p> |
| DTMF | <p>Stands for Dual Tone MultiFrequency. Two voice-band tones are simultaneously used for dialing (just like touch tones).</p> |
| E&M | <p>Stands for either recEive and transmit or Ear and Mouth. Typically, this is a trunking device used for switch-to-switch or switch-to-network two-way communications. The analog E&M interface of Cisco is a RJ-48 connector for PBX trunk lines. E&M is available for E1/T1 digital interfaces.</p> |
| E1 | <p>This is a wide area digital transmission technique used mainly in Europe. E1 enables data transfer at a rate of 2,048Mbps. E1 can be lent by regular service providers for a</p> |

| | |
|--------------------|---|
| | private use. |
| Encryption | Encryption means that a specific algorithm is applied to data in order to convert data to a form that unauthorized users cannot identify. |
| Ethernet | Baseband LAN standard initiated by Xerox Corporation and co-developed by Xerox, Intel, and DEC. CSMA/CD is used for Ethernet networks, which operate through a variety of cables at a rate of 10Mbps. Ethernet is similar to the IEEE 802.3 standard. Reference: 10Base-2, 10Base5, 10Base-F, 10Base-T, 10Broad-36, Fast Ethernet, and IEEE 802.3. |
| FAX | Abbreviation of Facsimile. FAX refers to the transmission of scanned texts or images to a printer or an output device connected to another phone number by using a telephone line. Once the original document is read by a facsimile, the facsimile treats the document as a fixed graphic image, and converts it to bitmap. In this digital form, data is transferred in the form of an electrical signal through a phone system. The receiving facsimile restores the data to a encoded image, and prints it on a sheet of paper. |
| Frame | Logical group of data transferred to a data link layer unit through a transmission medium. From frames, the header and trailer that include user data are important. Headers and trailers are used for synchronization and error control. Cells, datagrams, messages, packets, and segments are used to describe logical data groups in various layers of OSI or based on various technologies. |
| Frame-Relay | This is an industry-standard switching-type data link layer protocol that processes multiple virtual lines in inter-connected devices by using the HDLC encapsulation. Frame-Relay is more efficient than X.25. |
| FTP | Stands for File Transfer Protocol. FTP, which is an application protocol, is part of the TCP/IP protocol stack used for file transfer between network nodes. FTP is defined in RFC 959. |
| FXO | Stands for Foreign Exchange Office. The FXO interface is connected to the switching center of Public Switched Telephone Network (PSTN), and is provided by a regular phone. The FXO interface of Cisco is a station interface of the switching center or PBX on PSTN, and is a RJ-11 connector for analog connection devices. |
| FXS | Stands for Foreign Exchange Station. The FXS interface is directly connected to a standard phone, and provides a ring-back tone, voltage, and a dial tone. The FXS interface of Cisco is a RJ-11 connector for basic telephone service devices, keyset, and PBX. |

G.711

This specifies the PCM voice coding technique of 64Kbps. Voice is encoded under G.711 in an appropriate format that enables digital voice transmission over either PSTN or PBX. G.711 is specified under the ITU-T standard of G-series recommendation.

G.723.1

This is one of the H.324 standards, and specifies a compression technique that enables voice or audio signal elements to be compressed at a very low bit transmission rate. This CODEC is related to the bit transmission rates of 5.3Kbps and 6.3Kbps. The high bit transmission rate is based on the MLMLQ technology, and provides high quality sounds. The low bit transmission rate is based on CELP, and ensures high flexibility for system designers. This standard is specified under the G-series ITU-T standard.

G.726

This standard specifies ADPCM coding performed at a rate of 40Kbps, 32Kbps, 24Kbps, or 16Kbps. If the PBX network is configured to support ADPCM, you can exchange ADPCM encoding voice with packet voice networks, PSTN, or PBX networks. This standard is specified under the ITU-T standard of G-series recommendation.

G.728

This standard specifies variations that ensure low delay of CELP voice compression performed at 16Kbps. The CELP voice coding should be converted to a public telephony format for transmission over either PSTN or PSTN. This standard is specified under the ITU-T standard of G-series recommendation, and defines the CELP compression that encodes G.729 voice to a stream of 8Kbps. G.728 has two variations (G.729 and G.729 Annex A), and the variations are different in terms of calculation complexity. The two variations have voice quality similar to ADPCM of 32Kbps. G.728 is specified under the ITU-T standard of G-series recommendation.

Gatekeeper

This is the component of the H.323 video conference system that analyzes a caller ID, controls access authorization, and manages the subnet bandwidth. A gatekeeper is H.323 entity that provides the features that enable address conversion and LAN access control to the H.323 terminal and gateway on LAN. Gatekeepers can provide other services such as bandwidth control and search for a gateway to the H.323 terminal and gateway. This device manages a device registry on a multimedia network. The devices are registered with the gatekeeper, and they request the gatekeeper to authorize a call.

H.225

This ITU standard is applied to the session setting and packetization of H.225.0. H.225.0 specifies a variety of protocols such as RAS, Q.931, and RTP.

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| H.245 | <p>This ITU standard is applied to H.245 endpoints control.</p> |
| H.323 | <p>This standard is an extension of the ITU-T standard H.320 that enables voice conferences over LAN or another packet switching network as well as video transmission over the Internet.</p> |
| HBD3 | <p>This is a type of line codes used for E1.</p> |
| HDLC | <p>Stands for High-Level Data Link Control. HDLC is a transmission protocol used in the data link layer, which is the second layer of the 7-layer OSI model. HDLC is used in the X.25 packet switching network. Data consists of frames in HDLC, and frames are transmitted through a network. The destination verifies if the frames have been successfully transmitted. The HDLC protocol includes data for controlling data flow and troubleshooting errors in a data frame.</p> |
| Hookflash | <p>This is a short on-hook duration of a device such as phones during a call. Hookflash means that a phone attempts to make a dial tone recall through PBX. This is usually used to perform call transfer.</p> |
| HTTP | <p>Stands for Hypertext Transfer Protocol. This protocol enables a Web browser or a Web server to transfer files such as text files and graphic files.</p> |
| IPSec | <p>Stands for Internet Protocol Security protocol. IPSec is a still developing standard for the security of networks or the packet processing layer of network communications. In the previous security techniques, security has been included in the application layers of a communication model. IPSec is particularly useful for the implementation of remote user access through dial-up access to Virtual Private Networks (VPN) and regular private networks. The main advantage of IPSec is that security can be ensured without replacing an individual user PC with a new one. Cisco takes the initiative of suggesting IPSec as the standard, and has embedded support to this feature into its network router.</p> |
| IPv6 | <p>IPv6 is the latest IP, and has been embedded into part of IP support into many products including the operating systems of PC. IPv6 is called IP Next Generation (IPng), that is the next-generation IP. IPv6 is the formal IETF standard. IPv6 is designed as an evolutionary version of the currently used IP version 4. Network hosts or intermediate nodes that adopt either IPv4 or IPv6 can process any packets formulated by either IPv4 or IPv6; thus, the users and service providers can upgrade their IP to IPv6 individually without collaboration.</p> |
| ISP | <p>Stands for Internet Service Provider. ISP refers to service providers that provide Internet access services, Web site construction and Web hosting services to</p> |

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| | <p>individuals or enterprises. ISP has devices and communication lines required for Internet access, and large ISPs have their own high-speed dedicated lines in order to provide services that have better quality and are less dependent on telephone network service providers to their customers. The large nationwide ISPs of the U.S. are AT&T WorldNet, IBM Global Network, MCI, Netcom, UUNet, and PSINet. Those of Korea are INet, Channeli, Netsgo, and Netian. The users access the Internet through online service providers. The main online service providers of the U.S. are America Online and Compuserve, and those of Korea are Chollian, Unitel, and Hitel.</p> |
| ITU-T | <p>Stands for International Telecommunication Union Telecommunication Standardization Sector. This is an international organization that develops global standards on communication technologies. ITU-T performs the previous tasks of CCITT.</p> |
| IVR | <p>Stands for Interactive Voice Response. IVR refers to a system that provides data in the form of recorded messages through phone lines as a response to user input in the form of human voice or mainly DTMF signal processing. Examples are banks that allow you to check balance by using a phone or automated stock quotations system.</p> |
| LAN | <p>Stands for Local Area Network. This is a low-error, high-speed data network that covers relatively small geographical areas of up to several thousand meters. LAN inter-connects workstations, peripherals, terminals, and other devices in a building or a geographically limited area. The LAN standard specifies a cable connection and signal processing method in the physical layer and data link layer of the OSI model. Reference: MAN, WAN.</p> |
| Link | <p>This is a network communication channel configured with lines or a transmission path between the transmitter and receiver and related devices. A link mainly refers to WAN connections, and is sometimes called a line or a transmission link.</p> |
| Loopback Test | <p>This test is performed as follows: Transmit a signal or return it to the transmitter at a location on the communication path. This loopback test is usually performed to test the availability of network interfaces.</p> |
| MAC Address | <p>Stands for Media Access Control Address. This is a standard data link layer address required for any and all ports and devices connected to LAN. Other devices on a network use this address to locate a specific port within the network and to create or update a routing table and data structure. A MAC address is 6 bytes long, and is managed by IEEE. A MAC address is called as a hardware address, a MAC-layer address, or a physical address. Compare to: Network Address</p> |

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| MAN | <p>Stands for Metropolitan-Area Network. This network covers the entire area of a large city. The operation area of MAN is geographically larger than that of LAN; however, is smaller than that of WAN. Compare to: LAN, WAN.</p> |
| MGCP | <p>MGCP, which is also known as H.248 or Megaco, is a standard protocol required to operate signals required during a multimedia conference or to manage sessions. This protocol defines a method of communications between the media gateway that converts the data format required for a circuit switching network to the one required for a packet switching network and the media gateway control device. MGCP may be used to set up, manage, and complete calls among multiple endpoints. Megaco and H.248 are the improved version of MGCP.</p> |
| NAT | <p>Stands for Network Address Translation. NAT is a mechanism for reducing the need for globally unique IP addresses. NAT allows you to access the Internet as an organization whose address is not globally unique converts the address to an address space where the address can be globally routed. NAT is also called Network Address Translator.</p> |
| NTP | <p>Stands for Network Time Protocol. NTP, which is built based on TCP, sets a local time accurately based on a wireless clock and an atomic clock on the Internet. NTP can synchronize a distributed clock in the unit of milliseconds for a long time.</p> |
| PABX | <p>Stands for Private Automatic Branch eXchange. PABX is a switch for phones used at enterprises. PABX is used in Europe, while PBX is used in the U.S.</p> |
| Packet | <p>A packet is a group of logical data that contains user data and a header where control data is contained. A packet mainly refers to the unit of network layer data.</p> |
| PBX | <p>Stands for Private Branch eXchange. PBX, which is located in a subscriber building, is a digital or analog phone switchboard used to connect private networks to public phone networks.</p> |
| PING | <p>Stands for Packet INternet Groper. ICMP echo-processes a response between messages. PING is used for an IP network to test the accessibility of network devices.</p> |
| Point to Point Connection | <p>One of the two basic connection types. In ATM, the point to point connection may be either a one-way connection or a two-way connection between two ATM end systems.</p> |
| Pont to Multipoint Connection | <p>One of the two basic connection types. In ATM, the point to multipoint connection is a one-way connection method that enables a transmitting end-system (root node) to be connected to multiple receiving end-systems (riff). Compare to: Point to Point</p> |

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| | Connection |
| POTS | Stands for Plain Old Telephone Service. Reference: PSTN. |
| PPP | <p>Stands for Point-to-Point Protocol. This protocol is the advanced version of SLIP that enables a router-to-router connection or a host-to-network connection through synchronous or asynchronous lines. SLIP is designed to be used on an IP, while PPP is used along with network layer protocols such as IP, IPX, and ARA. PPP has a bulletin board security mechanism such as CHAP and PAP. PPP has two sub-protocols, LCP and NCP. Reference: CHAP, LCP, NCP, PAP, and SLIP</p> <p>This is a collection of communication protocols that inter-work with one another and that process communications in part or all of the seven layers of the OSI reference model. All protocol stacks are not related to each layer of the OSI model, and one protocol of a stack can process multiple layers at one time. TCP/IP is a typical protocol stack.</p> |
| Protocol Stack | |
| PSTN | Stands for Public Switched Telephone Network. PSTN is a general term that refers to various telephone networks and services used worldwide. PSTN is also called POTS. |
| PVC | Stands for either Permanent Virtual Circuit or Permanent Virtual Connection. PVC is a virtual circuit installed permanently. PVC allows you to reduce a bandwidth for setting up or releasing a circuit when a specific virtual circuit must always exist. As an ATM term, PVC is called Permanent Virtual Connection. |
| Q.931 Signaling | This is an ITU standard that specifies ISDN signal processing methods. The H.225.0 standard uses a variation of Q.931 to set up or disconnect the session of H.323. |
| QoS | Stands for Quality of Service. QoS is the criterion of measuring the performance (e.g. transmission quality and service availability) of a transmission system. |
| RAM | Stands for Random-Access Memory. RAM is a volatile memory that can be read or written by a microprocessor. |
| RAS | RAS refers to a protocol for registration, connect acknowledgement, and status protocol. RAS is used for H.323 to find or have a conversation with a gateway. |
| RISC | Stands for Reduced Instruction Set Computing. |
| Router | This is a network layer device that determines the optional route to which network traffic is delivered by using one or more metrics. A router forwards packets from a network to another network based on the network layer information. A router is sometimes called a gateway. (A gateway in this meaning is getting older.) Compare to: Gateway; Reference: Relay |
| RS-232 | This is a frequently used physical layer interface, and is known as EIA/TIA-232 |

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| | nowadays. |
| RTCP | Stands for RTP Control Protocol. This protocol monitors the QoS of IPv6 RTP connections, and transfers data on sessions in operation. Reference: Real-Time Transport Protocol (RTP) |
| | 1. Stands for Routing Table Protocol. This VINES routing protocol based on RIP distributes network topology data, and helps the VINES server that searches for adjoining clients, servers, and routers. A delay time is used as a routing metric. Reference: SRTCP |
| RTP | 2. Stands for Rapid Transport Protocol. RTP provides facing and error recovery services to the APPN data when the data passes the APPN network. RTP allows you to check error recovery and flow control synthetically. RTP does not recover but prevents traffic congestion. |
| | 3. Stands for Real-Time Transport Protocol. This is one of the IPv6 protocols. RTP is designed to enable the synthetic network transmission feature in the application that transfers real-time data such as audio, video, and simulation data through multicast or unicast network services. RTP enables the real-time application to identify a payload type, specify a sequence number, perform time-stamping, and to monitor a transmission procedure. |
| SIP | Stands for Session Initiation Protocol. SIP is an application layer control protocol based on very simple texts, and allows more than one user to make, correct, or complete a session. Examples of sessions include remote conferences, phones, meetings, event notifications, and instant messaging on the Internet. SIP is independent to lower-level packet protocols (e.g. TCP, UDP, ATM, and X.25). |
| SmartViewer | This is software that allows you to monitor AP-GK1000, AP-GK2000, and AP-GK3000, which are the gatekeeper series of AddPac Technology, in a Graphical User Environment (GUI) environment in real-time and to search or manage statistical data. |
| SNMP | Stands for Simple Network Management Protocol. This is a network management protocol almost dedicated to TCP/IP networks. SNMP monitors and controls network devices, and manages setup, collection of statistical data, operation performance, and security features. Reference: SGMP and SNMP2 |
| T1 | This is the facility of a digital WAN service provider. T1 uses the AMI or B8ZS coding method to transfer DS-1 format data at a rate of 1.544Mbps over a phone switching network. Compare to: E1; Reference: AMI, B8ZS, DS-1 |
| TCP/IP | Stands for Transmission Control Protocol/Internet Protocol. TCP/IP is a general name |

of the protocol suites developed in the seventies by DoD of the U.S. to help build a global inter-network. TCP and IP are two of the best known protocol suites.

Reference: IP and TCAP

Telco Stands for Telephone Company. Telco refers to a telephone service provider. Typically, Telco means individual local telephone service providers such as Bell, and sometimes includes long distance telephone service providers.

Telnet This is a standard terminal emulation protocol included in the TCP/IP protocol stacks. Telnet is used to connect remote terminals. Telnet allows you to log into a remote system and to use the resources like they are connected to a local system. Telnet is defined in RFC 854.

VCI Stands for Virtual Channel Identifier. VCI refers to a 16-bit field in the header of an ATM cell. VCI as well as VPI allows you to identify the next receiver of a cell while the cell is being delivered to the receiver through a series of ATM switches. The ATM switches use the VPI/VCI field to identify the next network VCI that the cell should pass to reach the receiver, which is the final destination. The features of VCI are similar to those of DLCI.

VDSL Stands for Very-high-data-rate Digital Subscriber Line. VDSL is one of the four DSL technologies. VDSL provides downstream of 13 Mbps to 52 Mbps and upstream of 1.5Mbps to 2.3Mbps through a pair of twisted copper wires. The operation range of VDSL is limited to 1,000ft to 4,500ft (304.8m to 1,372m). Compare to: ADSL, HDSL, and SDSL

VoATM Stands for Voice Over ATM. VoATM enables a router to deliver voice traffic (e.g. phone calling or facsimile) over an ATM network. Voice traffic is encapsulated in a specific AAL encapsulation method for multiplexed voice when voice traffic is sent in ATM.

VoFR Stands for Voice Over Frame Relay. VoFR enables a router to deliver voice traffic (e.g. phone calling or facsimile) over a frame relay network. When voice traffic is sent through frame relay, the voice traffic is encapsulated after being decomposed into segments by using the FRF.12 encapsulation technique to pass the frame relay network.

VoHDLC Stands for Voice over HDLC. Voice over HDLC enables a router to deliver live voice traffic (e.g. phone calling and facsimile) to another router through a serial line.

VoIP Stands for Voice over IP. VoIP is a capability that enables normal telephony voice of the same features, reliability, and voice quality as POTS to deliver over the IP-based

Internet. VoIP enables a router to deliver voice traffic (e.g. phone calling and facsimile) over an IP network. Over VoIP, DSP decomposes voice signals into frames, and a pair of the decomposed frames is grouped. Then, the grouped frames are saved in a voice packet. The voice packet is forwarded by using an IP under the ITU-T standard, H.323.

VPN

Stands for Virtual Private Network. VPN allows you to encrypt entire traffic that moves from a network to another network so that IP traffic can safely move over a public TCP/IP network. On VPN, all data is encrypted in an IP level by using the 'tunneling' technique.

WAN

Stands for Wide-Area Network. WAN is a data communication network that provides services to the users in a wide area and that uses transmission services provided by regular service providers. Examples of WAN include frame relay, SMDS, and X.25.

Compare to: LAN and MAN

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