G.SHDSL Router – AH505

User's Manual

Table of Contents

1. Product Overview

1.1 Preface

The primary objective of this manual is to help network administrator operate AH505 bridge and router product. Strongly committed to user friendly, this manual will guide the users step by step to turn the product up and running in the simplest way ever.

1.2 Overview

With the symmetrical data transmission up to 2.3 Mbps over the ordinary telephone line, SHDSL satisfies the needs of multiple user of small office/home office (SOHO), who needs both bandwidth and permanent data connection. Although SHDSL transmits data over the telephone line, it does not interrupt the voice because it uses different frequency for data transmission. Therefore, the end-users are able to access internet and to talk over the telephone simultaneously.

AH505 is designed to provide user all features needed in the SOHO environment. This product supports multiple virtual channel to connect to different location. Bridge and router features are also supported in AH505.

2. Hardware Installation

2.1 Front Panel LEDs Indicators

There are eight LED indicators on the front panel of AH505. They show the statuses of the device.

The functions of LED indicators are described in the following table:

LED	Color	Status	Meaning
PWR	Orange	Steady Off	The device is on. The device is off.
SYS	Orange	Steady Off	The device is on and functioning properly. The device is booting or Off
DSL	Orange	Steady Blinking Off	The device is Sync Status. The link is synchronizing - this may take several minutes. The device is unplugged or disconnected.
ACT	Orange	Blinking Off	The device is sending or receiving data There's no data sending or receiving.
LN1	Orange	Steady	Link 1 - The LAN connection is successfully established.
LN2	Orange	Steady	Link 2 - The LAN connection is successfully established.
LN3	Orange	Steady	Link 3 - The LAN connection is successfully established.
LN4	Orange	Steady	Link 4 - The LAN connection is successfully established.

2.2 Rear Panel Connectors

The rear panel connectors connecting the device to the LAN and xDSL network are illustrated as follows.

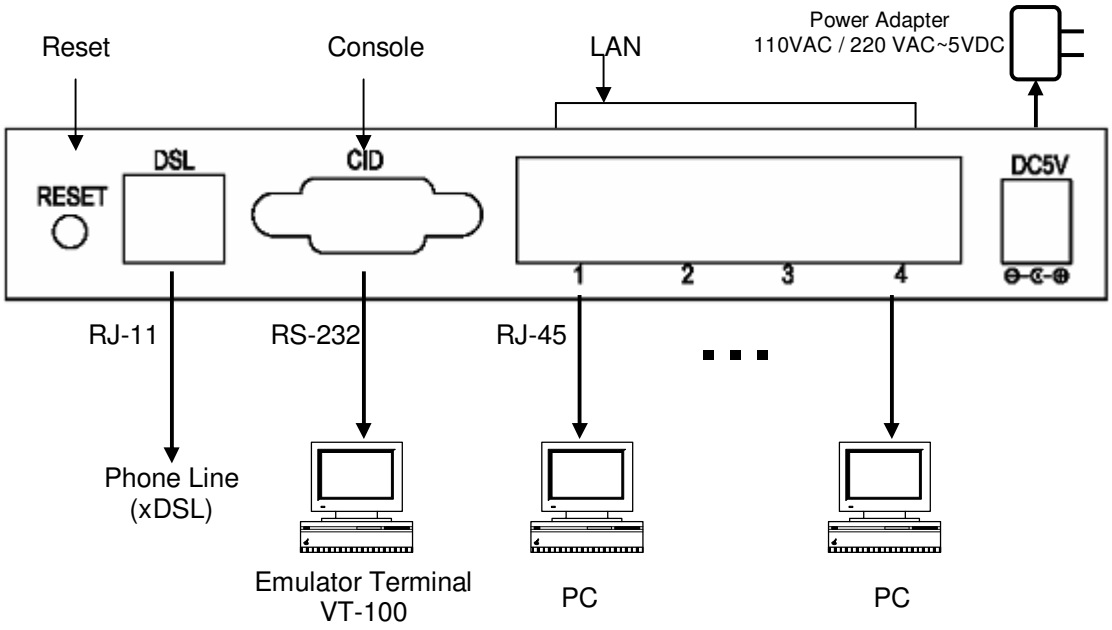


Figure 1 Rear Panel and Installation

2.3 Installation Procedure

Step 1. - Use RJ-11 cable to connect the device to xDSL line.

Step 2. - Use RS-232 cable to connect the console port of the device to serial port of the PC with terminal emulator software installed.

Step 3. - Use RS-45 cable to connect the device and the PC which has the Network Interface Card (NIC) installed. If you want to connect to an external hub, you have to use the RJ-45 cross-over cable.

Step 4. - Plug in the Power adaptor to the DC Power socket of the device, then connect the Power adaptor to the AC outlet.

3. Configuring with CLI

3.1 Console Setup

Step 1: Connect computer to the device through the console port as shown in the figure 1.
Step 2: Open the terminal emulator software (like Hyper-Terminal on Microsoft Windows machine, or " Minicom" on Linux machine), then select the proper COM port for the connection. Set the terminal and port to the following parameters:

- Terminal Mode: VT-100
- Baud rate : 115200 bps
- Data bits : 8
- Parity : None
- Stop bits : 1
- Flow Control : None

Turning on the AH505, then after few seconds of machine initialization, the system management terminal will display the login screen.Details see section 3.3.1.

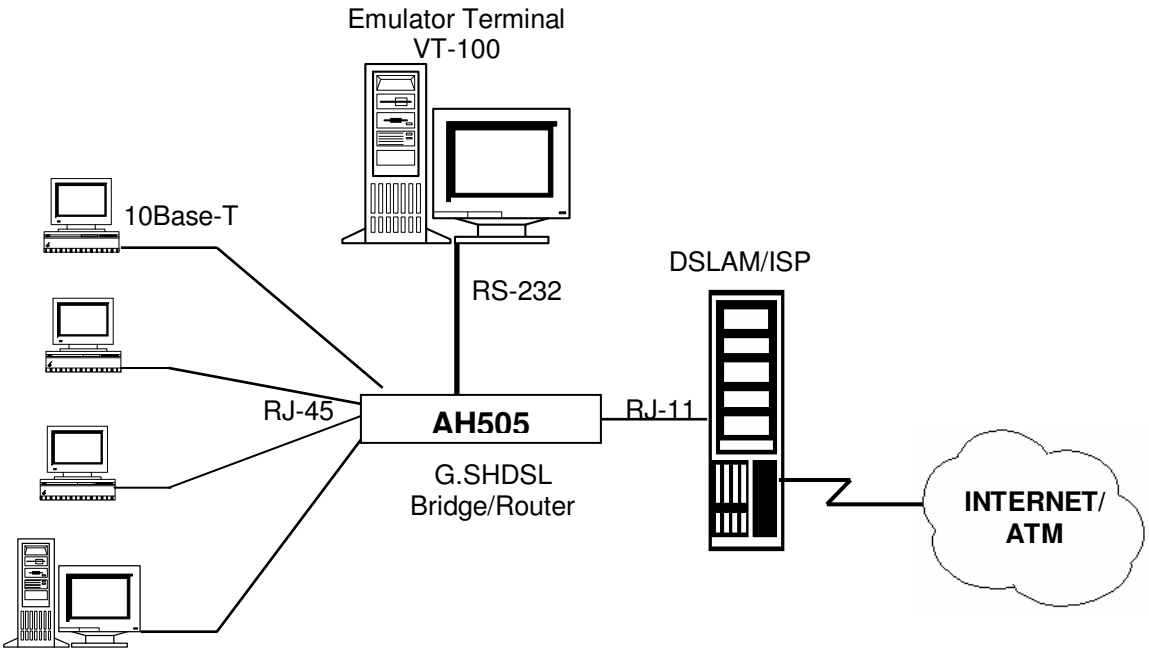


Figure 2 Console Setup

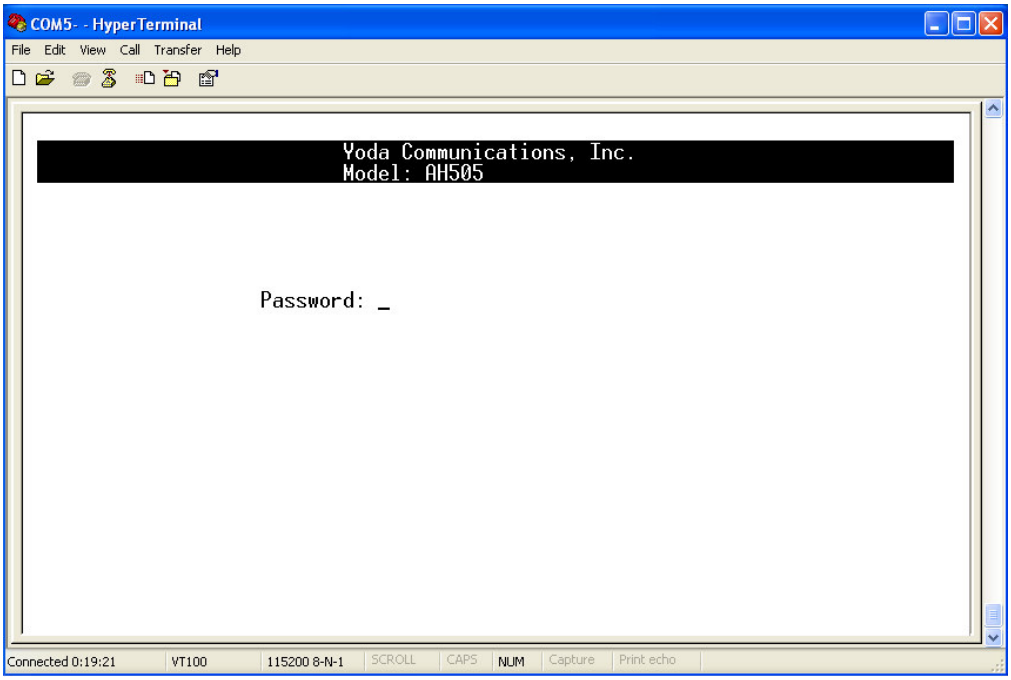
3.2 Menu Overview

You can refer to Main Menu,see section 3.4.1.

3.3 Login

3.3.1 Login

- Default Password: **admin**



3.3.2 Changing System Password

You can change the system password by following steps:

Login to the Main Menu:

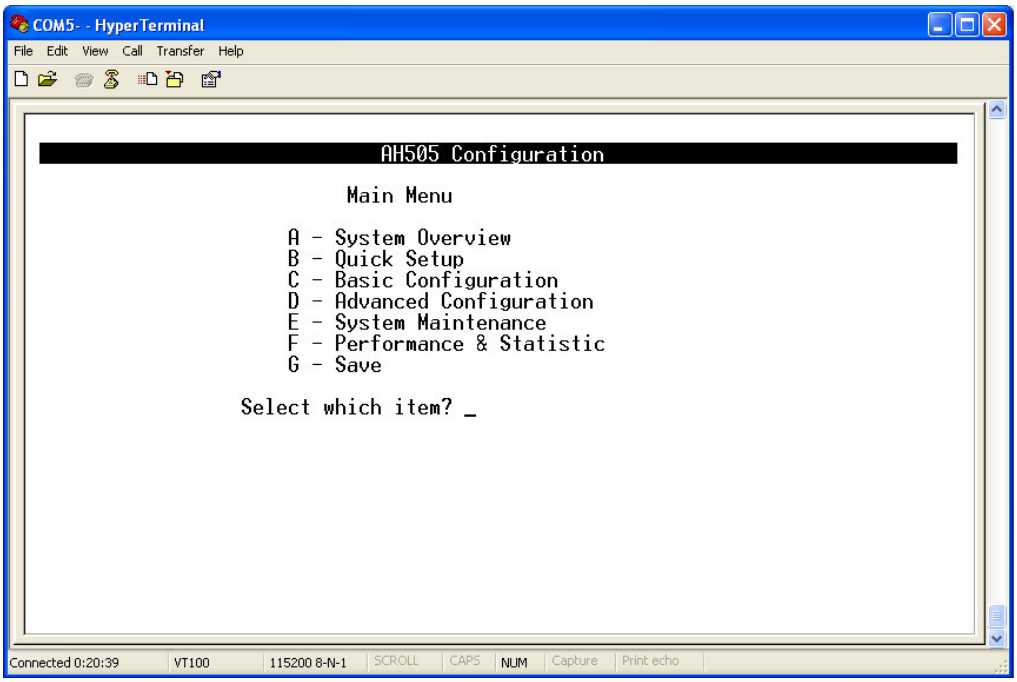
Step 1. - Press **'E'** to open menu 'System Maintenance'
Step 2. - Press **'B'** to open menu 'General Maintenance'
Step 3. - Press **'C'** to enter the old password.
Step 4. - Press **'D'** to enter a new password.
Step 5. - Press **'E'** to re-type the new password to confirm.
Step 6. - Press **'ENTER'** key to update.

NOTE: To cancel the setup, press the key ***'ESC'***.

3.4 Setup

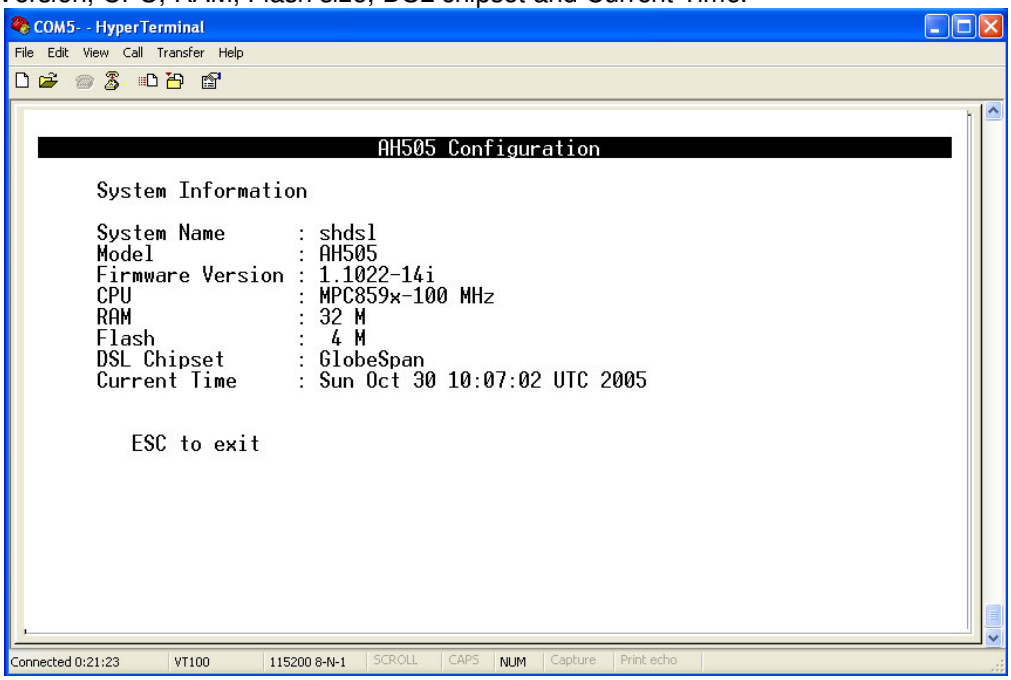
3.4.1 Main Menu

It contains all the submenus of management system terminal in which the configuration of device can be set.



3.4.2 System Overview

From Main Menu, press '**A**' to open menu System Overview.
In this menu, it shows the current system information such as: System Name, Model, Firmware Version, CPU, RAM, Flash size, DSL chipset and Current Time.



3.4.3 System Operation Mode

You can set System Operation Mode: BRIDGE or ROUTER from two different menus:-

a. In menu 'Quick Setup':

From Main Menu,
Step 1: - Press '**B**' - to open menu 'Quick Setup'
Step 2: - Press '**A**' - to select item Operation Mode
Step 3: - Press '**Space Bar**' - to toggle between BRIDGE / ROUTER mode
Step 4: - Press '**Enter**' - to update the system operation mode

b. In menu 'System Setup'

From Main Menu,
Step 1: - Press '**C**' - to open menu 'Basic Configuration'
Step 2: - Press '**A**' - to open menu 'System Setup'
Step 3: - Press '**A**' - to select item Operation Mode
Step 4: - Press '**Space Bar**' - to toggle between BRIDGE / ROUTER mode
Step 5: - Press '**Enter**' - to update the system operation mode

NOTE: You must press '**Enter**' to update system configuration after selecting the operation mode.

3.4.4 Bridge Mode

In Bridge mode, AH505 provides frame forward services between two or more LANs. It forwards frames based on the MAC (Medium Access Control) addresses which is hardware-level of NICs (Network Interface Card)

The operation mode of the system must set to BRIDGE Mode. To change the mode, please see the section 3.4.3. The following sections will help you to do configuration the device in BRIDGE mode by using the system management terminal.

The application of the G.SHDSL Modem in Bridge Mode are illustrated in the following figures

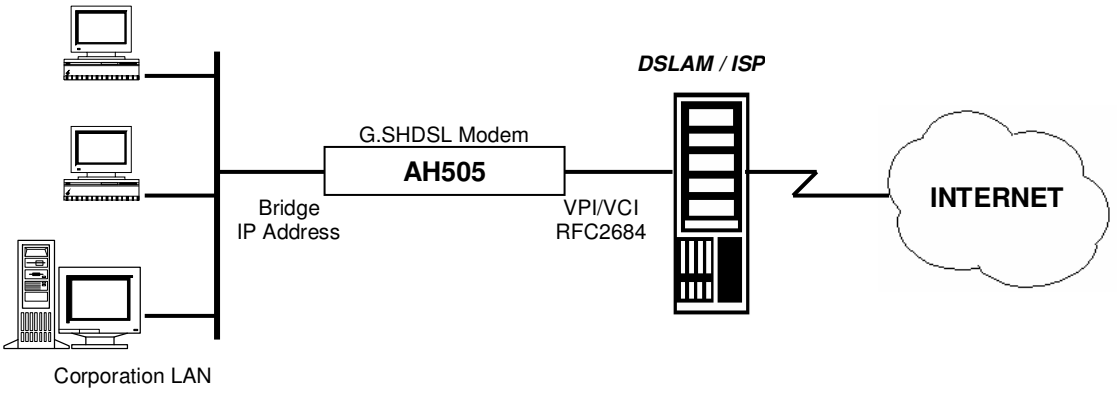


Figure 4 Bridge Mode - Application of AH505: Internet Access

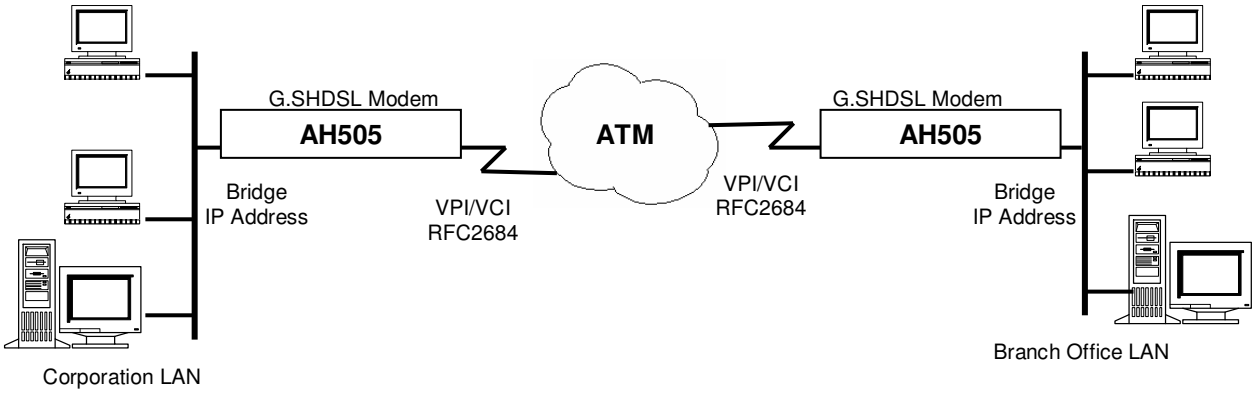
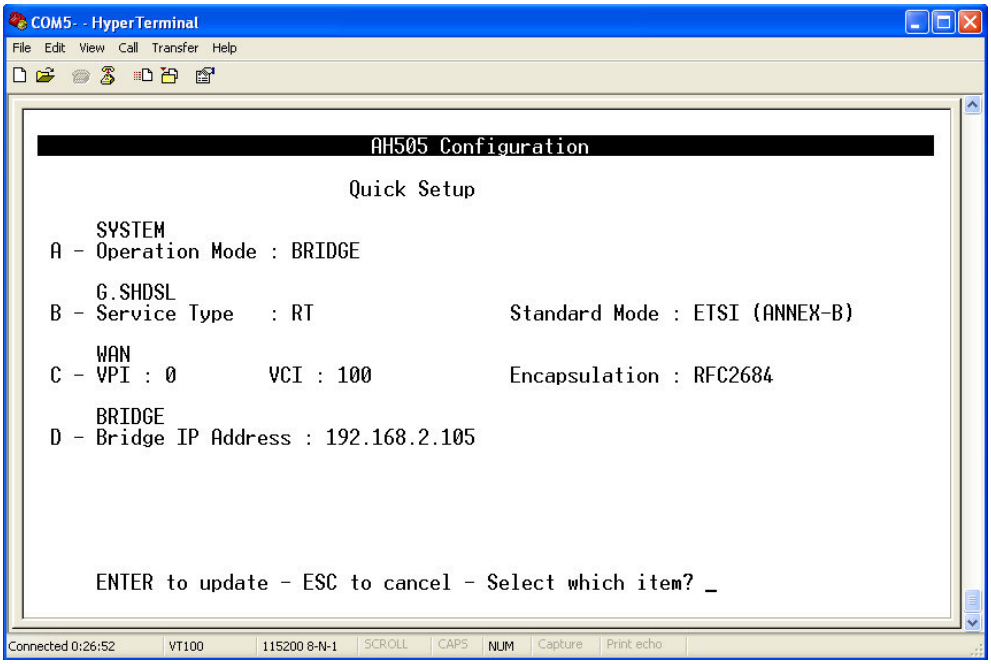


Figure 5 Bridge Mode - Application of AH505: LAN-to-LAN

3.4.4.1 Quick Setup:



From Main Menu, press **'B'** to open menu 'Quick Setup'

Using this setup, the device can be quickly configured and operated properly. The WAN configuration is for the first Virtual Circuit (VC 1) in twelve VC set available in the device.

The details of the items are described in the following table:

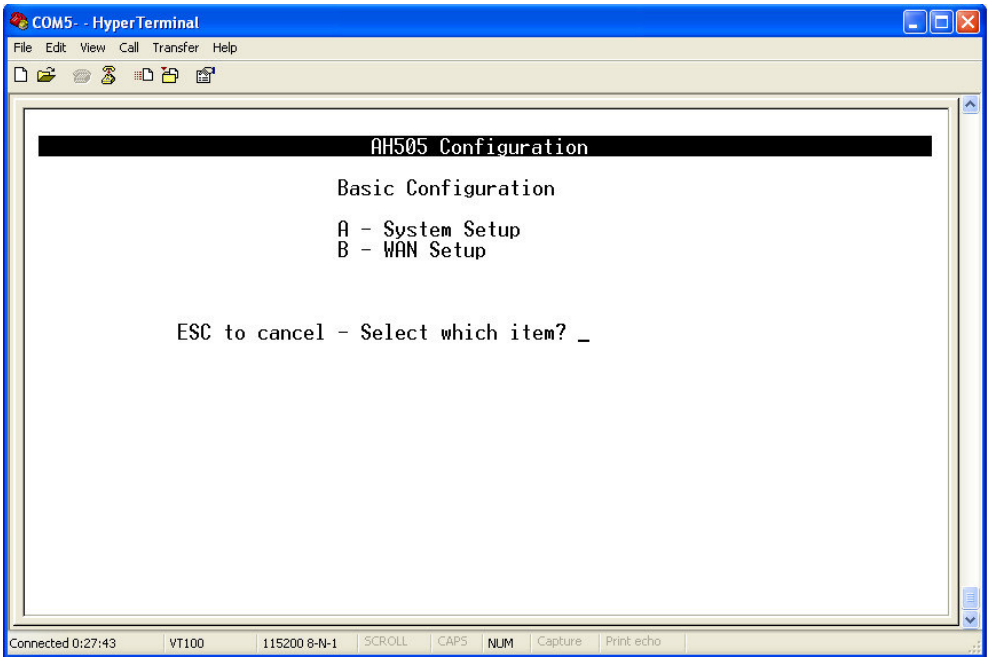
Item	Field Name	Description	Value
A	Operation Mode	System operation mode. Press 'Space Bar' to select the setting.	BRIDGE / ROUTER Default: BRIDGE
B	Service Type	System service type. System can be operated as RT or COT type. Press 'Space Bar' to select the setting.	RT / COT Default: RT
	Standard Mode	Physical standard mode.	ETSI / ANSI Default: ETSI
C	VPI	Virtual Path Identifier, given by ISP.	0 - 16
	VCI	Virtual Channel Identifier, given by ISP.	33 - 4096
D	Bridge IP Address	The device IP address.	i.e '192.168.2.105'

3.4.4.2 Basic Configuration:

From Main Menu,

- Press '**C**' to open menu 'Basic Configuration'.

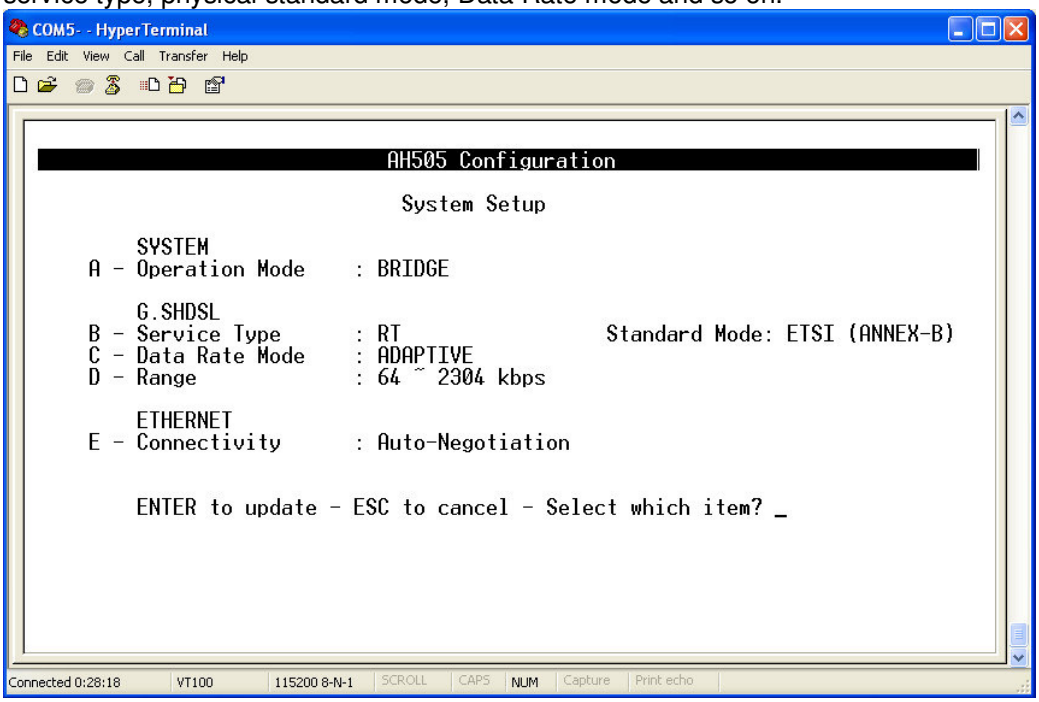
In menu Basic Configuration, the system can be configured in submenus: System Setup and WAN setup.



System Setup

From Main Menu,
- Press **'C'** to open menu 'Basic Configuration'.
- Press **'A'** to open menu 'System Setup'

In menu System Setup, it contains the system related configuration such as: operation mode, service type, physical standard mode, Data Rate mode and so on.



The details of the items are described in the following table:

Item	Field Name	Description	Value
A	Operation Mode	System operation mode. Press 'Space Bar' to select the setting.	BRIDGE / ROUTER Default: BRIDGE
B	Service Type	System service type. System can be operated as RT or COT type. Press 'Space Bar' to select the setting.	RT / COT Default: RT
	Standard Mode	Physical standard mode. Press 'Space Bar' to select the setting.	ETSI / ANSI Default: ETSI
C	Data Rate Mode	Data transferred rate mode. Press 'Space Bar' to select the setting.	ADAPTIVE / FIXED Default: ADAPTIVE
D*	Range	Date rate range. In Adaptive mode, the data rate can be changed in the range 192~2304 kbps. In Fixed mode, it is set in the range 64~2304 kbps. Press 'Space Bar' to select the setting.	ADAPTIVE: 192~2304 FIXED: 64 - 2304
E	ETHERNET Connectivity	Specify the operation mode of LAN port.	Auto-Negotiation/10M half/10M full/100M half/100M full

*Note: * applicable for Data Rate FIXED mode only*

WAN setup

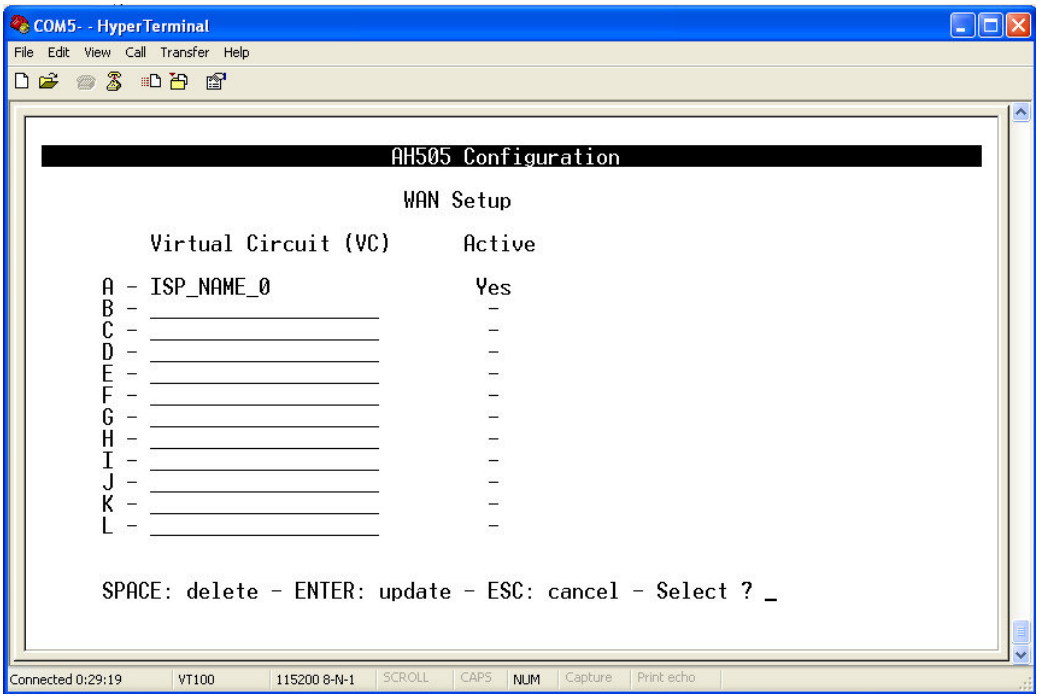
From Main Menu,

- Press **'C'** to open menu 'Basic Configuration'.
- Press **'B'** to open menu 'WAN Setup'

In menu WAN Setup, it shows the list of Virtual Circuits (VCs) and their statuses.

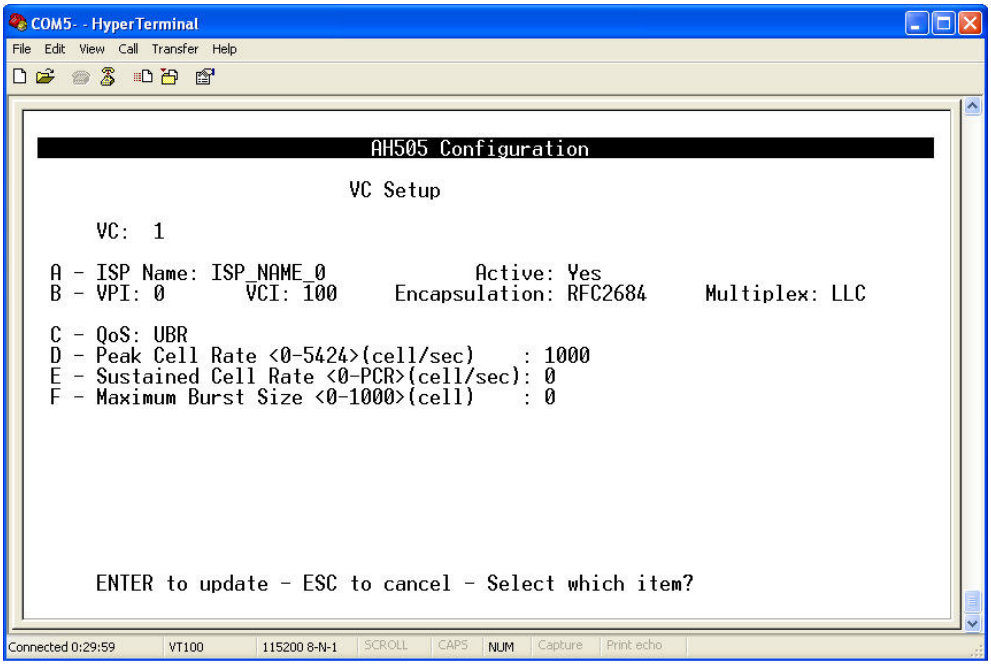
If a VC is already configured then it displays its name as a identification, otherwise it displays a underscore line.

If a VC is already activated, then in the field 'Active', it displays the word 'Yes', otherwise it displays a dash.



1)To setup VC configuration,

- Press an key **'A'** to **'L'** for an appropriate VC, i.e 'A' for VC 1, 'B' for VC 2...



2)To Delete VC configuration,

- Press **'Space Bar'**, then follow the instructions in the bottom line.

The details of the items are described in the following table:

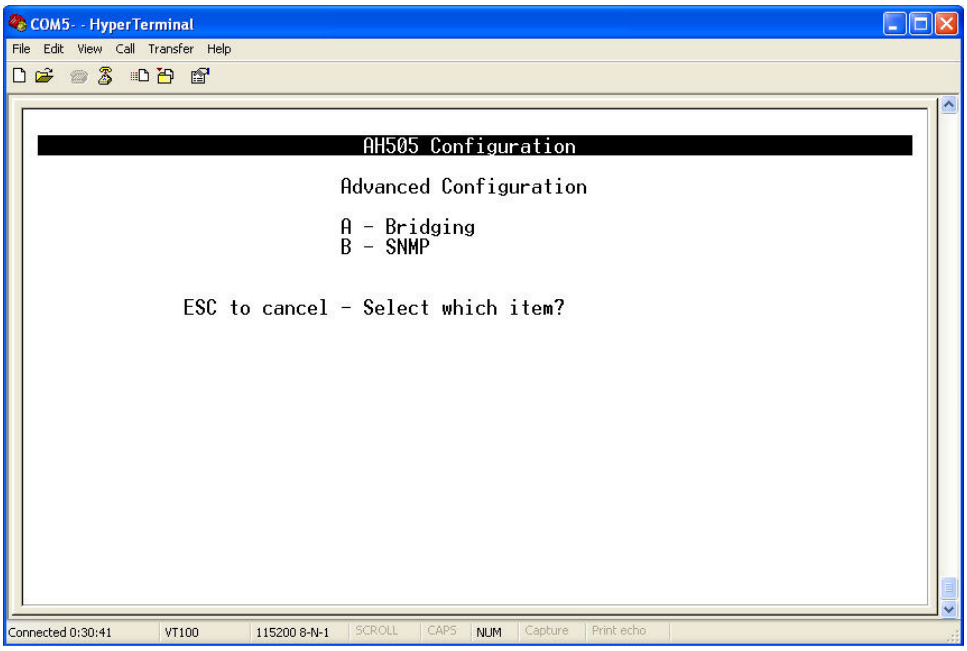
Item	Field Name	Description	Value
A	ISP Name	ISP Name	Max. 18 characters
B	VPI	Virtual Path Identifier, given by ISP	0 - 16
	VCI	Virtual Channel Identifier, given by ISP	33 - 4096
	Encapsulation	Encapsulation type	Always set RFC2684
	Multiplex	Header to identify the protocol that Virtual Circuit being carrying. LLC: Logical Link Control Multiplexing VCMUX : VC-based Multiplexing By press 'Space Bar' to select the setting.	LLC / VCMUX Default: LLC
C	QoS	Quality of Services UBR: Unspecified Bit Rate. CBR: Constant Bit Rate. rt-VBR: Real-Time Variable Bit Rate. nrt-VBR: Non-Real-Time Variable Bit Rate. Press 'Space Bar' to select the setting.	UBR / CBR / rt-VBR / nrt-VBR Default: UBR
D	Peak Cell Rate (PCR)	The maximum transmission rate.	0 - 5424
E	Sustained Cell Rate (SCR)	The Transmission rate in a burst traffic.	0 - PCR
F	Maximum Burst Size (MBS)	Maximum number of transmission cell at the peak rate.	0 - 1000

3.4.4.3 Advanced Configuration:

From Main Menu,

- Press **'D'** to open menu 'Advanced Configuration'.

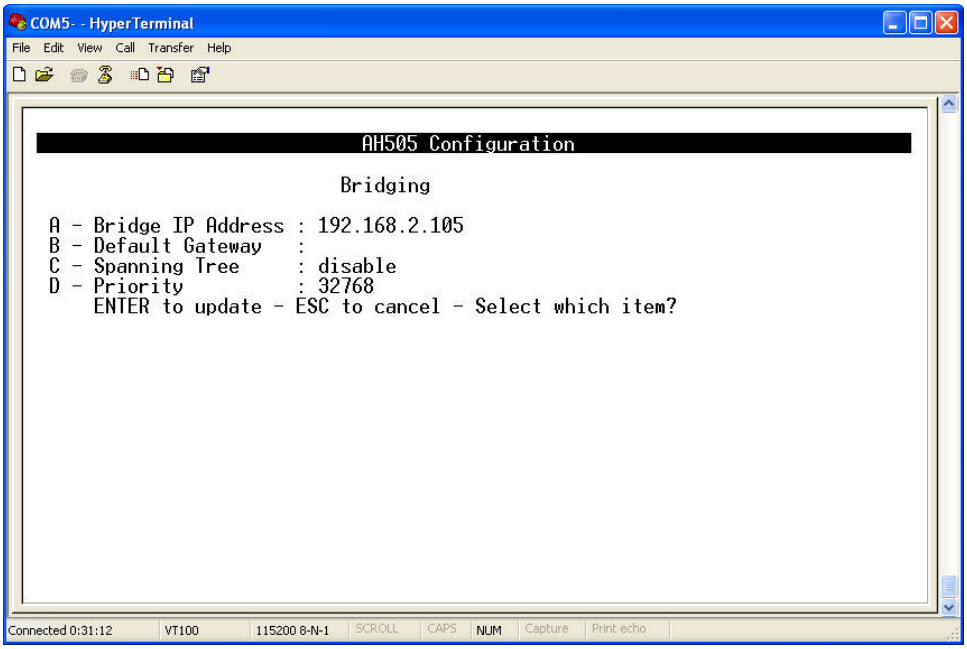
In submenu Bridging and SNMP under menu Advanced Configuration, it will help you to configure the system related information such as: Bridging IP address, Spanning Tree, Priority, SNMP.



Bridging

From Main Menu,

- Press '**D**' to open menu 'Advanced Configuration'.
- Press '**A**' to open menu 'Bridging'.



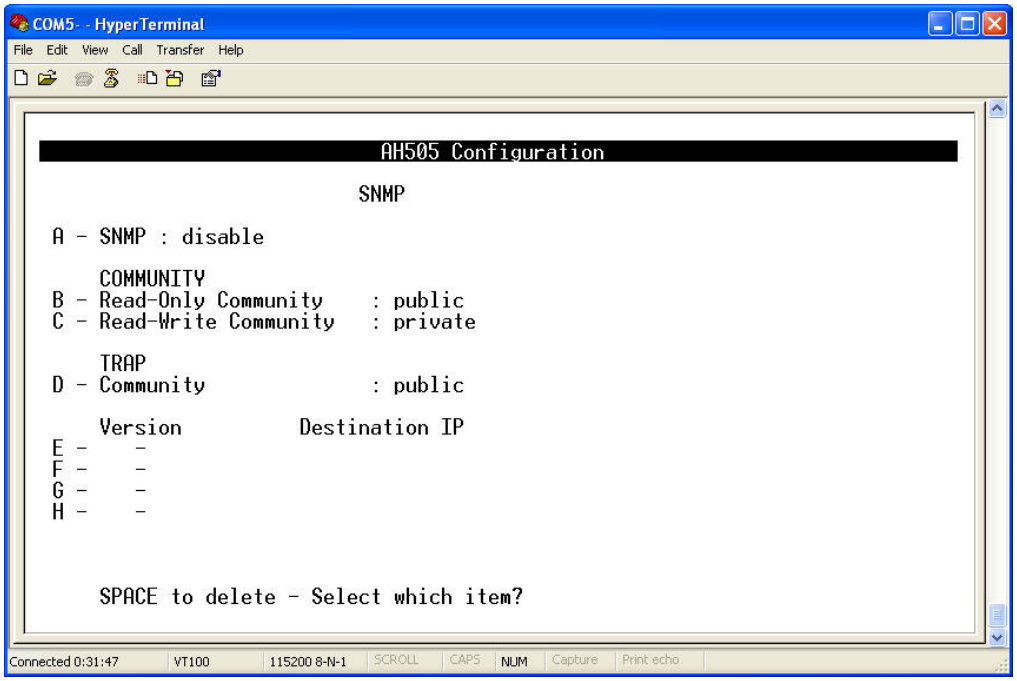
The details of the items are described in the following table:

Item	Field Name	Description	Value
A	Bridge IP Address	Bridge IP Address	i.e: '192.168.2.105'
B	Default Gateway	Specify Default Gateway address of the unit.	None
C	Spanning Tree	Spanning Tree Learning Bridge Protocol. Press 'Space Bar to select the settings.	Disable/Enable Default: Disable
D	Priority	Specify the priority.	0-65535

SNMP

From Main Menu,

- Press **'D'** to open menu 'Advanced Configuration'.
- Press **'B'** to open menu 'SNMP.



The details of the items are described in the following table:

Item	Field Name	Description	Value
A	SNMP	Disable or Enable the SNMP management feature.	Disable/Enable Default: Disable
B	Read-Only Community	Specify the community name of external SNMP Managers allowed with access level of " Read " to the unit's MIB.	Public
C	Read-Write Community	Specify the community name of external SNMP Managers allowed with access level of " Read & write " to the unit's MIB.	Private
D	TRAP Community	Specify the community name of external SNMP Managers allowed to receive the TRAP message.	Public
E-H	Version	Specify TRAP version and destination IP address that the TRAP message is intended for.	None

3.4.5 Router Mode

The operation mode of the system must set to ROUTER Mode. To change the mode, please see the section 3.4.3. The following sections will help you to do configuration the device in Router mode.

The application of the G.SHDSL Modem in Router Mode are illustrated in the following figures

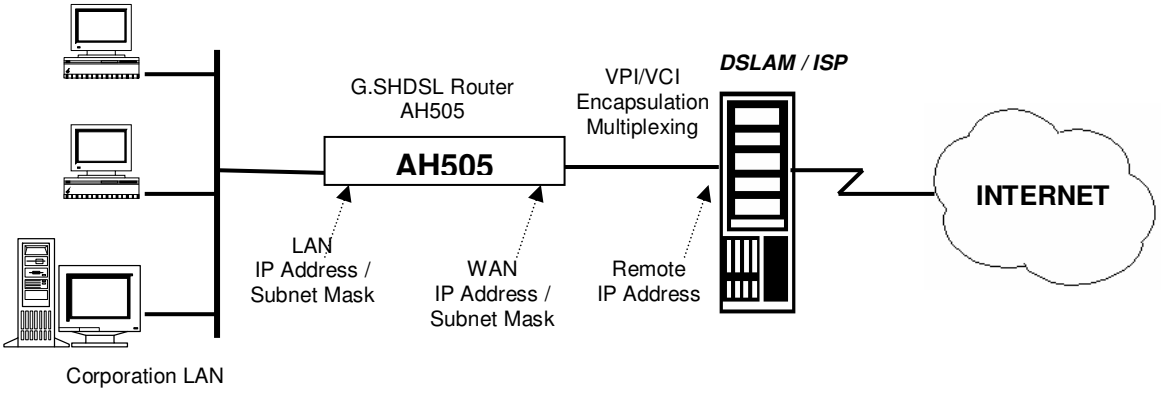


Figure 6 Router Mode - Application of AH505: Internet Access

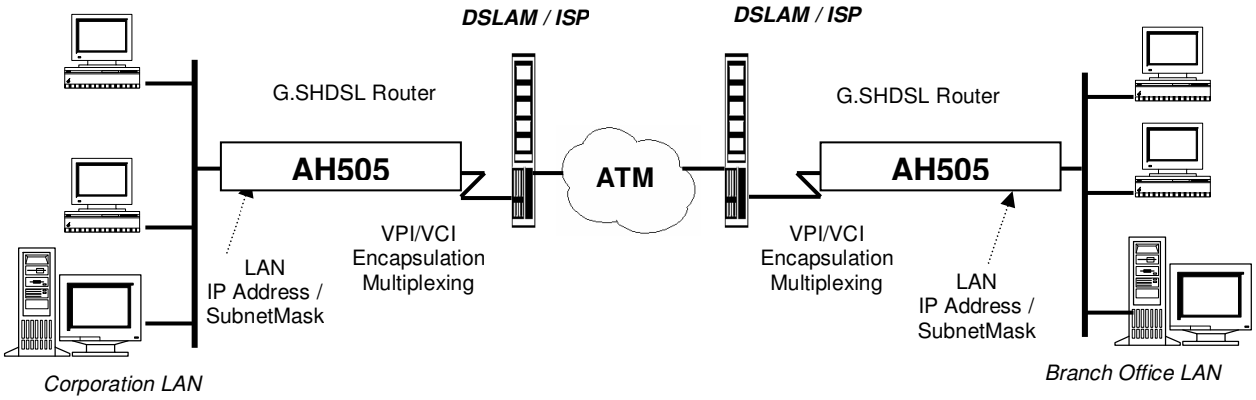
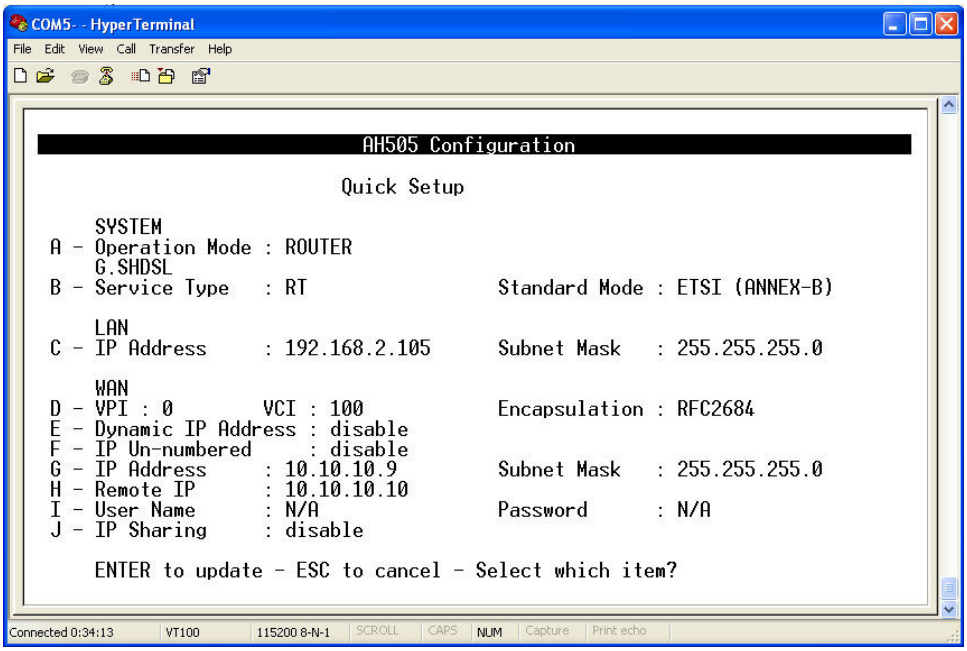


Figure 7 Router Mode - Application of AH505: LAN-to-LAN

3.4.5.1 Quick Setup:

From Main Menu, press '**B**' to open menu 'Quick Setup'.
Using this setup, the device can be quickly configured and operated properly.

Note: The WAN configuration is for the first Virtual Circuit (VC 1) in twelve VC set available in the device.



The details of the items are described in the following table:

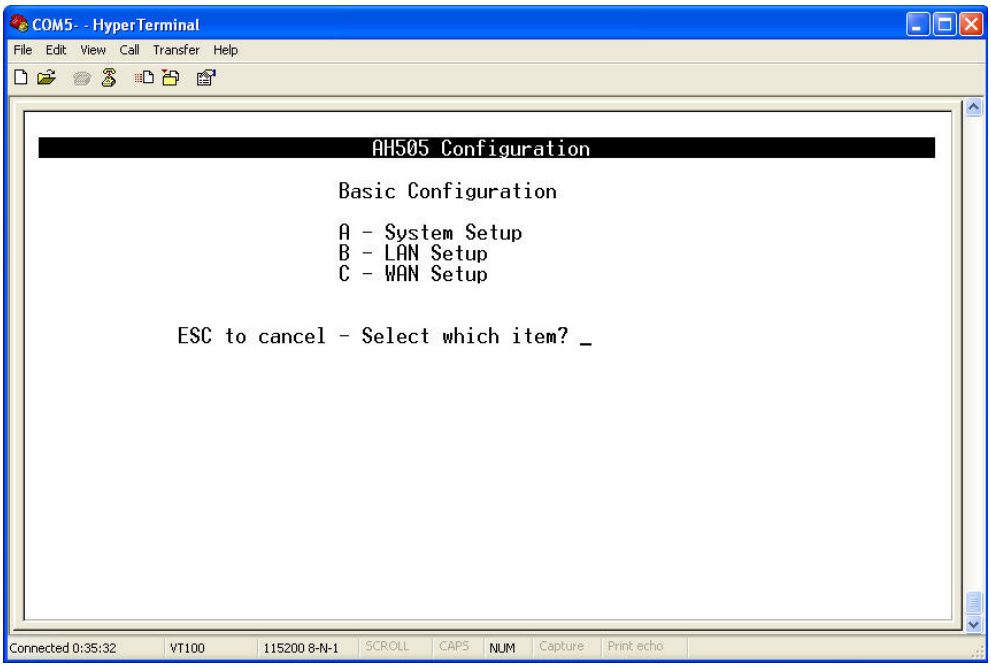
Item	Field Name	Description	Value
A	Operation Mode	System operation mode. Press 'Space Bar' to select the setting.	BRIDGE / ROUTER Default: BRIDGE
B	Service Type	System service type. System can be operated as RT or COT type. Press 'Space Bar' to select the setting.	RT / COT Default: RT
	Standard Mode	Physical standard mode. Press 'Space Bar' to select the setting.	ETSI / ANSI Default: ETSI
C	LAN IP Address	Local IP Address of router.	Default: '192.168.0.1'
	LAN IP Subnet Mask	Local Subnet Mask of router.	Default: '255.255.255.0'
D	VPI	Virtual Path Identifier	0 – 16
	VCI	Virtual Channel Identifier	33 - 4096
	Encapsulation	The encapsulation type is given by ISP. Press 'Space Bar' to select the setting.	RFC2684 / IPoA / PPPoE / PPPoA Default: RFC2684
E	Dynamic IP Address	Press 'Space Bar' to select the setting.	Disable/Enable Default: Disable
F	IP Un-numbered	Press 'Space Bar' to select the setting.	Disable/Enable
G	WAN IP Address	The WAN local IP Address of router, given by ISP	i.e '10.10.10.9'
	WAN IP Subnet Mask	The WAN local IP subnet mask of router, given by ISP	i.e '255.255.255.0'
H	Remote IP Address	The IP Address of DSLAM, given by ISP	i.e '10.10.10.10'
I	User Name	ISP login user name, given by ISP. It is set for the encapsulation type of PPPoE or PPPoA	Max. 18 characters
	Password	ISP login password, given by ISP. It is set for the encapsulation type of PPPoE or PPPoA	Max. 18 characters
J	IP Sharing	IP Sharing or NAT (Network Access Translation). Press 'Space Bar' to select the settings.	Disable / Enable Default: Disable

3.4.5.2 Basic Configuration:

From Main Menu,

- Press **'C'** to open menu 'Basic Configuration'.

In menu Basic Configuration, the system can be configured in individual submenu: System Setup, LAN Setup and WAN setup.

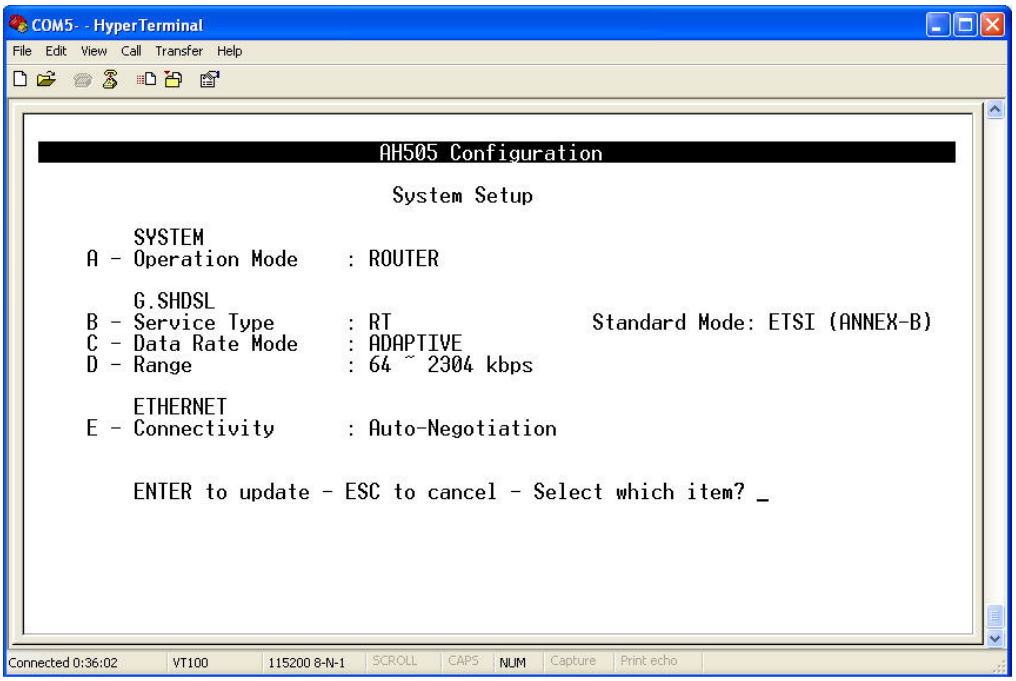


System Setup:

From Main Menu,

- Press **'C'** to open menu 'Basic Configuration'.
- Press **'A'** to open menu 'System Setup'

In menu System Setup, it contains the system related configuration such as: operation mode, service type, physical standard mode, Data Rate mode.



The details of the items are described in the following table:

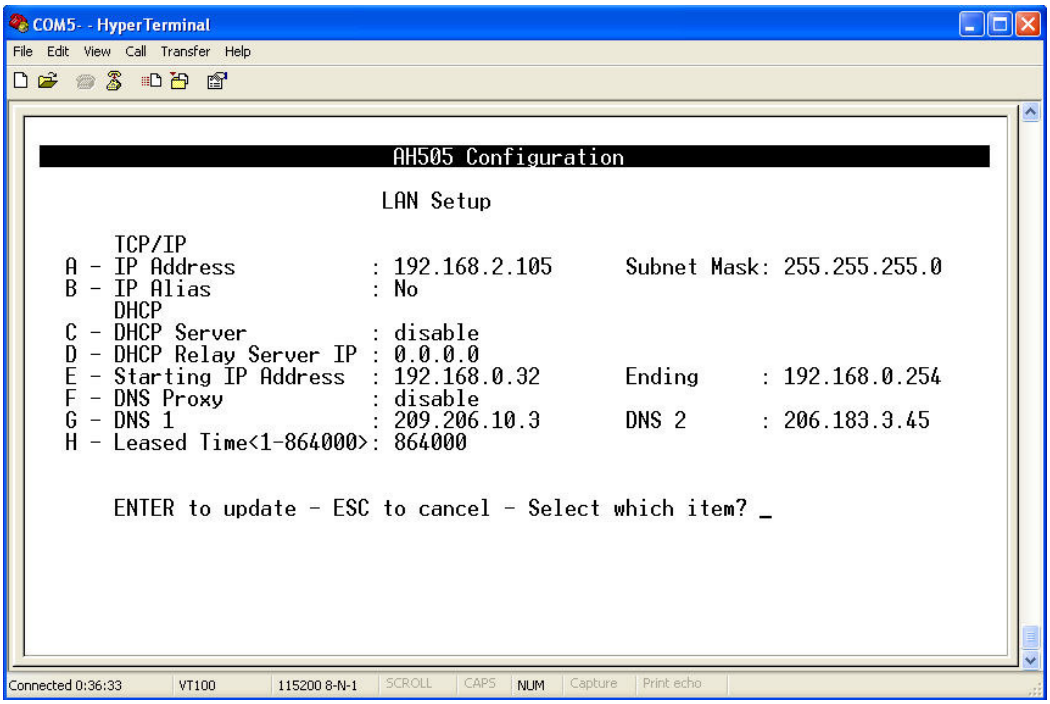
Item	Field Name	Description	Value
A	Operation Mode	System operation mode. Press 'Space Bar' to select the settings.	BRIDGE / ROUTER
B	Service Type	System service type. System can be operated as RT or COT type. Press 'Space Bar' to select the settings.	RT / COT Default: RT
	Standard Mode	Physical standard mode. Press 'Space Bar' to select the settings.	ETSI / ANSI
C	Data Rate Mode	Data transferred rate mode. Press 'Space Bar' to select the settings.	ADAPTIVE / FIXED
D*	Range	Date rate range. In Adaptive mode, the data rate can be changed in the range 192~2304 kbps. In Fixed mode, it is set in the range 64~2304 kbps. Press 'Space Bar' to select the settings.	ADAPTIVE: 192~2304 FIXED: 64 - 2304
E	ETHERNET Connectivity	Specify the operation mode of LAN port.	Auto-Negotiation/10M half/10M full/100M half/100M full

*Note: * applicable for Data Rate FIXED mode only*

LAN Setup

From Main Menu,

- Press '**C**' to open menu 'Basic Configuration'.
- Press '**B**' to open menu 'LAN Setup'



The details of the items are described in the following table:

Item	Field Name	Description	Value
A	LAN IP Address	LAN IP address of router	Default: '192.168.0.1'
	LAN IP Subnet Mask	LAN IP subnet mask of router	Default: '255.255.255.0'
B	IP Alias	IP Alias	No/Yes Default:No
C	DHCP Server	Dynamic Host Configuration Protocol - allows dynamically for any of the connected hosts on a LAN that support DHCP clients. Press 'Space Bar' to select the settings.	Disable / Enable Default:Disable
D	DHCP Relay Server IP	DHCP Relay Server IP	None
E	Starting IP Address	Starting IP Address in the range in which the IP address of hosts on the LAN will be assigned, case of DHCP server set Enable	i.e: '192.168.0.32'
	Ending IP Address	Ending IP Address in the range in which the IP address of hosts on the LAN will be assigned, case of DHCP server set Enable	i.e: '192.168.0.254'
F	DNS Proxy	Enable or Disalbe DNS Proxy	Disable/Enable Default:Disable
G	DNS 1	Domain Name System - Primary DNS server IP address for resolving the symbolic IP (like www.yahoo.com) to numeric IP address (like 216.109.118.74)	i.e: '209.206.10.3'
	DNS 2	Secondary DNS server IP address	i.e: '206.183.3.45'
H	Leased Time	Amount of time that a given IP address will be valid.	1-864000

WAN setup

From Main Menu,

- Press **'C'** to open menu 'Basic Configuration'.
- Press **'C'** to open menu 'WAN Setup'

To setup VC configuration,
- Press an key **'A'** to **'L'** for an appropriate VC, i.e 'A' for VC 1, 'B' for VC 2...
-

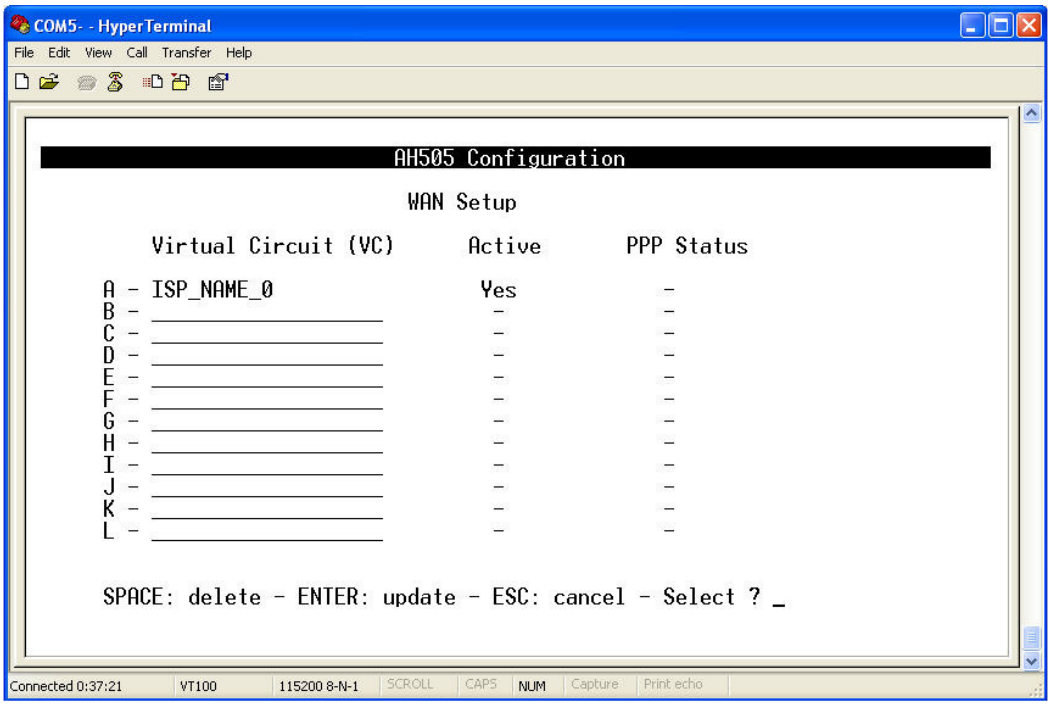
To Delete VC configuration,
- Press **'Space Bar'**, then follow the instruction in the bottom line.

In menu WAN Setup, it shows the list of Virtual Circuits (VCs) and their statuses.

If a VC is already configured then it display its name as a identification, otherwise it displays a underscore line.

If the VC is already activated, then in the field 'Active', it displays the word 'Yes', otherwise it displays a dash.

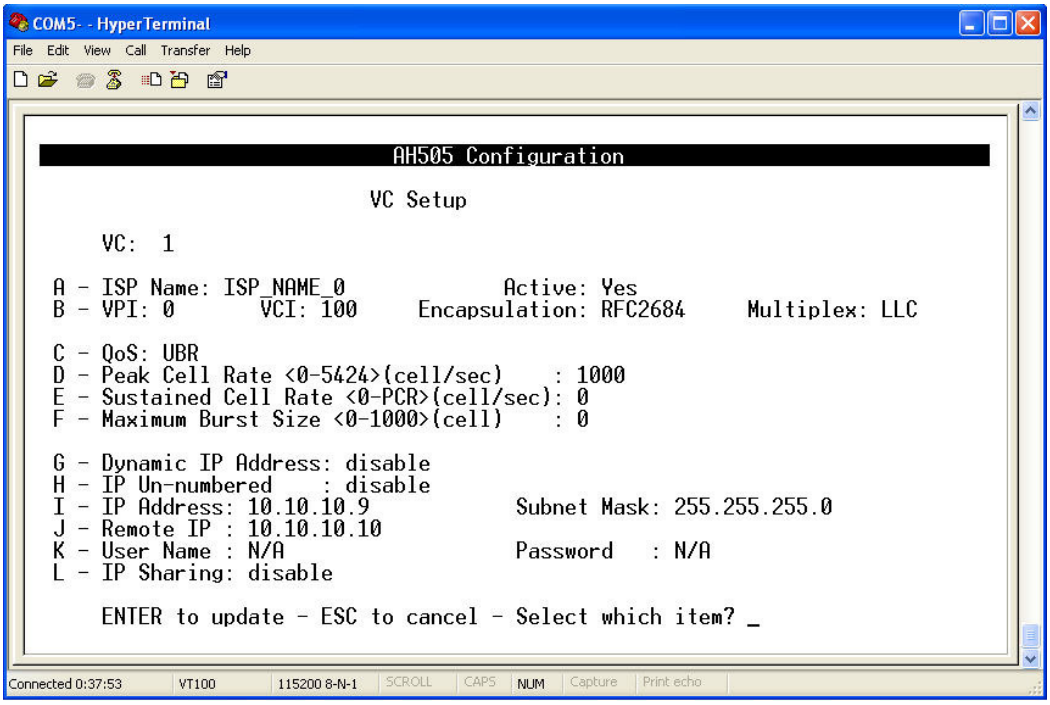
If the VC set with the encapsulation type of PPPoE or PPPoA, then in the field PPP Status it displays the status of PPP connection: 'Disconnected', 'Connecting' or 'Connected'.



VC setup:

From Main Menu,

- Press '**C**' to open menu 'Basic Configuration'.
- Press '**C**' to open menu 'WAN Setup'
- Press '**A**' to '**L**' to open the menu 'VC Setup' for the appropriate VC set.



The detail of item are described in the following table:

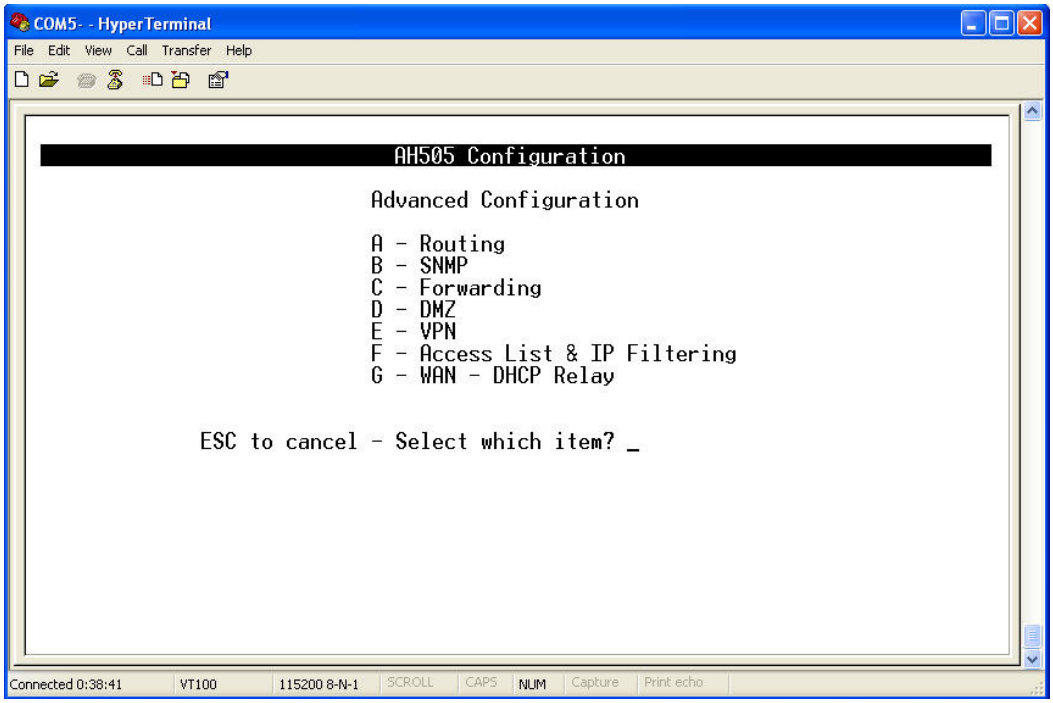
Item	Field Name	Description	Value
A	ISP Name	ISP Name	Max. 18 characters
B	VPI	Virtual Path Identifier, given by ISP	0 – 16
	VCI	Virtual Channel Identifier, given by ISP	33 - 4096
	Encapsulation	The encapsulation type is given by ISP. Press 'Space Bar' to select the setting.	RFC2684 / IPoA / PPPoE / PPPoA Default: RFC2684
	Multiplex	Header to identify the protocol that Virtual Circuit being carrying. LLC: Logical Link Control Multiplexing VCMUX : VC-based Multiplexing By press 'Space Bar' to select the seting.	LLC / VCMUX Default: LLC
C	QoS	Quality of Services UBR: Unspecified Bit Rate. CBR: Constant Bit Rate. rt-VBR: Real-Time Variable Bit Rate. nrt-VBR: Non-Real-Time Variable Bit Rate. Press 'Space Bar' to select the setting.	UBR / CBR / rt-VBR / nrt-VBR Default: UBR
D	Peak Cell Rate (PCR)	The maximum transmission rate.	0 - 5424
E	Sustained Cell Rate (SCR)	The Transmission rate in a burst traffic.	0 - PCR
F	Maximum Burst Size (MBS)	Maximum number of transmission cell at the peak rate.	0 - 1000
G	Dynamic IP Address	Press 'Space Bar' to select the setting.	Disable/Enable Default: Disable
H	IP Un-numbered	Press 'Space Bar' to select the setting.	Disable/Enable
I	WAN IP Address	The WAN local IP Address of router, given by ISP	i.e '123.221.79.2'
	WAN IP Subnet Mask	The WAN local IP subnet mask of router, given by ISP	i.e '255.0.0.0'
J	Remote IP Address	The IP Address of DSLAM, given by ISP	i.e '229.122.79.32'
K	User Name	ISP login user name, given by ISP. It is set for the encapsulation type of PPPoE or PPPoA	Max. 18 characters
	Password	ISP login password, given by ISP. It is set for the encapsulation type of PPPoE or PPPoA	Max. 18 characters
L	IP Sharing	IP Sharing or NAT (Network Access Translation). Press 'Space Bar' to select the settings.	Disable / Enable Default: Disable

3.4.5.3 Advanced Configuration:

From Main Menu,

- Press **'D'** to open menu 'Advanced Configuration'.

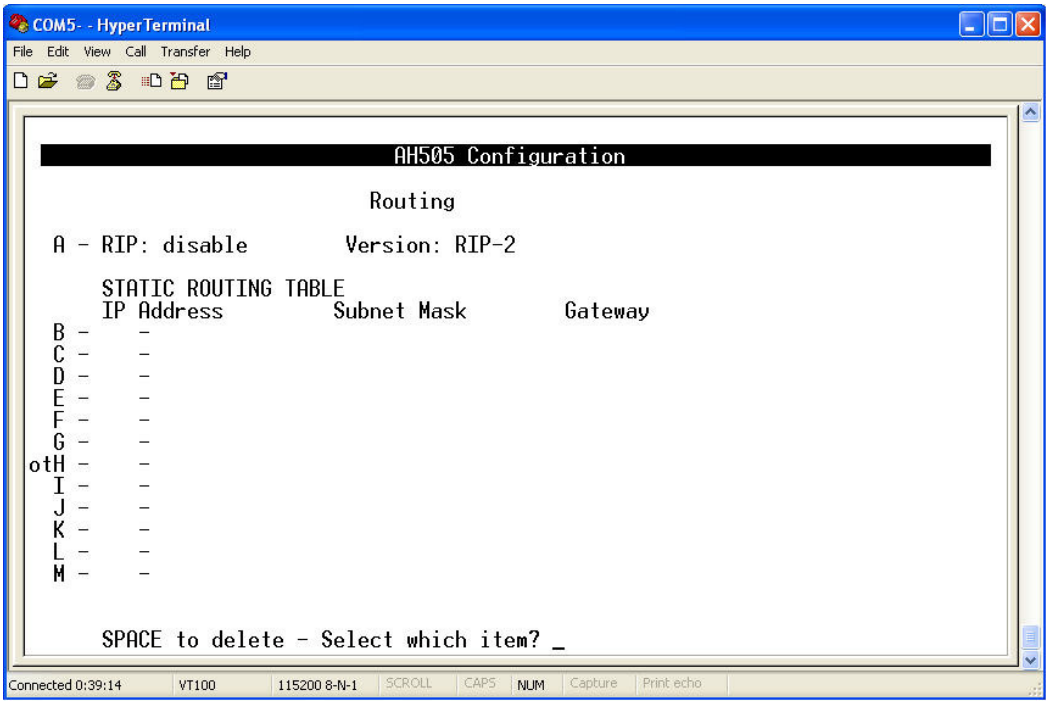
In menu Advance Configuration, the system can be configured in the submenu Routing, SNMP, Forwarding, DMZ ,VPN, Access List &IP Filtering, and WAN-DHCP Relay



Routing

From Main Menu,

- Press '**D**' to open menu 'Advanced Configuration'.
- Press '**A**' to open menu 'Routing'.



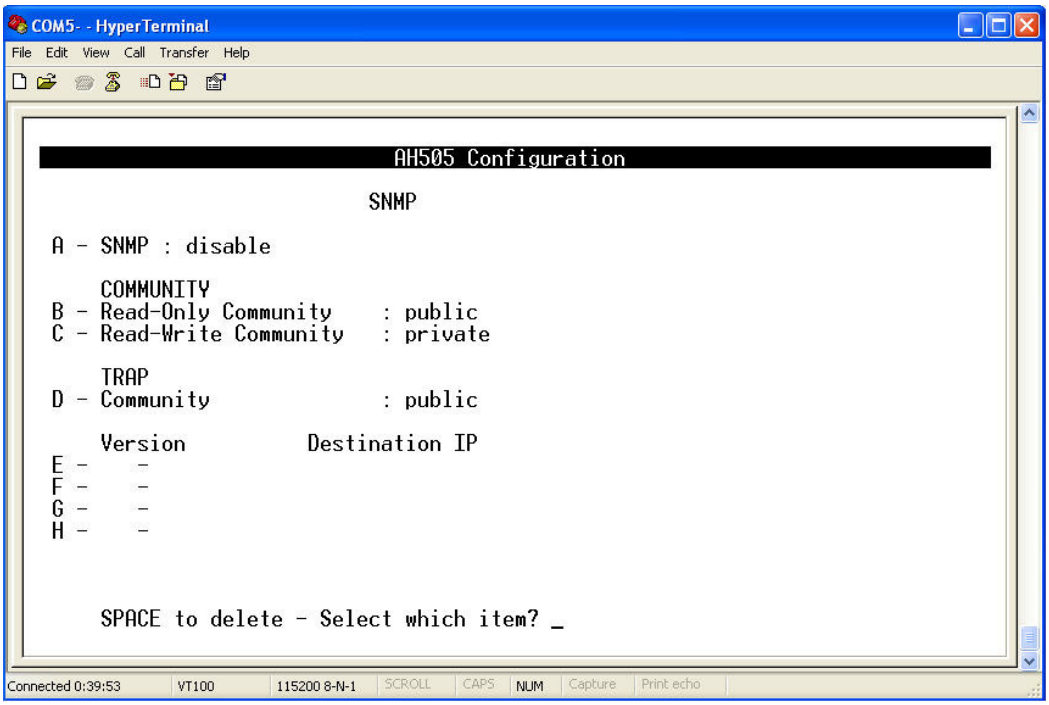
The details of the items are described in the following table:

Item	Field Name	Description	Value
Dynamic Routing	RIP	With Dynamic Routing, you can enable AH505 to automatically adjust to physical changes in the network's topology. Enable or disable the Routing Information Protocol.	Disable / Enable Default: Disable
	Version	RIP version determines the format and broadcasting method of any RIP transmissions by the AH505.	RIP-1 / RIP-2 Default: RIP-2
Static Routing	IP Address	A static route is a pre-configured path that data must traverse to reach a specific host or network. Specify the Destination IP Address for entry in the static routing table.	i.e '10.10.10.50'
	IP Subnet Mask	Specify the Subnet Mask for the network configured in the static routing table.	i.e '255.255.255.0'
	Gateway	Specify the IP address of Gateway.	i.e '192.168.0.1'

SNMP

From Main Menu,

- Press **'D'** to select 'Advanced Configuration' menu.
- Press **'B'** to select '**SNMP**' menu.



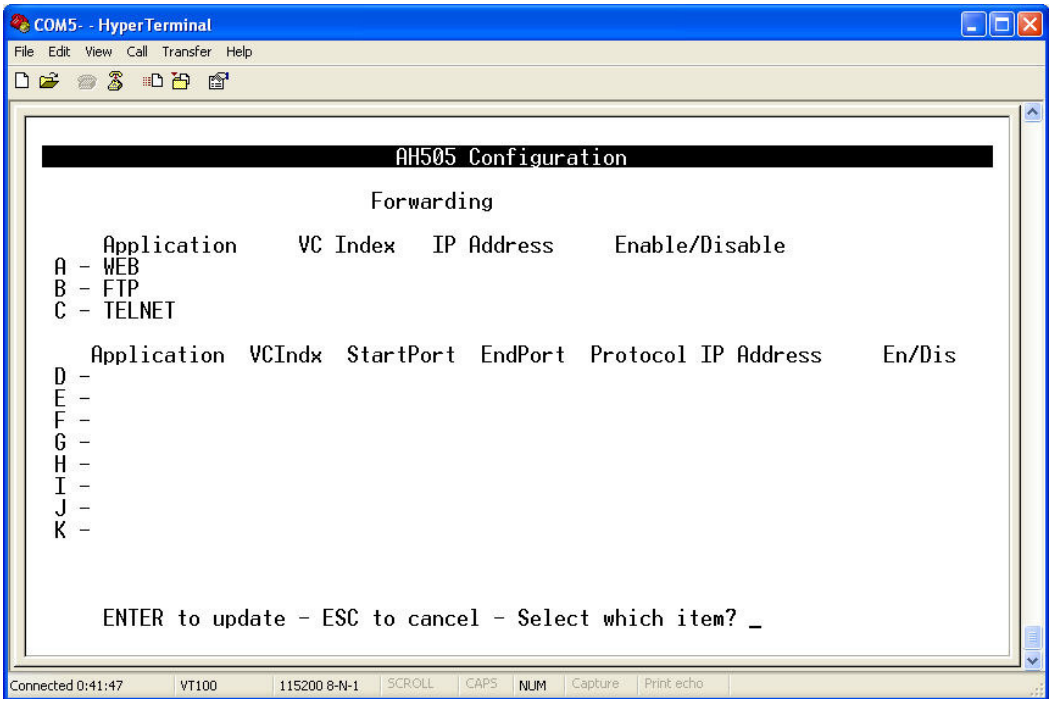
The details of the items are described in the following table:

Item	Field Name	Description	Value
A	SNMP	Disable or Enable the SNMP management feature..	Disable/Enable Default: Disable
B	Read-Only Community	Specify the community name of external SNMP Managers allowed with access level of " Read " to the unit's MIB.	Public
C	Read-Write Community	Specify the community name of external SNMP Managers allowed with access level of " Read & write " to the unit's MIB.	Private
D	TRAP Community	Specify the community name of external SNMP Managers allowed to receive the TRAP message.	Public
E-H	Version	Specify TRAP version and destination IP address that the TRAP message is intended for.	None

Forwarding

From Main Menu,

- Press **'D'** to select 'Advanced Configuration' menu.
- Press **'C'** to select 'Forwarding' menu.

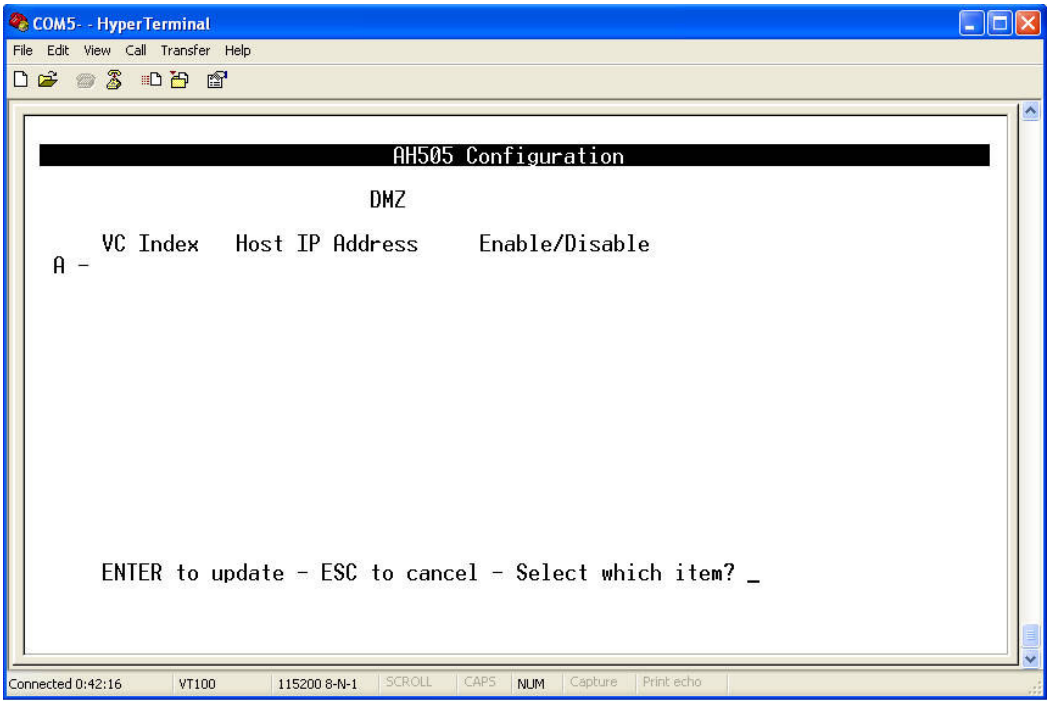


The details of the items are described in the following table:

Item	Field Name	Description	Value
A	WEB	Map WEB server on LAN for external Internet services.	None
B	FTP	Map FTP server on LAN for external Internet services.	None
C	TELNET	Map TELNET server on LAN for external Internet services.	None
D-K		Specify application parameters including VC Index, Port Number, Protocol, IP addresses.	None

DMZ

From Main Menu,
- Press '**D**' to open 'Advanced Configuration' menu.
- Press '**D**' to open 'DMZ' menu.



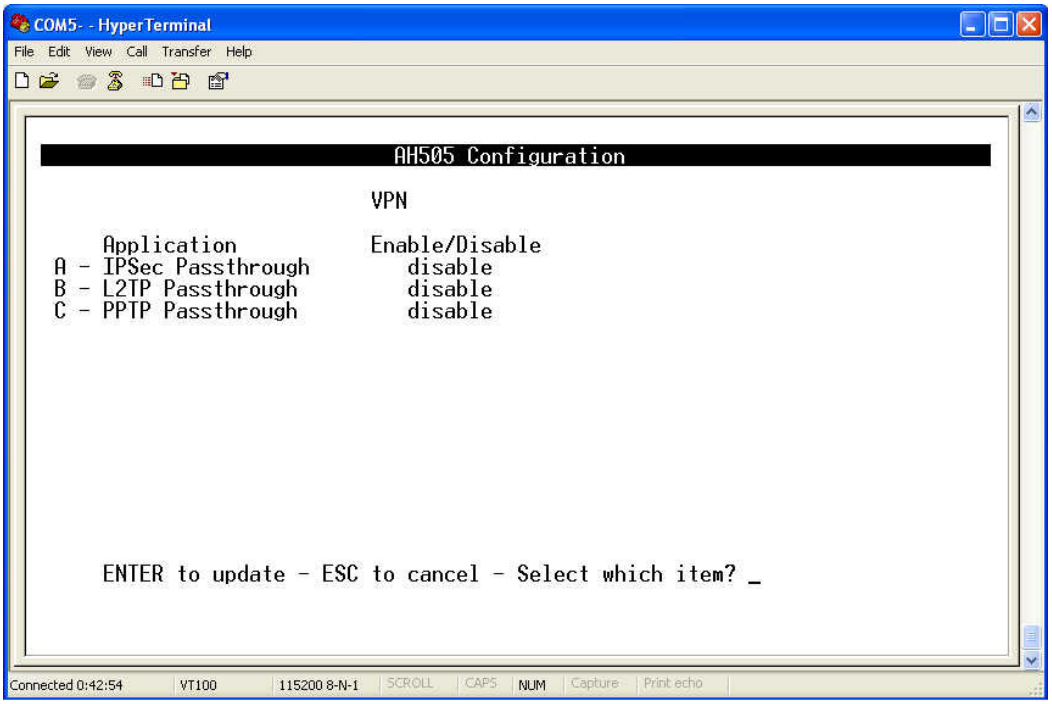
The details of the items are described in the following table:

Item	Field Name	Description	Value
A		Specify DMZ application parameters including VC Index, Host IP addresses	None

VPN

From Main Menu,

- Press **'D'** to open the 'Advanced Configuration' menu.
- Press **'E'** to open the 'VPN' menu.



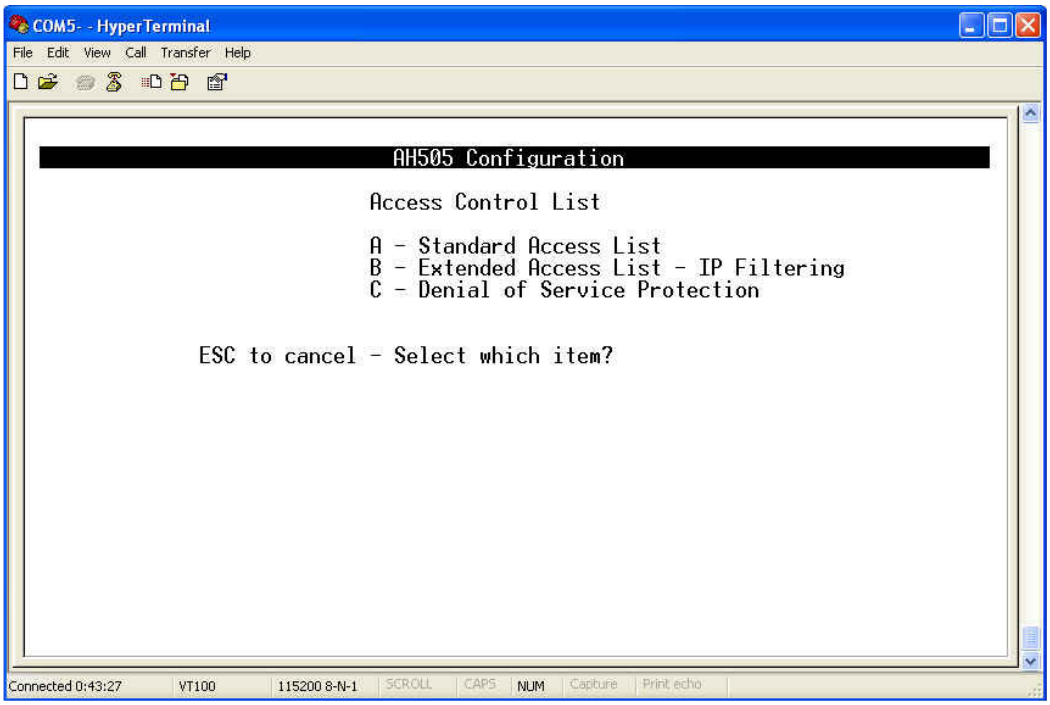
The details of the items are described in the following table:

Item	Field Name	Description	Value
A	IPSec pass through	Enable or disable the pass through of IPSec tunnel between two VPN end points.	Disable/Enable Default:Disable
B	L2TP pass through	Enable or disable the pass through of L2TP tunnel between two VPN end points.	Disable/Enable Default:Disable
C	PPTP pass through	Enable or disable the pass through of PPTP tunnel between two VPN end points.	Disable/Enable Default:Disable

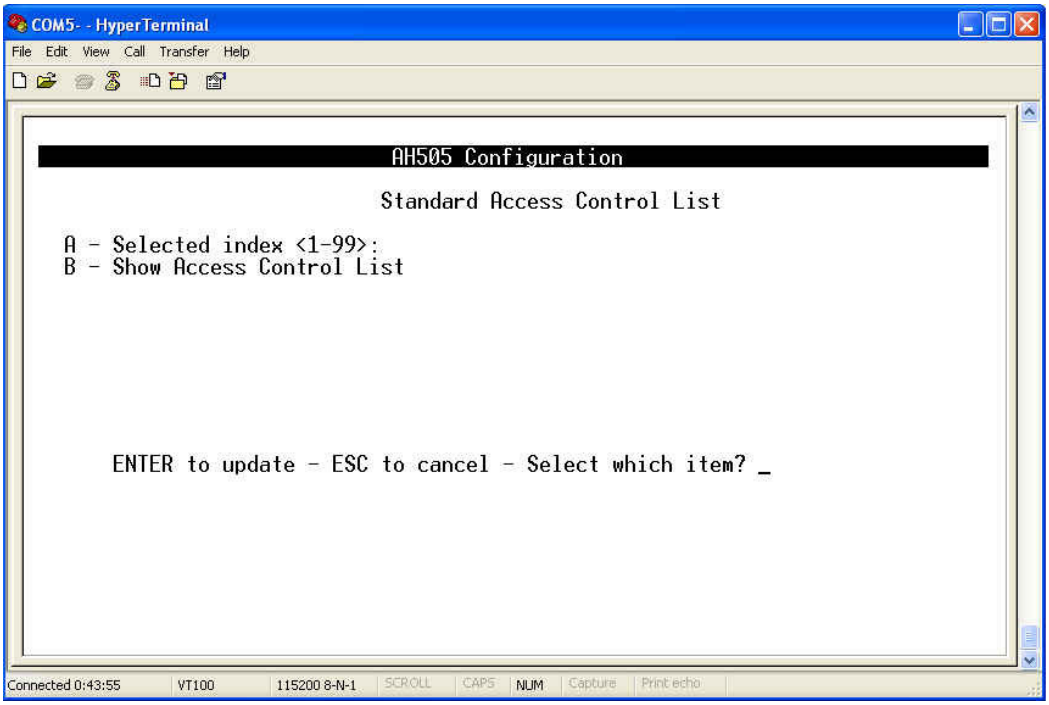
Access List & IP Filtering

From Main Menu,

- Press '**D**' to open the 'Advanced Configuration' menu.
- Press '**F**' to open the 'Access Control List' menu.

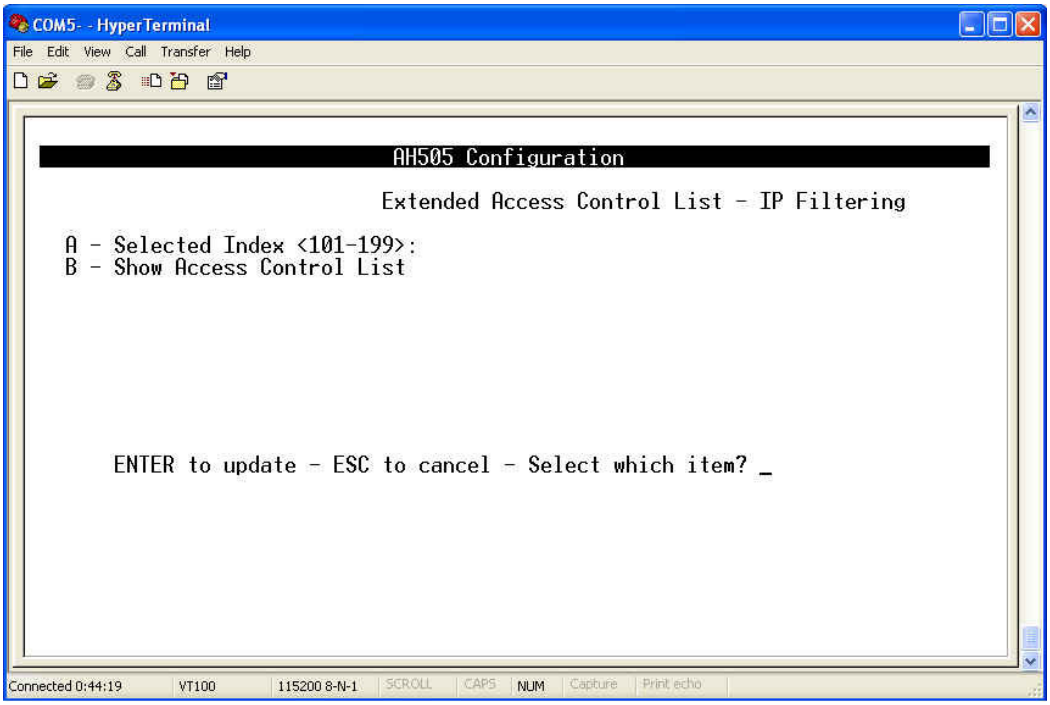


- Press '**A**' to open the 'Standard Access Control List' menu.



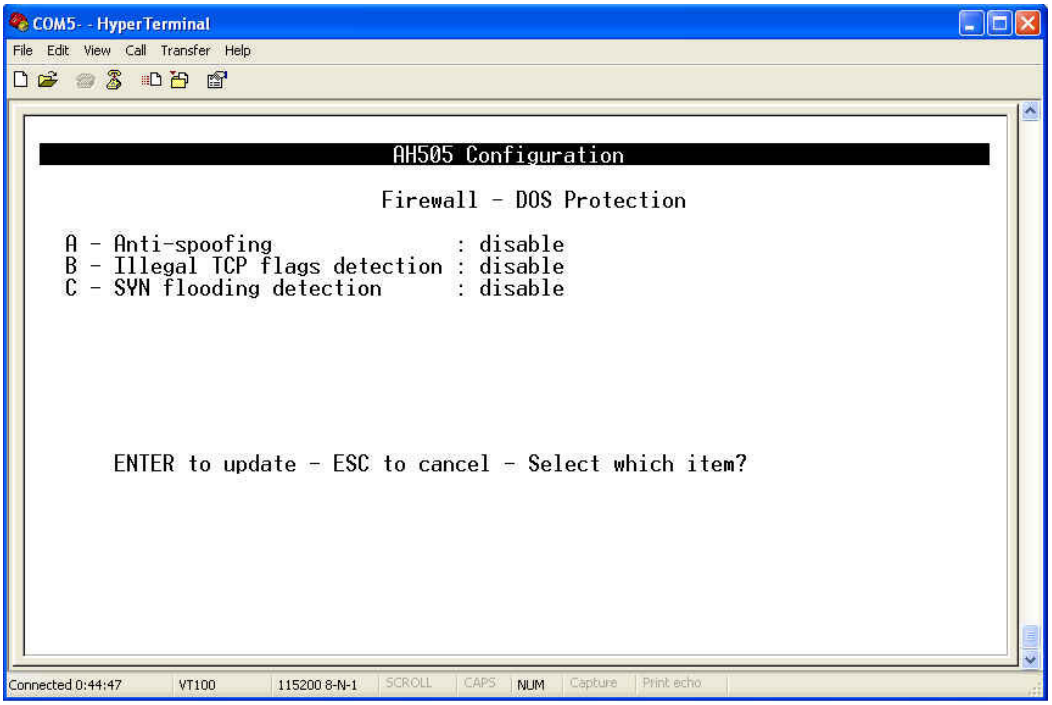
Item	Field Name	Description	Value
A	Select index	Specify a standard ACL number from 1 to 99	None
B	Show ACL	Show all current Access Control List.	None

- Press '**B**' to open the 'Extended Access Control List- IP Filtering' menu.



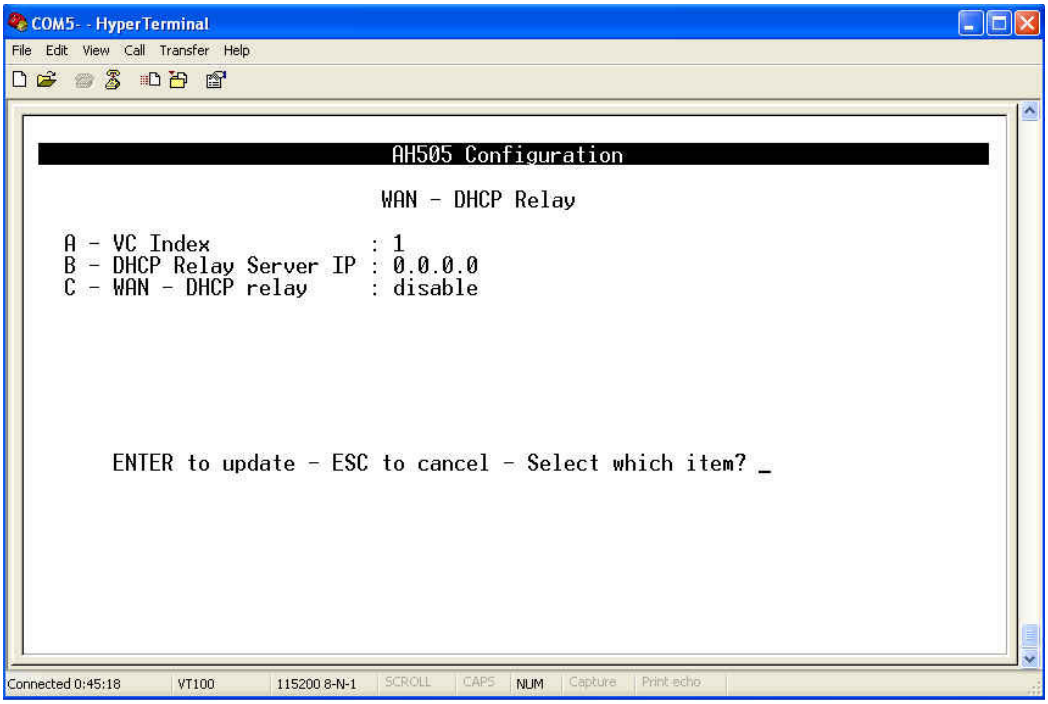
Item	Field Name	Description	Value
A	Select index	Specify a standard ACL number from 101 to 199	None
B	Show ACL	Show all current Access Control List.	None

- Press **'C'** to open the 'Denial of Service Protection' menu.



Item	Field Name	Description	Value
A	Anti-spoofing	Disable/Enable Anti-spoofing	Disable/Enable Default:Disable
B	Illegal TCP flags detection	Disable/Enable Illegal TCP flags detection	Disable/Enable Default:Disable
C	SYN flooding detection	Disable/Enable SYN flooding detection	Disable/Enable Default:Disable

WAN-DHCP Relay

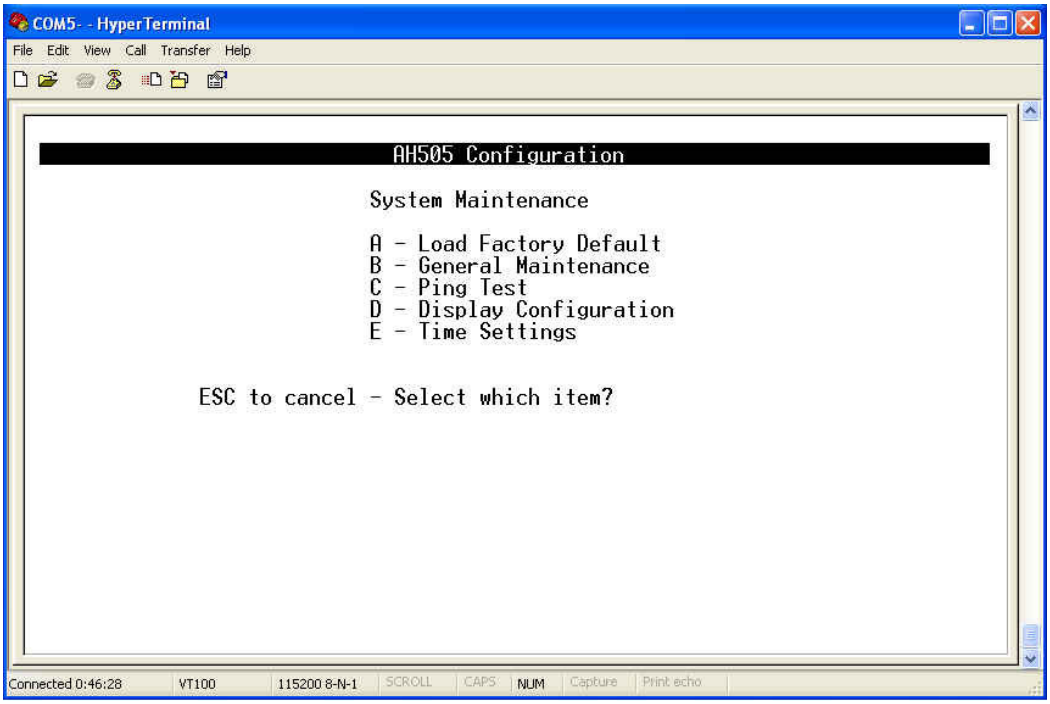


Item	Field Name	Description	Value
A	VC Index	Specify VC Index	None
B	DHCP Relay Server IP	Specify DHCP Relay Server IP	None
C	WAN-DHCP relay	Disable/Enable WAN-DHCP relay	Disable/Enable Default:Disable

3.5 System Maintenance

From Main Menu,

- Press **'E'** to open menu 'System Maintenance'.

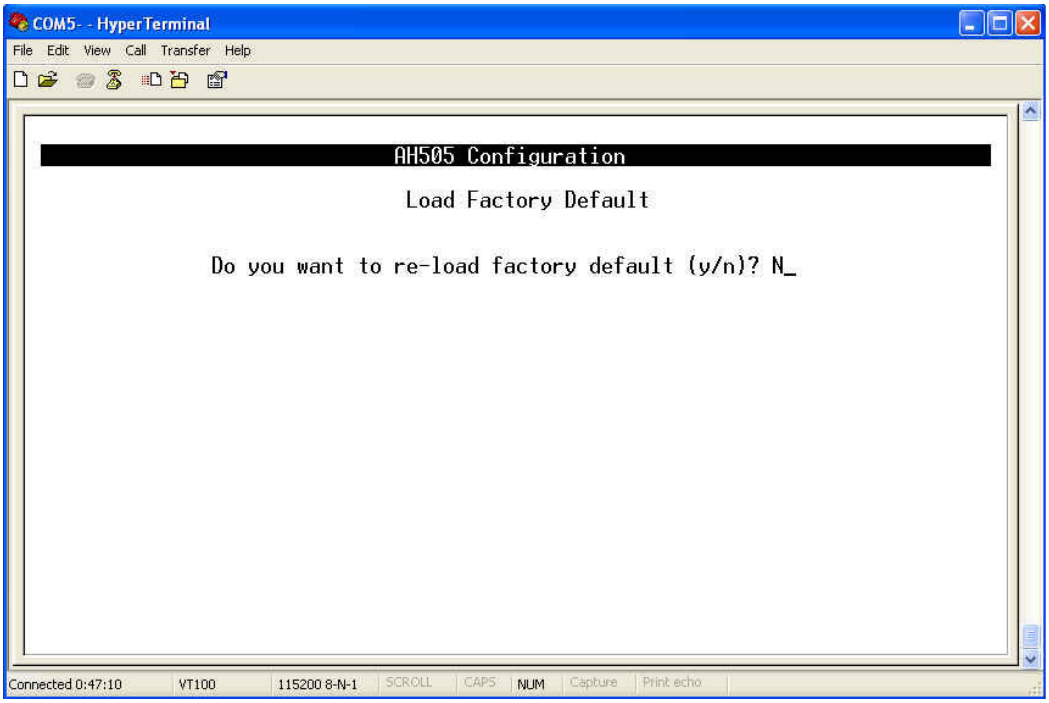


3.5.1 Load Factory Default

From Main Menu,

- Press '**E**' to open the 'System Maintenance' menu.
- Press '**A**' to open the 'Load Factory Default' menu.

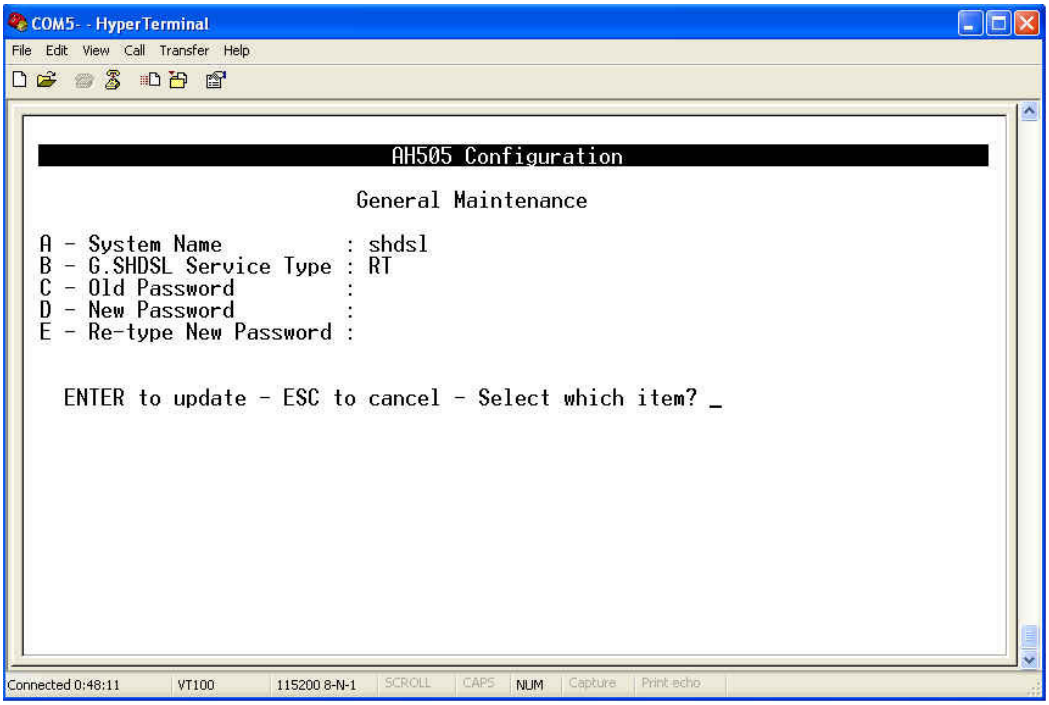
If you type "Y" to re-load factory default, the device will reboot by itself.



3.5.2 General Maintenance

From Main Menu,

- Press **'E'** to open the 'System Maintenance' menu.
- Press **'B'** to open the 'General Maintenance' menu.



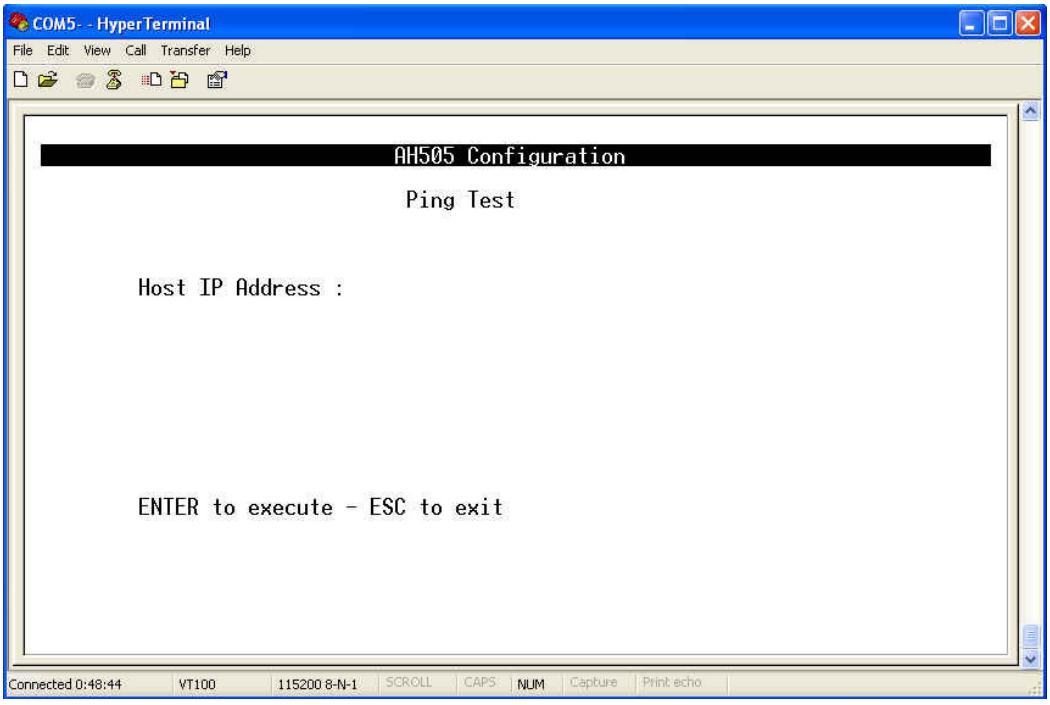
The details of the items are described in the following table:

Item	Field Name	Description	Value
A	System Name	The system name	Max. 18 characters
B	Service Type	System service type. System can be operated as RT or COT type. Press 'Space Bar' to select the setting.	RT / COT Default: RT
C	Old Password	You must input the corrected old password before set new password.	Max. 18 characters
D	New Password	The new password	Max. 18 characters
E	Re-type New Password	It must be exactly the same new password in the item 'D'	Max. 18 characters

3.5.3 Ping Test

From Main Menu,

- Press **'E'** to open the 'System Maintenance' menu.
- Press **'C'** to open the 'Ping Test' menu.



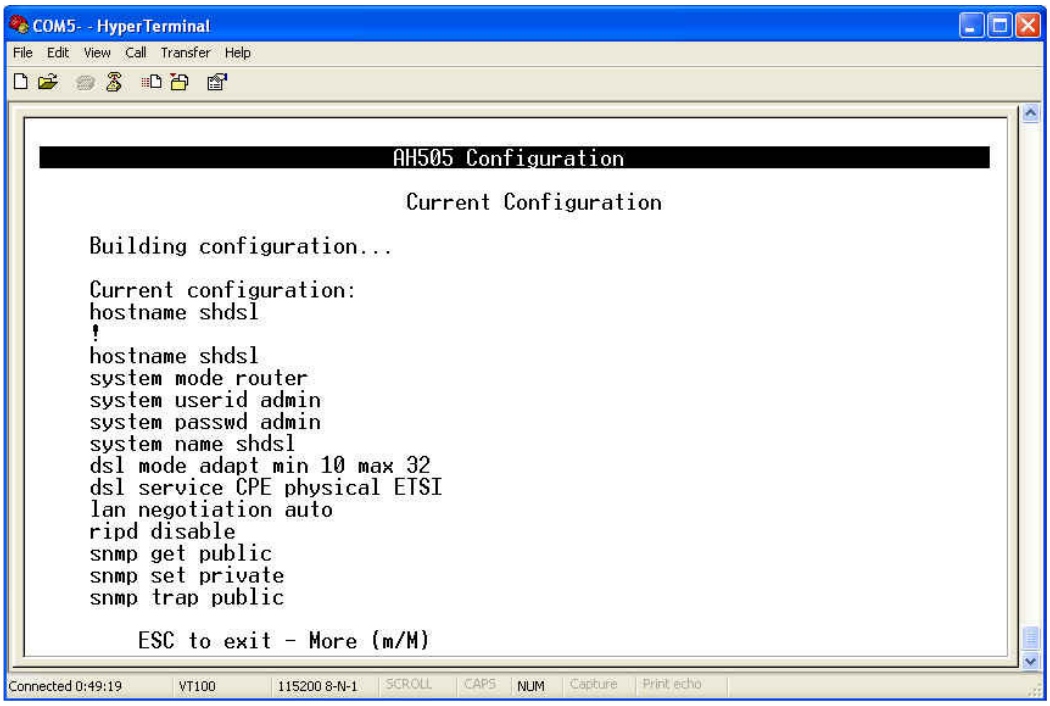
Note: If the test is successful then it will display a message: ' <Host IP> is alive! '. Otherwise it will display a message "Network is unreachable" or "No response".

3.5.4 Display Configuration

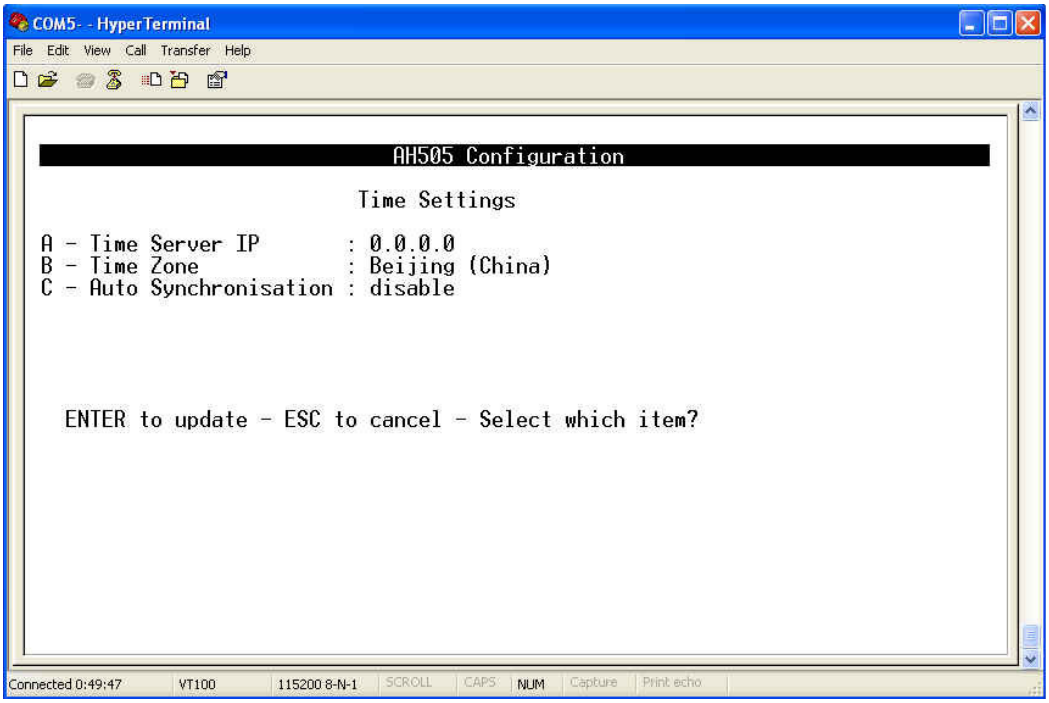
From Main Menu,

- Press **'E'** to open the 'System Maintenance' menu.
- Press **'D'** to open the 'Display Configuration' menu

Press "m" or "M" to see more information



3.5.5 Time Settings



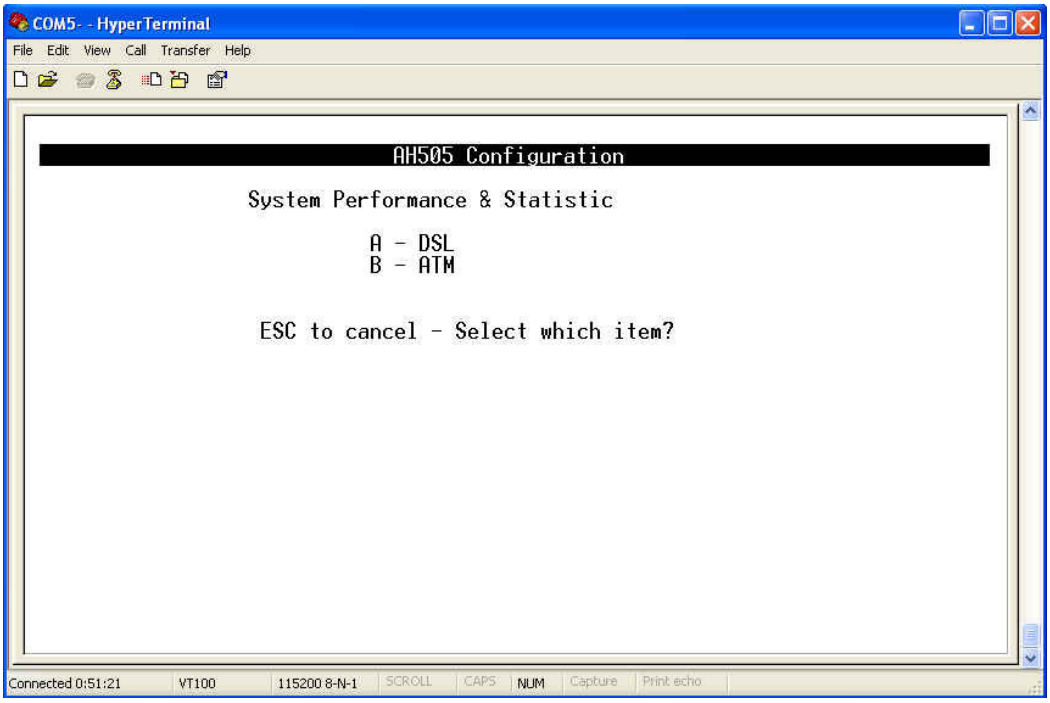
Item	Field Name	Description	Value
A	Time Server IP	Specify Time Server IP	None
B	Time Zone	Specify Time Zone	None
C	Auto Synchronisation	Disable/Enable Auto Synchronisation	Disable/Enable Default:Disable

3.6 Performance and Statistic

From Main Menu,

- Press **'F'** to open menu 'Performance & Statistic'.

In menu 'Performance & Statistic', you can test the performance of the DSL line and the ATM interfaces which are already setup and activated.

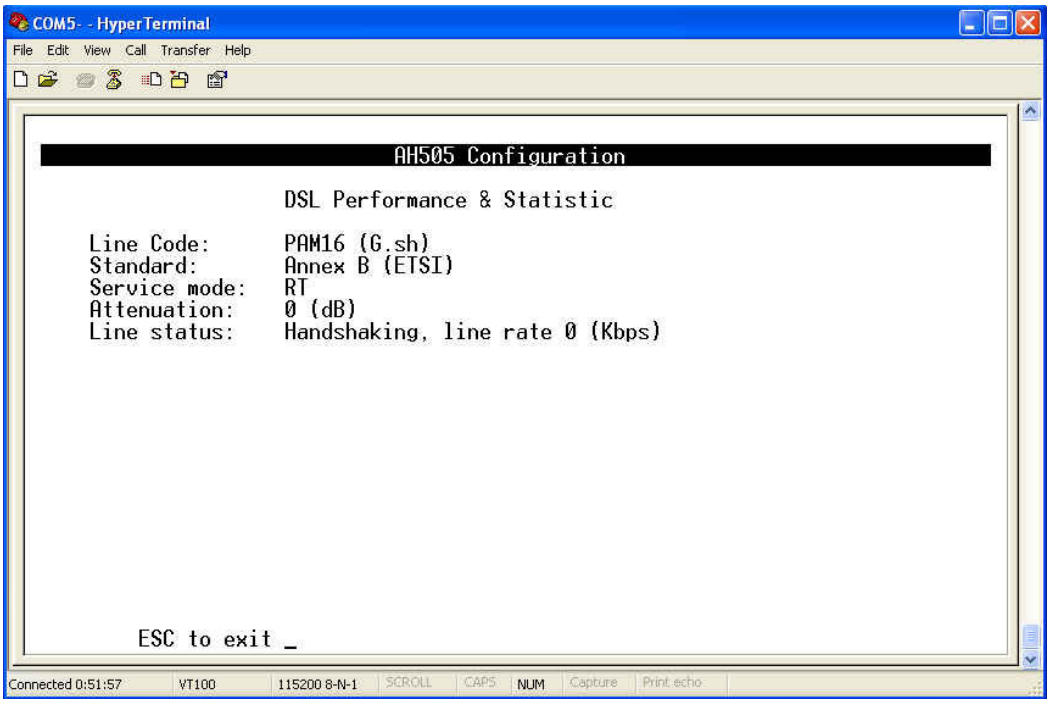


3.6.1 DSL

From Main Menu,

- Press **'F'** to open the 'Performance & Statistic' menu.
- Press **'A'** to open the 'DSL Performance & Statistic' menu.

And you can see the information of Line Code, Standard, Service mode, Attenuation, and Line Status.

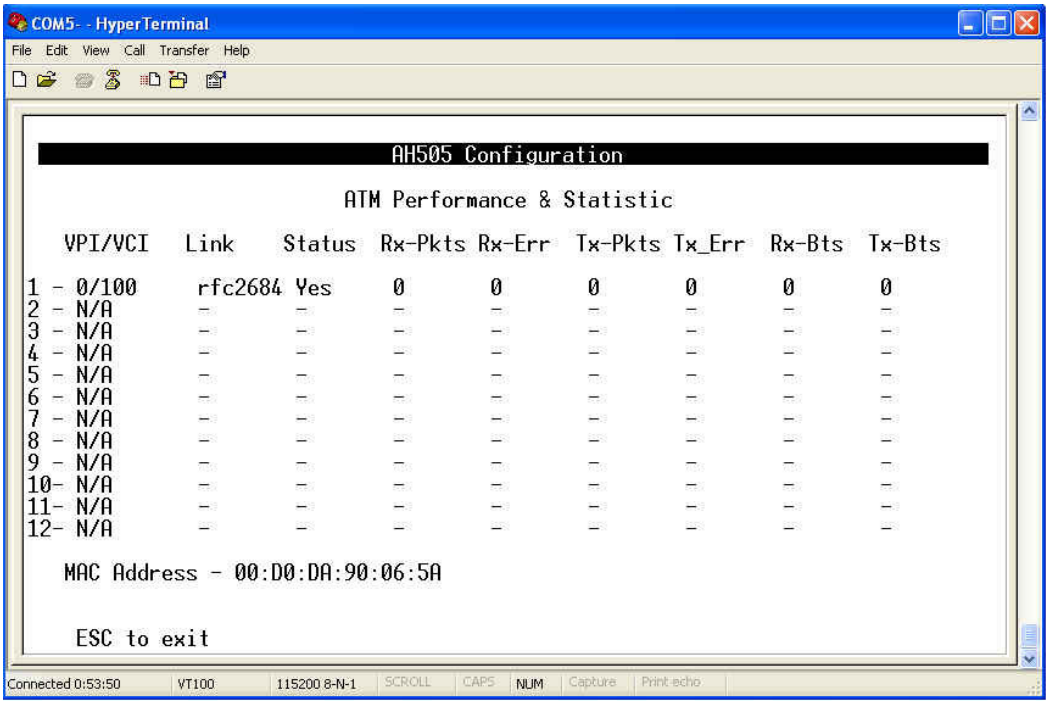


An Example of DSL performance in active operation

3.6.2 ATM

From Main Menu,

- Press **'F'** to open the 'Performance & Statistic' menu.
- Press **'B'** to open the 'ATM Performance & Statistic' menu.



4. Configuring with WEB

4.1 Login

When connected, the AH505 has the following pre-configured host IP addresses "**192.168.0.1**" as shown below.

To access the Web Utility,

- Configure your PC to the same network segment as the AH505. For example, you could set the PC to IP address **192.168.0.10** with a subnet mask of 255.255.255.0.
- Connect the PC to any of LAN port designated 1, 2, 3 or 4 on the Front Panel.
- Open the Web browser.
- Enter the IP address of the AH505.in the address field of the browser as exampled: **http://192.168.0.1** and then press **<Enter>** to connect.
- There is a default User Name "admin" for the AH505.
- Enter Password "**admin**".

4.2 Web Menus

On each Web Menu, there are two areas to illustrate:

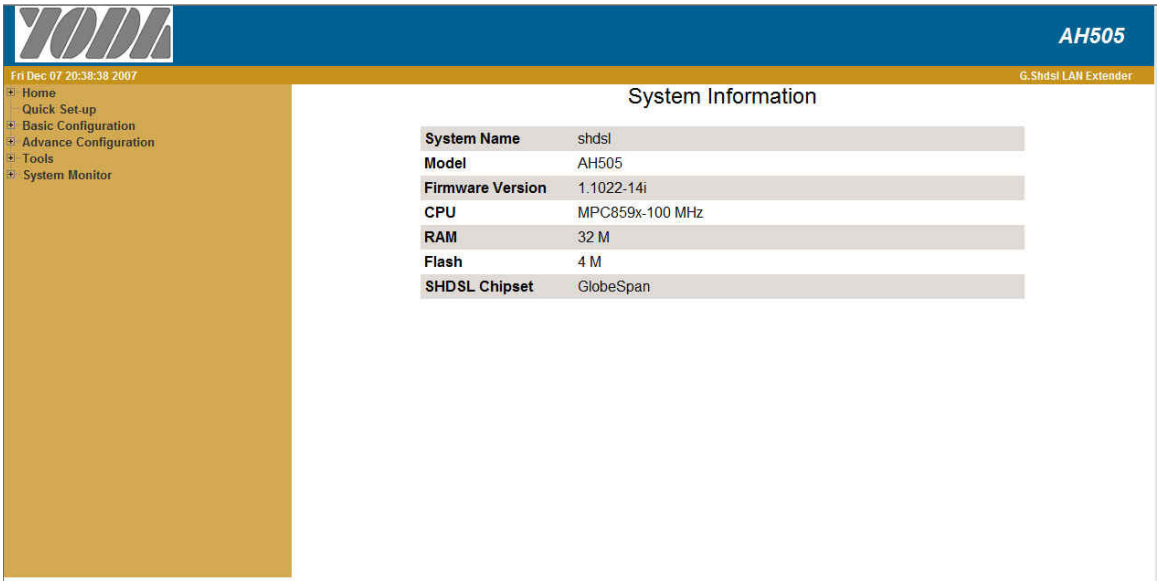
- **Menu Item:** On the left side of the Web Menu is the menu items.
- **Main Menu:** The remaining area of Web Menu provides fields for configuration, specific to each menu item, and displays prompt or Performance & Diagnostic data.

4.3 Setup

4.3.1 System Information

Menu " System Information " allows you to view and verify the unit's identity information as shown below.

In this menu, it shows the current system information such as: System Name, Model, Firmware Version, CPU, RAM, Flash size and DSL chipset.



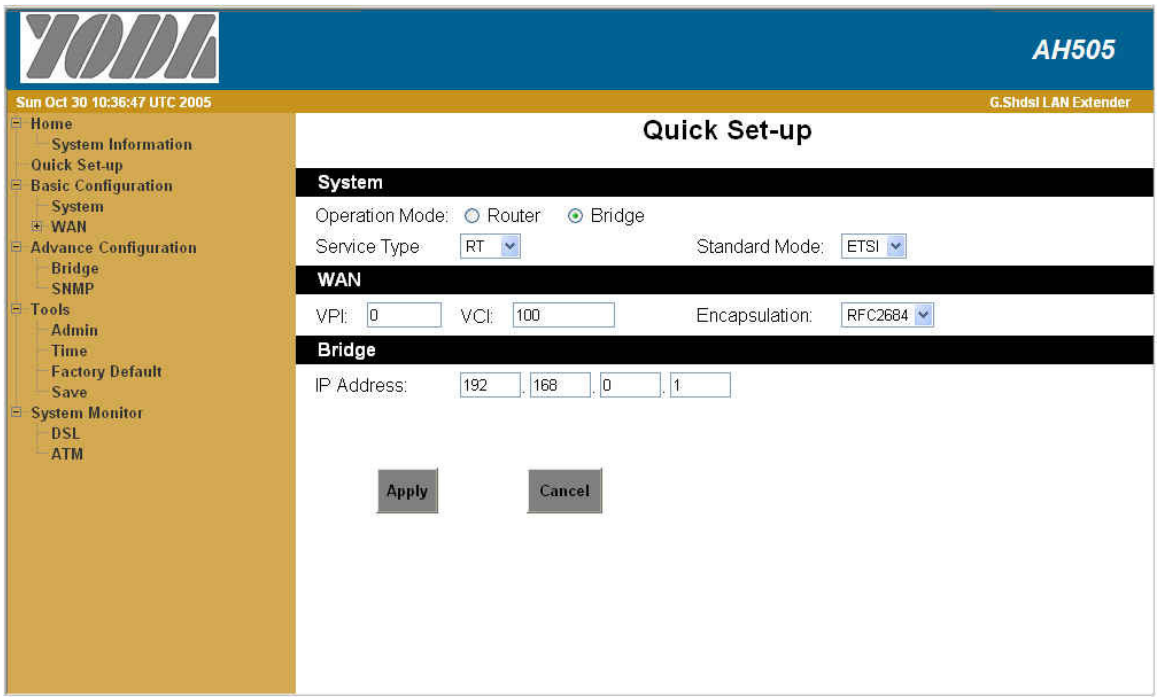
Items	Description
System Name	: Display the name of the unit.
Model	: Display the model name.
Firmware Version	: Display the current software version.
CPU	: Display the CPU chipset and its operating frequency.
RAM	: Display the size of the RAM Memory.
Flash	: Display the size of the Flash Memory.
SHDSL Chipset	: Display the chip name.

4.3.2 System Operation Mode

You can set System Operation Mode: BRIDGE or ROUTER from two different menus:-

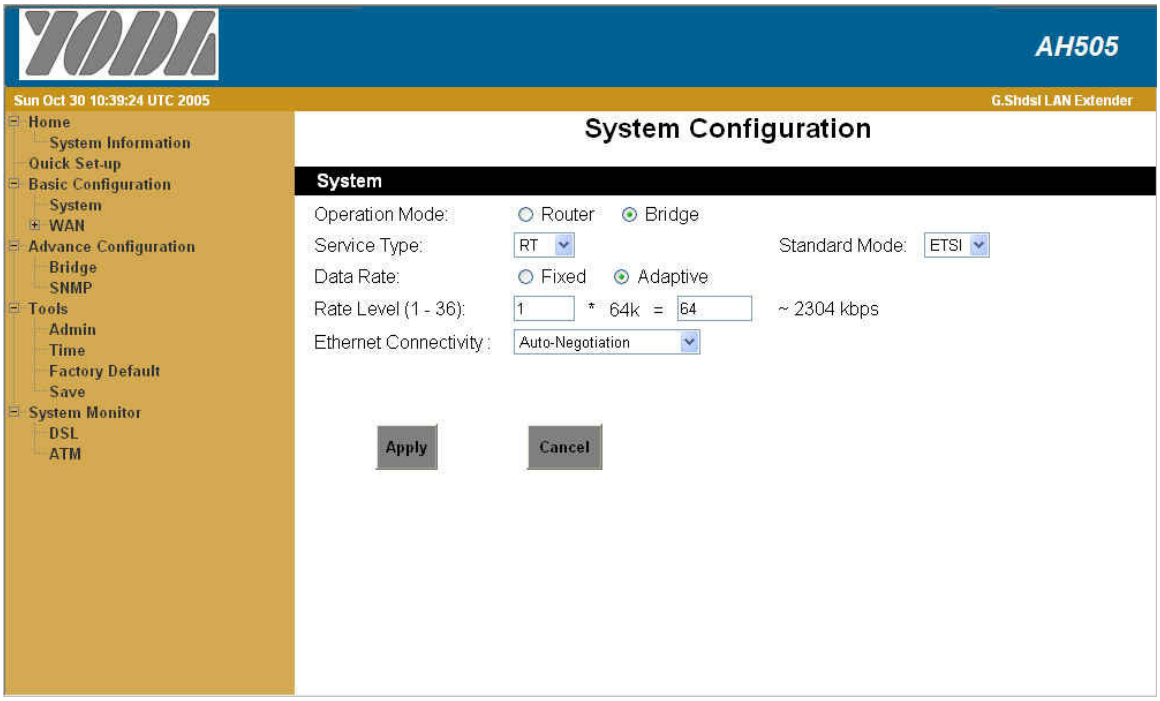
1. From menu “Quick Setup”,

   Step 1: - Click the option button **Router** or **Bridge** to select Operation Mode
   Step 2: - Click **Apply** button to update the system operation mode



2. From menu “System”

   Step 1: - Click the option button **Router** or **Bridge** to select Operation Mode
   Step 2: - Click **Apply** button to update the system operation mode



4.3.3 Bridge Mode

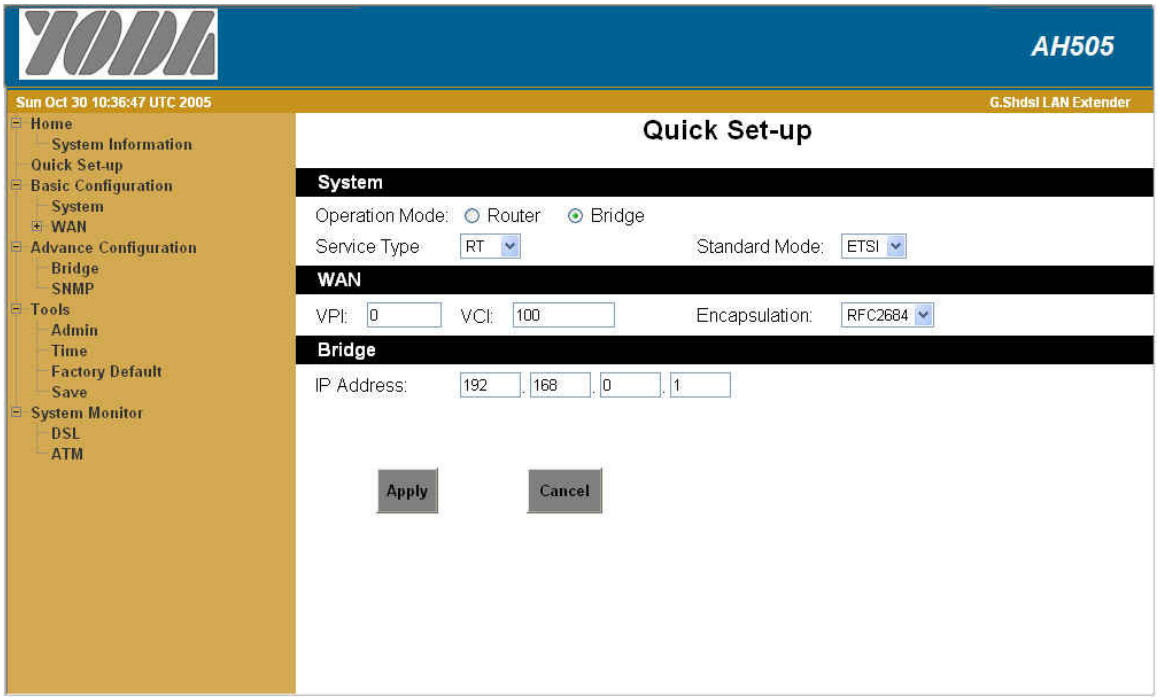
In Bridge mode, AH505 provides frame forward services between two or more LANs. It forwards frames based on the MAC (Medium Access Control) addresses which is hardware-level of NICs (Network Interface Card)

The operation mode of the system must set to BRIDGE Mode. To change the mode with WEB, please see the section 4.3.2. The following sections will help you to do configuration the device in BRIDGE mode.

Regarding to the application of the G.SHDSL Modem in Bridge Mode, please see the section 3.4.4.

4.3.3.1 Quick Set-up

Using this setup, the device can be quickly configured and operated properly.
Note: The WAN configuration is for the first Virtual Circuit (VC 1) in twelve VC set available in the device.



The details of the items are described in the following table:

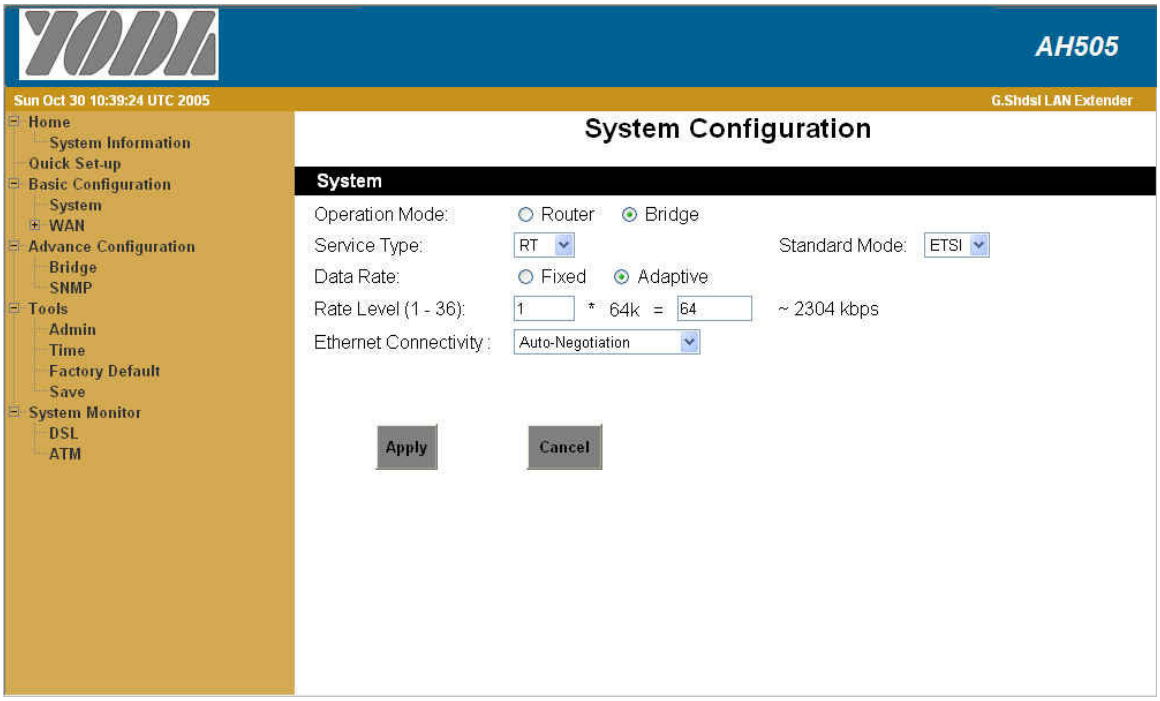
Item	Field Name	Description	Value
System	Operation Mode	System operation mode.	BRIDGE / ROUTER Default: BRIDGE
	Service Type	System service type. System can be operated as RT or COT type. Select from the drop-down list.	RT / COT Default: RT
	Standard Mode	Physical standard mode. Select from the drop-down list.	ETSI / ANSI Default: ETSI
Wan	VPI	Virtual Path Identifier	0 - 16
	VCI	Virtual Channel Identifier	33 - 4096
	Encapsulation	The encapsulation type is given by ISP. Select from the drop-down list.	RFC2684 / IPoA / PPPoE / PPPoA Default: RFC2684
BRIDGE	IP Address	The device IP address.	i.e '192.168.0.1'

4.3.3.2 Basic Configuration

In menu Basic Configuration, the system can be configured in individual submenu: System Setup, and WAN setup.

System

In menu “System”, it contains the system related configuration such as: operation mode, service type, physical standard mode, Data Rate mode, and so on.



The details of the items are described in the following table:

Item	Field Name	Description	Value
System	Operation Mode	System operation mode.	BRIDGE / ROUTER
	Service Type	System service type. System can be operated as RT or COT type. Select from the drop-down list.	RT / COT Default: RT
	Standard Mode	Physical standard mode. Select from the drop-down list.	ETSI / ANSI Default: ETSI
	Data Rate Mode	Data transferred rate mode.	ADAPTIVE / FIXED Default: ADAPTIVE
	Range	Date rate range. In Adaptive mode, the data rate can be changed in the range 192~2304 kbps. In Fixed mode, it is set in the range 64~2304 kbps.	ADAPTIVE: 192~2304 FIXED: 64 - 2304
	ETHERNET Connectivity	Specify the operation mode of LAN port.	Auto-Negotiation/10M half/10M full/100M half/100M full

WAN

To setup VC configuration,

- Click submenu channel 1 to channel 12 for an appropriate VC, i.e ‘channel1’ for VC 1, ‘channel2’ for VC 2...
-

To Delete VC configuration,

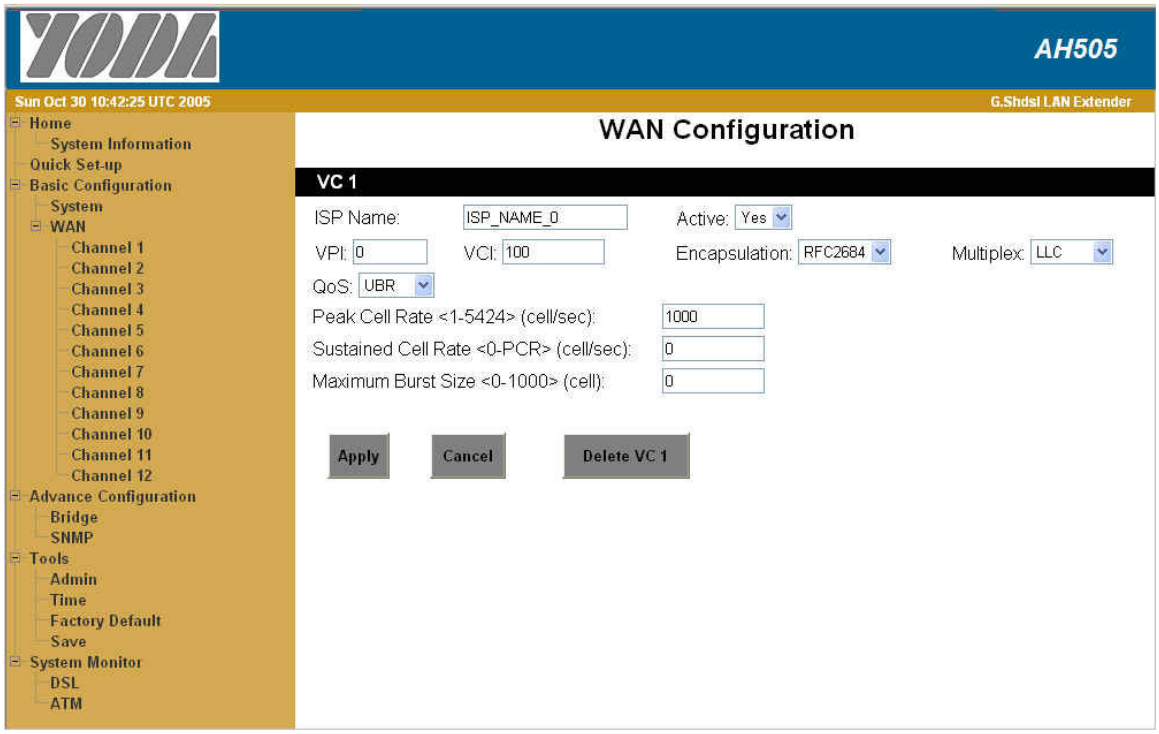
- Click submenu channel 1 to channel 12 for an appropriate VC, then click button “Delete VC …”

In menu WAN Setup, it shows the list of Virtual Circuits (VCs):channel 1 to channel 12

If a VC is already configured then it display its parameters as ISP Name, VPI,VCI, and so on.

If the VC is already activated, then in the field ‘Active’, it displays the word ‘Yes’, otherwise it displays a ‘No’.

If the VC set with the encapsulation type of PPPoE or PPPoA, then in the field Encapsulation it displays the status of PPP connection: RFC2684, IpoA, PPPoE or PPPoA.



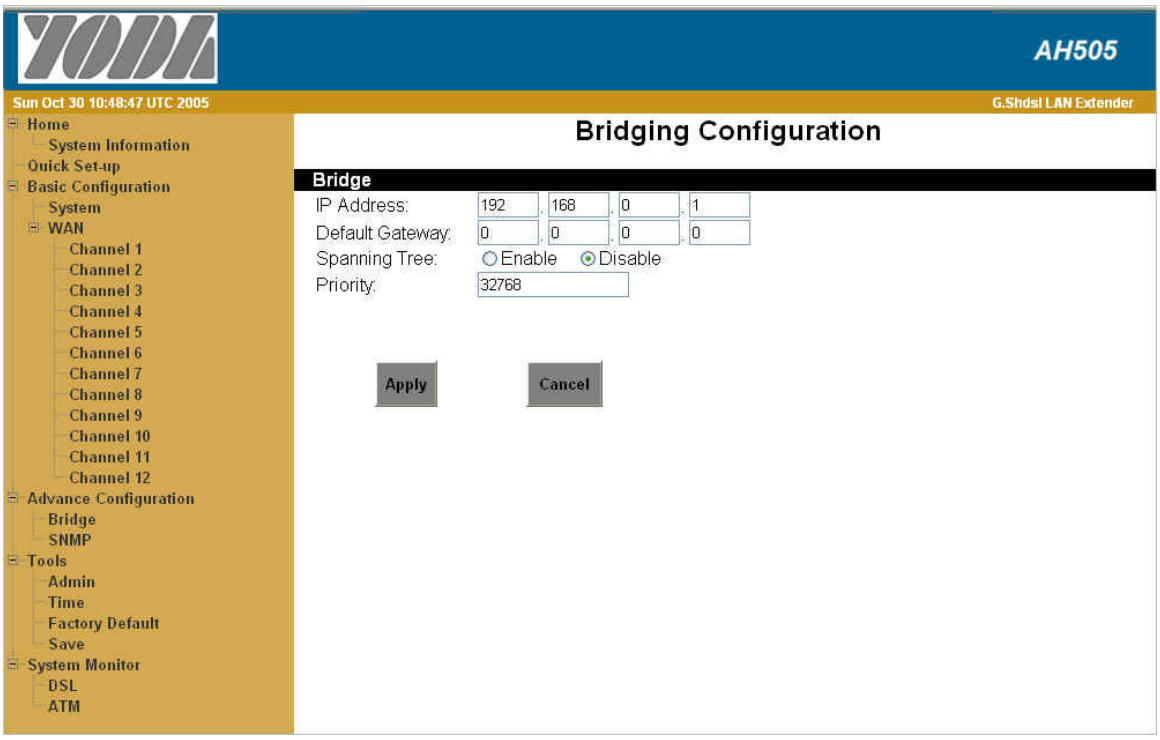
The details of the items are described in the following table:

Item	Field Name	Description	Value
VC1	ISP Name	ISP Name	Max. 18 characters
	VPI	Virtual Path Identifier, given by ISP	0 - 16
	VCI	Virtual Channel Identifier, given by ISP	33 - 4096
	Encapsulation	The encapsulation type is given by ISP. Select from the drop-down list.	RFC2684 / IPoA / PPPoE / PPPoA Default: RFC2684
	Multiplex	Header to identify the protocol that Virtual Circuit being carrying. LLC: Logical Link Control Multiplexing VCMUX : VC-based Multiplexing Select from the drop-down list..	LLC / VCMUX Default: LLC
	QoS	Quality of Services UBR: Unspecified Bit Rate. CBR: Constant Bit Rate. rt-VBR: Real-Time Variable Bit Rate. nrt-VBR: Non-Real-Time Variable Bit Rate. Select from the drop-down list.	UBR / CBR / rt-VBR / nrt-VBR Default: UBR
	Peak Cell Rate (PCR)	The maximum transmission rate.	0 - 5424
	Sustained Cell Rate (SCR)	The Transmission rate in a burst traffic.	0 - PCR
	Maximum Burst Size (MBS)	Maximum number of transmission cell at the peak rate.	0 - 1000

4.3.3.3 Advanced Configuration

In menu “Advance Configuration”, the system can be configured in the submenu Bridge and SNMP,

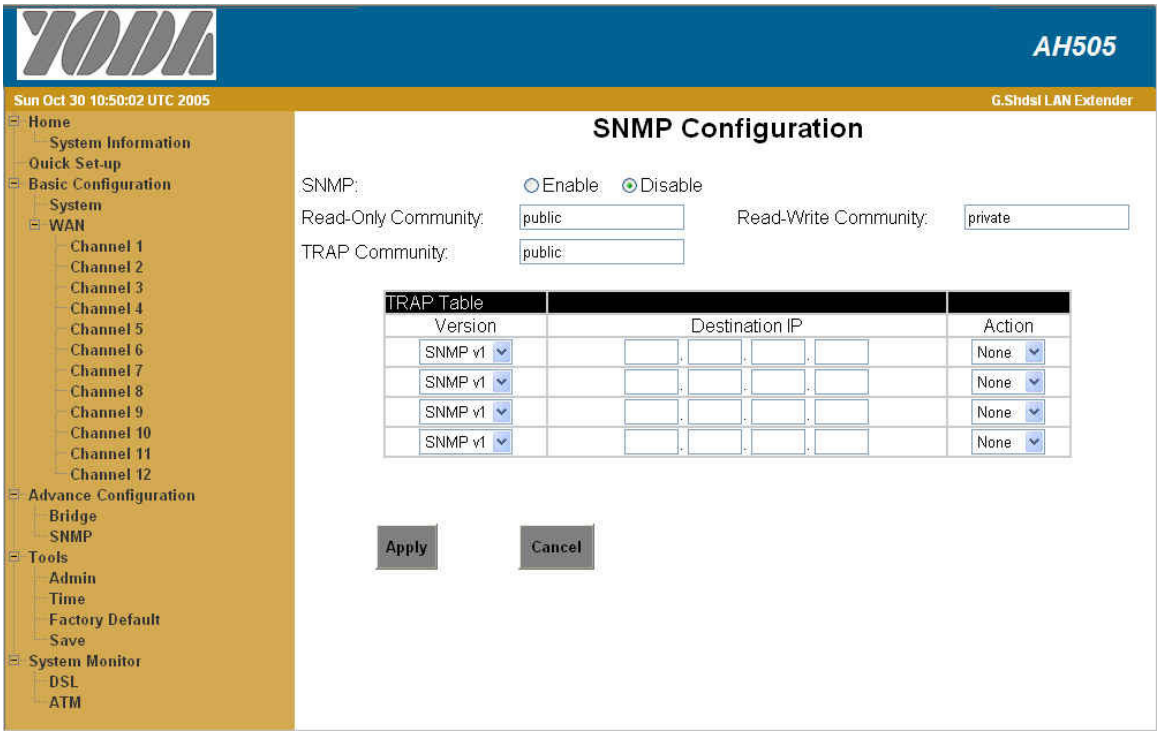
Bridge



The details of the items are described in the following table:

Item	Field Name	Description	Value
Bridge	IP Address	Bridge IP Address	i.e: ’192.168.0.1’
	Default Gateway	Specify Default Gateway address of the unit.	None
	Spanning Tree	Spanning Tree Learning Bridge Protocol.	Disable/Enable Default: Disable
	Priority	Specify the priority.	0-65535

SNMP



To configure the SNMP, go through the following steps.

- Click the button to **Enable** or **Disable** SNMP management capabilities.
-

Community

Read-Only Community:

- Specify the community name of external SNMP Managers allowed with access level of " Read " to the unit's MIB..
-

Read-Write Community:

- Specify the community name of external SNMP Managers allowed with access level of " Read & write " to the unit's MIB.

Trap

To configure the Trap, go through the following steps.

- Select the version number, SNMPv1 or SNMPv2, from the pull-down menu.
- Specify the IP address of each SNMP Trap Manager in the correspondent **Destination IP.**
- Select the options, **None**, **Add** or **Delete,** from the pull-down menu.
- Click the " **Apply** " button to save the configuration.

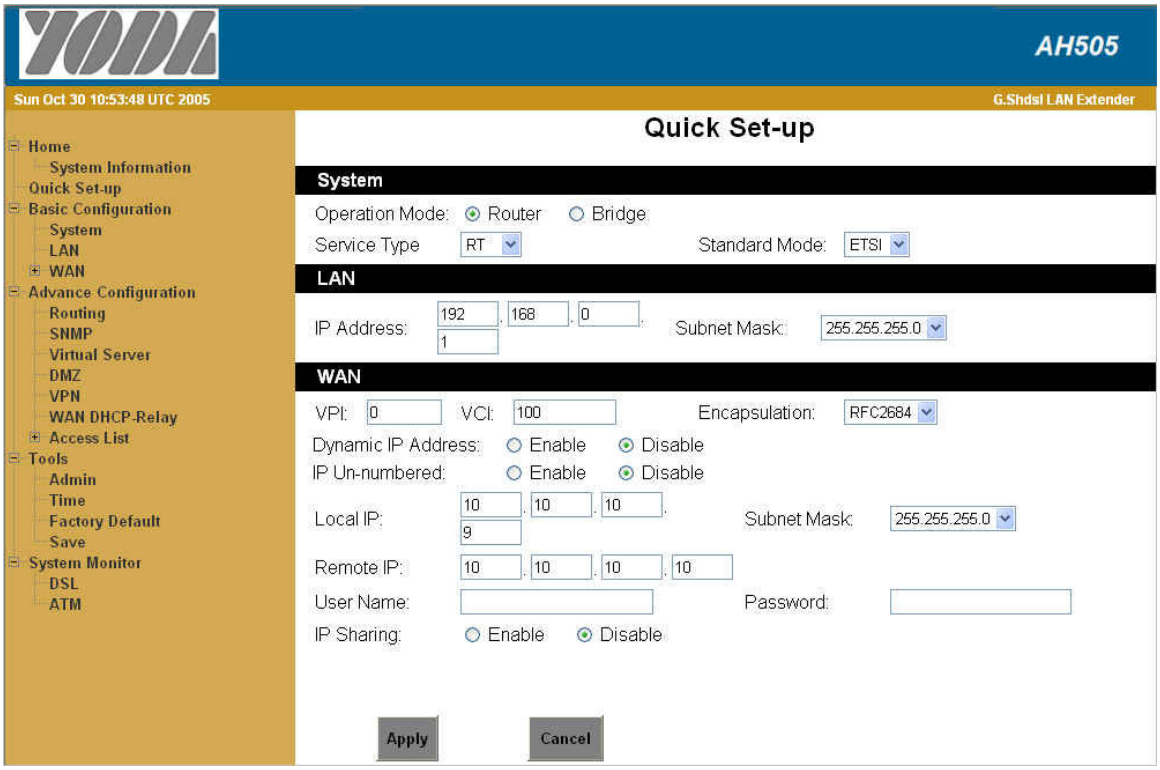
4.3.4 Router Mode

The operation mode of the system must set to ROUTER Mode. To change the mode with WEB, please see the section 4.3.2. The following sections will help you to do configuration the device in Router mode.

Regarding to the application of the G.SHDSL Modem in Router Mode ,please see the section 3.4.5.

4.3.4.1 Quick Set-up

Using this setup, the device can be quickly configured and operated properly.
Note: The WAN configuration is for the first Virtual Circuit (VC 1) in twelve VC set available in the device.



The details of the items are described in the following table:

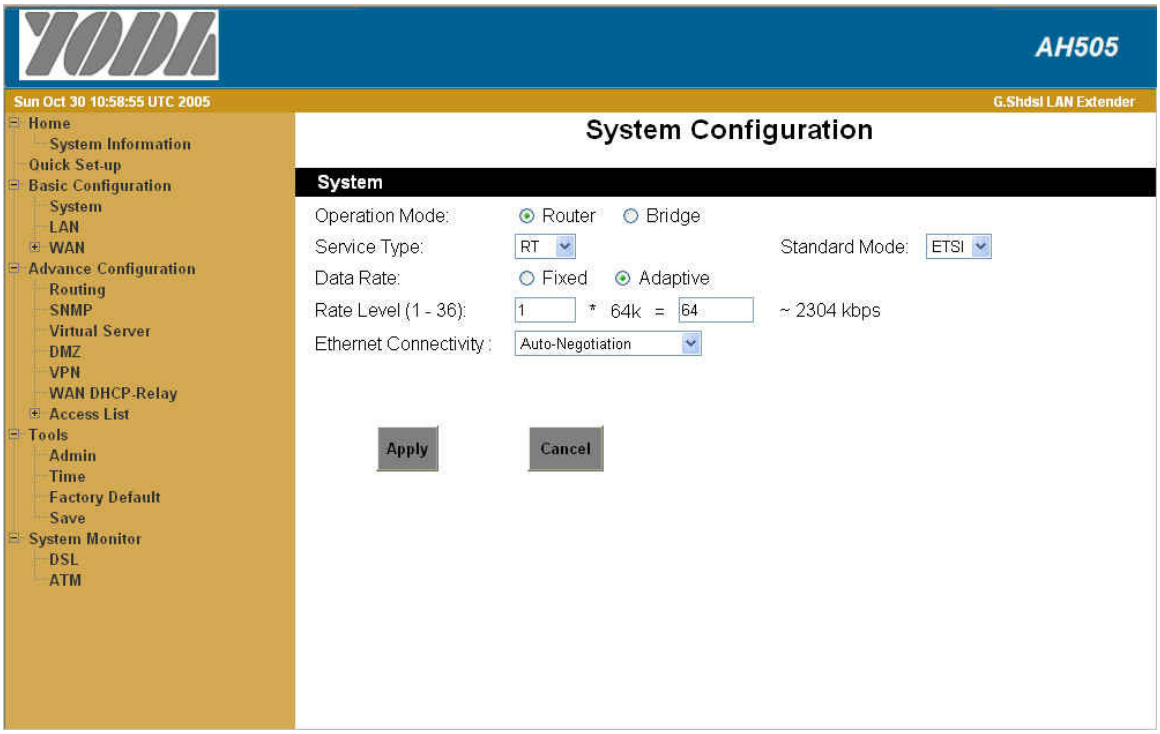
Item	Field Name	Description	Value
System	Operation Mode	System operation mode.	BRIDGE / ROUTER Default: BRIDGE
	Service Type	System service type. System can be operated as RT or COT type. Select from the drop-down list.	RT / COT Default: RT
	Standard Mode	Physical standard mode. Select from the drop-down list.	ETSI / ANSI Default: ETSI
LAN	LAN IP Address	Local IP Address of router.	Default: '192.168.0.1'
	LAN IP Subnet Mask	Local Subnet Mask of router.	Default: '255.255.255.0'
WAN	VPI	Virtual Path Identifier	0 - 16
	VCI	Virtual Channel Identifier	33 - 4096
	Encapsulation	The encapsulation type is given by ISP. Select from the drop-down list.	RFC2684 / IPoA / PPPoE / PPPoA Default: RFC2684
	Dynamic IP Address	Dynamic IP Address	Disable/Enable Default: Disable
	IP Un-numbered	IP Un-numbered	Disable/Enable Default: Disable
	WAN IP Address	The WAN local IP Address of router, given by ISP	i.e '10.10.10.9'
	WAN IP Subnet Mask	The WAN local IP subnet mask of router, given by ISP	i.e '255.255.255.0'
	Remote IP Address	The IP Address of DSLAM, given by ISP	i.e '10.10.10.10'
	User Name	ISP login user name, given by ISP. It is set for the encapsulation type of PPPoE or PPPoA	Max. 18 characters
	Password	ISP login password, given by ISP. It is set for the encapsulation type of PPPoE or PPPoA	Max. 18 characters
	IP Sharing	IP Sharing or NAT (Network Access Translation).	Disable / Enable Default: Disable

4.3.4.2 Basic Configuration

In menu Basic Configuration, the system can be configured in individual submenu: System Setup, LAN Setup and WAN setup.

System

In menu “System”, it contains the system related configuration such as: operation mode, service type, physical standard mode, Data Rate mode.

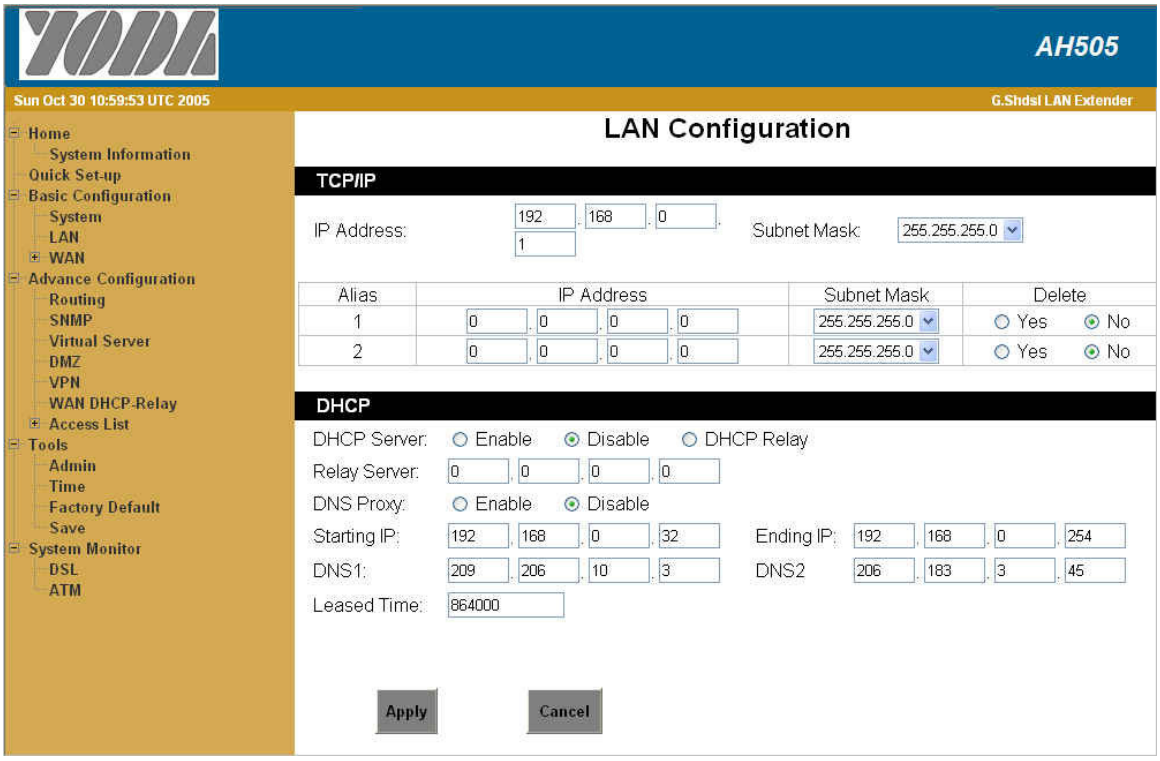


The details of the items are described in the following table:

Item	Field Name	Description	Value
System	Operation Mode	System operation mode.	BRIDGE / ROUTER
	Service Type	System service type. System can be operated as RT or COT type. Select from the drop-down list.	RT: Client COT: Server
	Standard Mode	Physical standard mode. Select from the drop-down list.	ETSI / ANSI
	Data Rate Mode	Data transferred rate mode.	ADAPTIVE / FIXED
	Range	Date rate range. In Adaptive mode, the data rate can be changed in the range 192~2304 kbps. In Fixed mode, it is set in the range 64~2304 kbps.	ADAPTIVE: 192~2304 FIXED: 64 - 2304

LAN

The details of the items are described in the following table:



The details of the items are described in the following table:

Item	Field Name	Description	Value
TCP/IP	IP Address	LAN IP address of router	Default: '192.168.0.1'
	IP Subnet Mask	LAN IP subnet mask of router	Default: '255.255.255.0'
	Alias	Specify Alias ip and subnet mask	Default:NO
DHCP	DHCP Server	Dynamic Host Configuration Protocol - allows dynamically for any of the connected hosts on a LAN that support DHCP clients.	Disable / Enable Default:Disable
	Relay Server	Specify Relay Server IP	None
	DNS Proxy	Enable or Disable DNS Proxy	Disable / Enable Default:Disable
	Starting IP	Starting IP Address in the range in which the IP address of hosts on the LAN will be assigned, in case of DHCP server set to " Enable ".	i.e: '192.168.0.32'
	Ending IP	Ending IP Address in the range in which the IP address of hosts on the LAN will be assigned, in case of DHCP server set to " Enable ".	i.e: '192.168.0.254'
	DNS 1	Domain Name System - Primary DNS server IP address for resolving the symbolic IP (like www.yahoo.com) to numeric IP address (like 216.109.118.74)	i.e: '209.206.10.3'
	DNS 2	Secondary DNS server IP address	i.e: '206.183.3.45'
	Leased Time	Amount of time that a given IP address will be valid.	1-864000

WAN

To setup VC configuration,

- Click submenu channel 1 to channel 12 for an appropriate VC, i.e ‘channel1’ for VC 1, ‘channel2’ for VC 2...
-

To Delete VC configuration,

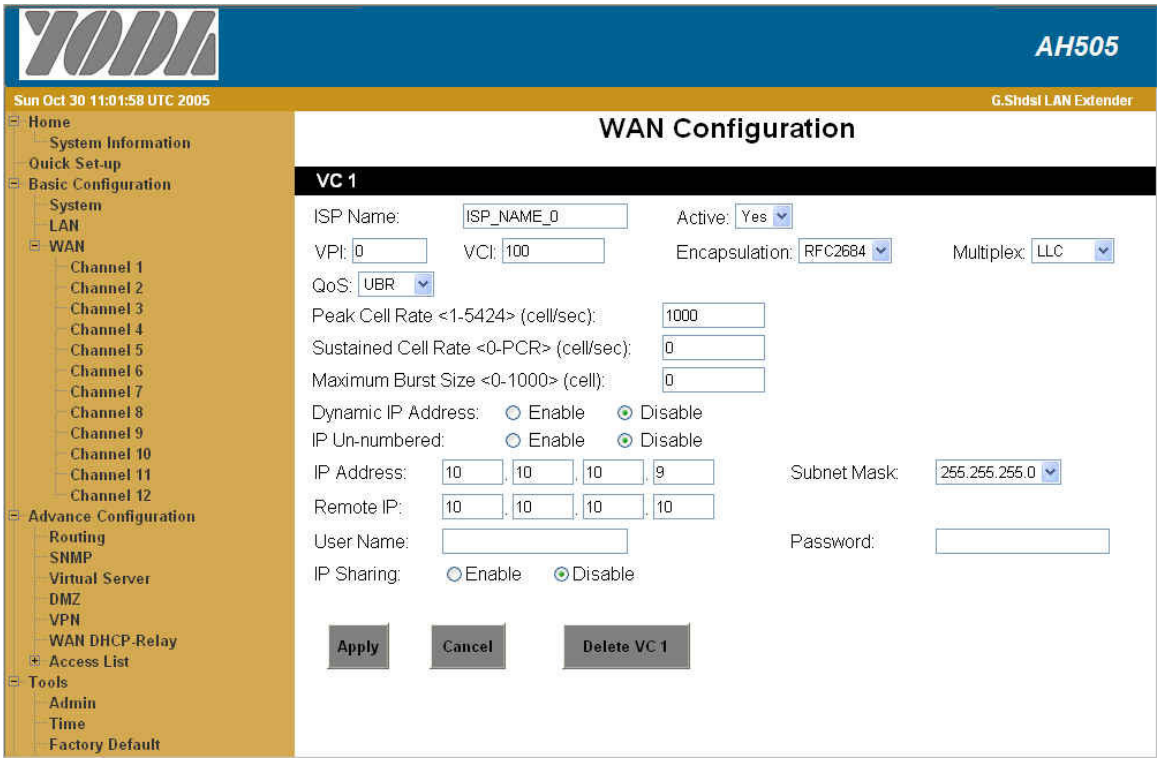
- Click submenu channel 1 to channel 12 for an appropriate VC, then click button “Delete VC …”

In menu WAN Setup, it shows the list of Virtual Circuits (VCs):channel 1 to channel 12

If a VC is already configured then it display its parameters as ISP Name, VPI,VCI, and so on.

If the VC is already activated, then in the field ‘Active’, it displays the word ‘Yes’, otherwise it displays a ‘No’.

If the VC set with the encapsulation type of PPPoE or PPPoA, then in the field Encapsulation it displays the status of PPP connection: RFC2684, IpoA, PPPoE or PPPoA.



The details of the items are described in the following table:

Item	Field Name	Description	Value
VC1	ISP Name	ISP Name	Max. 18 characters
	VPI	Virtual Path Identifier, given by ISP	0 - 16
	VCI	Virtual Channel Identifier, given by ISP	33 - 4096
	Encapsulation	The encapsulation type is given by ISP. Select from the drop-down list.	RFC2684 / IPoA / PPPoE / PPPoA Default: RFC2684
	Multiplex	Header to identify the protocol that Virtual Circuit being carrying. LLC: Logical Link Control Multiplexing VCMUX : VC-based Multiplexing Select from the drop-down list..	LLC / VCMUX Default: LLC
	QoS	Quality of Services UBR: Unspecified Bit Rate. CBR: Constant Bit Rate. rt-VBR: Real-Time Variable Bit Rate. nrt-VBR: Non-Real-Time Variable Bit Rate. Select from the drop-down list.	UBR / CBR / rt-VBR / nrt-VBR Default: UBR
	Peak Cell Rate (PCR)	The maximum transmission rate.	0 - 5424
	Sustained Cell Rate (SCR)	The Transmission rate in a burst traffic.	0 - PCR
	Maximum Burst Size (MBS)	Maximum number of transmission cell at the peak rate.	0 - 1000
	Dynamic IP Address	Enable or Disable Dynamic IP Address	Disable/Enable Default: Disable
	IP Un-numbered	Enable or Disable IP Un-numbered	Disable/Enable Default: Disable
	WAN IP Address	The WAN local IP Address of router, given by ISP	i.e ’10.10.10.9’
	WAN IP Subnet Mask	The WAN local IP subnet mask of router, given by ISP	i.e ‘255.255.255.0’
	Remote IP Address	The IP Address of DSLAM, given by ISP	i.e ’10.10.10.10’
	User Name	ISP login user name, given by ISP. It is set for the encapsulation type of PPPoE or PPPoA.	Max.18 characters
	Password	ISP login password, given by ISP. It is set for the encapsulation type of PPPoE or PPPoA.	Max.18 characters
	IP Sharing	IP Sharing or NAT (Network Access Translation). Select from the drop-down list.	Disable/Enable Default: Disable

4.3.4.3 Advanced Configuration

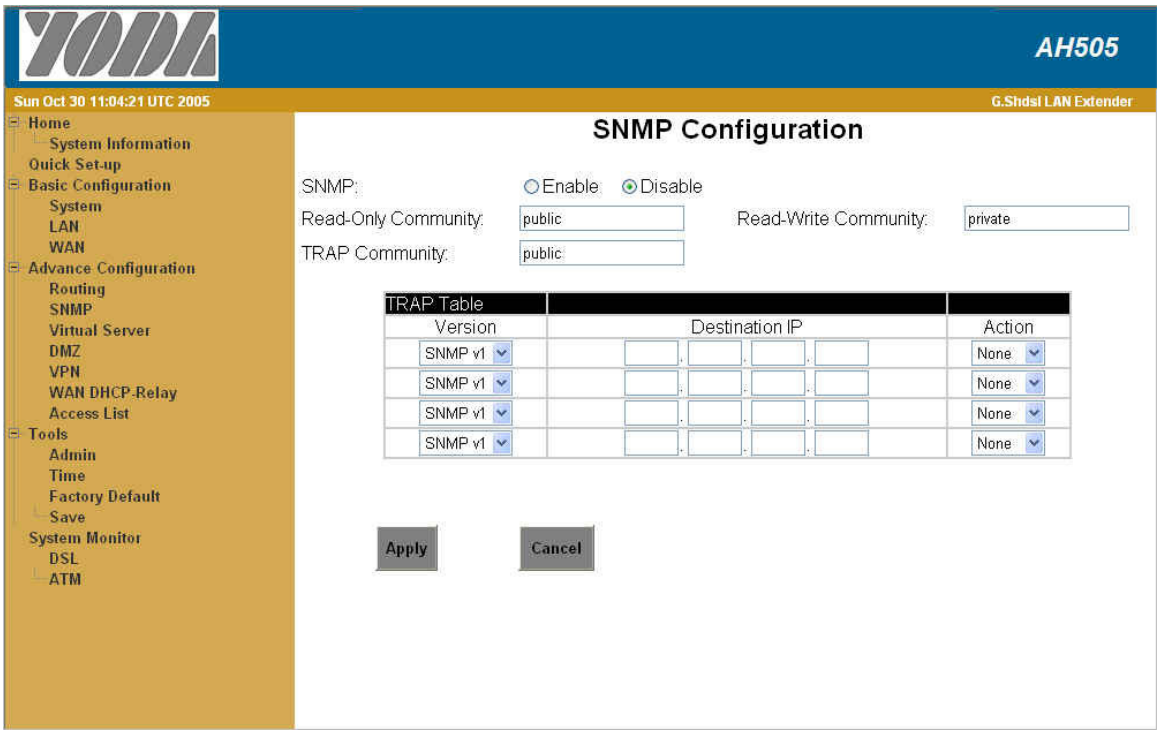
In menu “Advance Configuration”, the system can be configured in the submenu Routing, SNMP, Virtual Server, DMZ ,VPN, WAN-DHCP Relay and Access List

Routing

The details of the items are described in the following table:

Item	Field Name	Description	Value
Dynamic Routing	RIP	With Dynamic Routing, you can enable AH505 to automatically adjust to physical changes in the network’s topology. Enable or disable the Routing Information Protocol.	Disable / Enable Default: Disable
	Version	RIP version determines the format and broadcasting method of any RIP transmissions by the AH505.	RIP-1 / RIP-2 Default: RIP-2
Static Routing	IP Address	A static route is a pre-configured path that data must traverse to reach a specific host or network. Specify the Destination IP Address for entry in the static routing table.	i.e ’10.10.10.50’
	IP Subnet Mask	Specify the Subnet Mask for the network configured in the static routing table.	i.e ‘255.255.255.0’
	Gateway	Specify the IP address of Gateway.	i.e ’192.168.0.1’

SNMP



To configure the SNMP, go through the following steps.

- Click the button to **Enable** or **Disable** SNMP management capabilities.
-

Community

Read-Only Community:

- Specify the community name of external SNMP Managers allowed with access level of " Read " to the unit's MIB..
-

Read-Write Community:

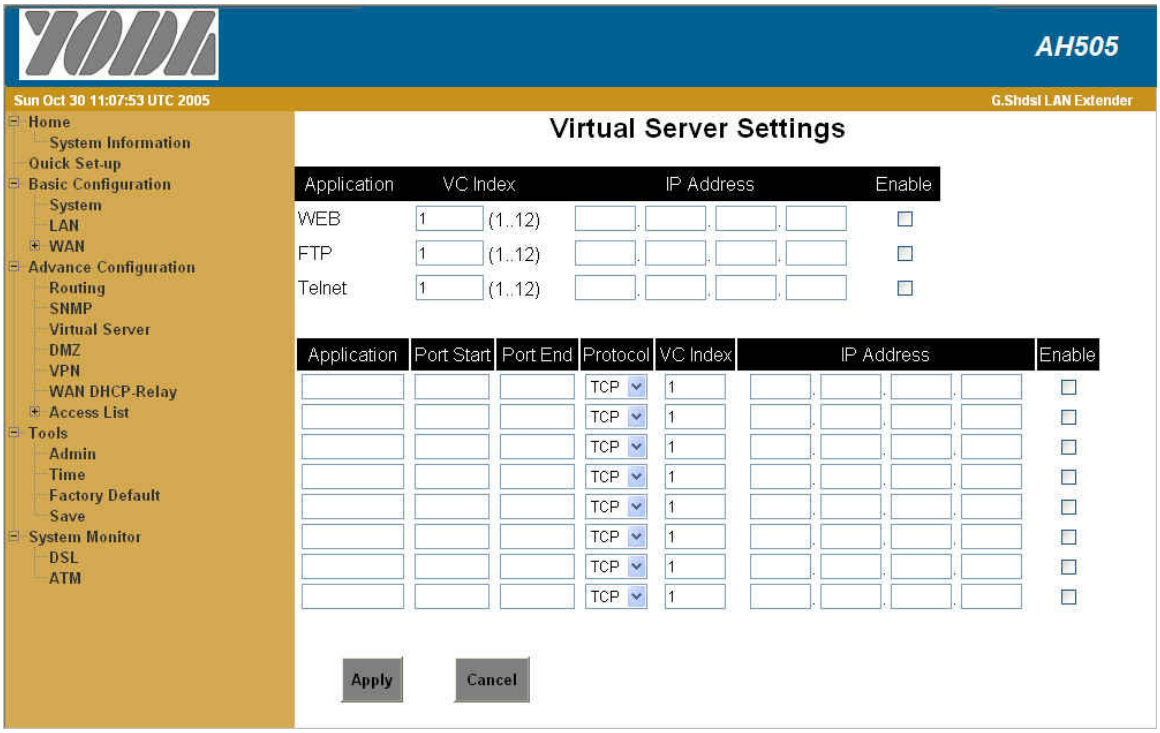
- Specify the community name of external SNMP Managers allowed with access level of " Read & write " to the unit's MIB.

Trap

To configure the Trap, go through the following steps.

- Select the version number, SNMPv1 or SNMPv2, from the pull-down menu.
- Specify the IP address of each SNMP Trap Manager in the correspondent **Destination IP.**
- Select the options, **None**, **Add** or **Delete,** from the pull-down menu.
- Click the " **Apply** " button to save the configuration.

Virtual Server

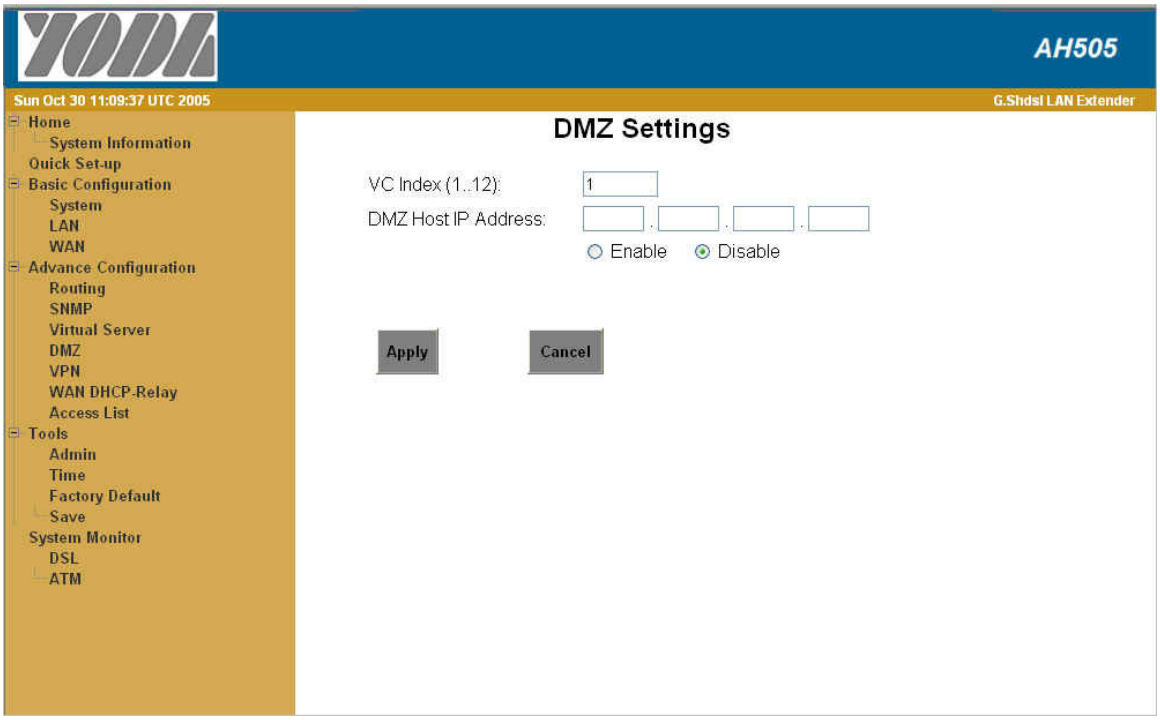


To configure, go through the following steps.

- Specify the IP address of the correspondent local server, e.g., Web, FTP or Telnet.
- Check the button to **Enable** these servers.
- Specify the name of the application.
- Specify the starting global port number as Port Start indicated.
- Specify the starting global port number as Port End indicated.
- Select the protocol, **TCP** or **UDP** passing through this port from the pull-down menu. .
- Specify the WAN channel number.
- Specify the IP address of the local server at which the Internet user is accessible.

Check the button to **Enable** it.

DMZ

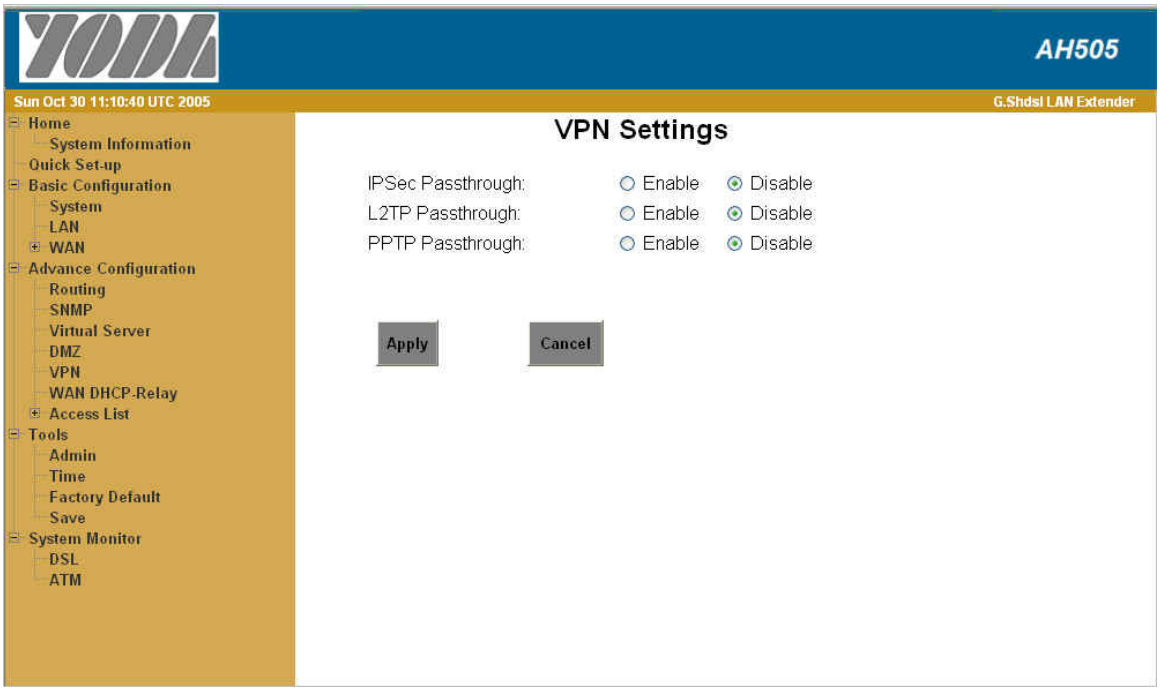


Click **DMZ** from the Configuration menu item for showing the configuration screen.
To configure,

- Specify the WAN channel number.
- Specify IP address of the DMZ host intended for.
- Check the button to **Enable** or **Disable** it.

Click the **Apply** button to save the configuration.

VPN

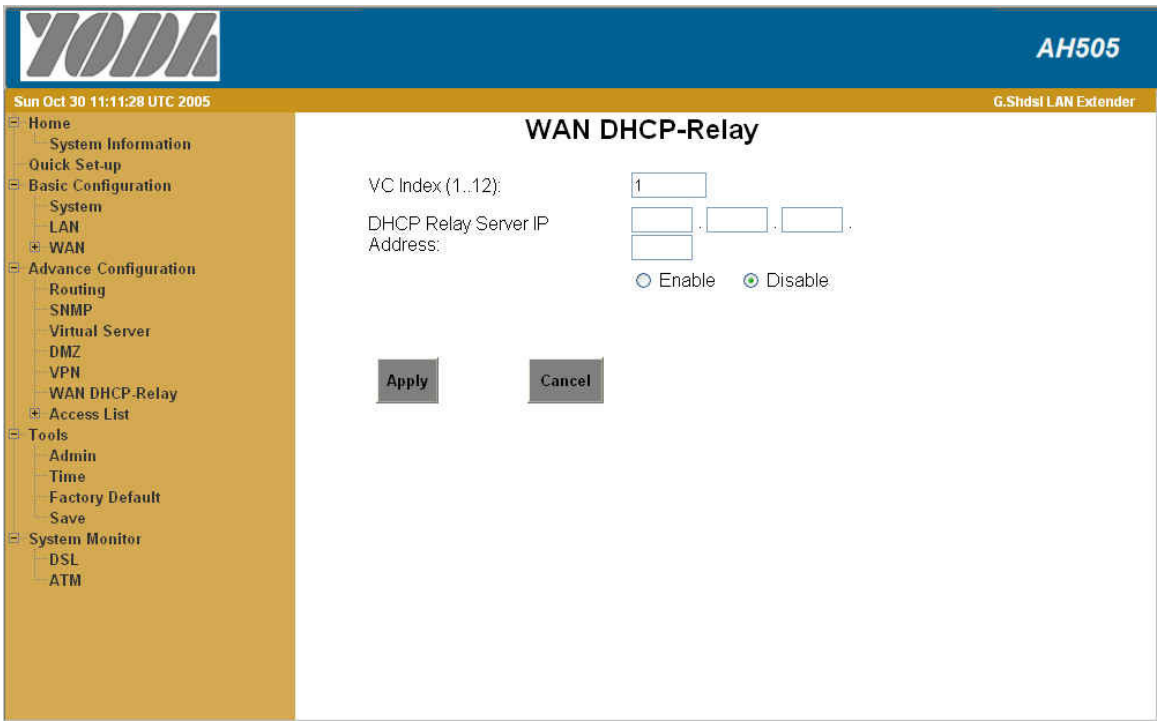


Click **VPN** from the Configuration menu item for showing the configuration screen.
To configure,

- Click the button to **Enable** or **Disable** the tunnel pass through feature specific to **IPSec, L2TP,** or **PPTP** corresponding to each protocol.

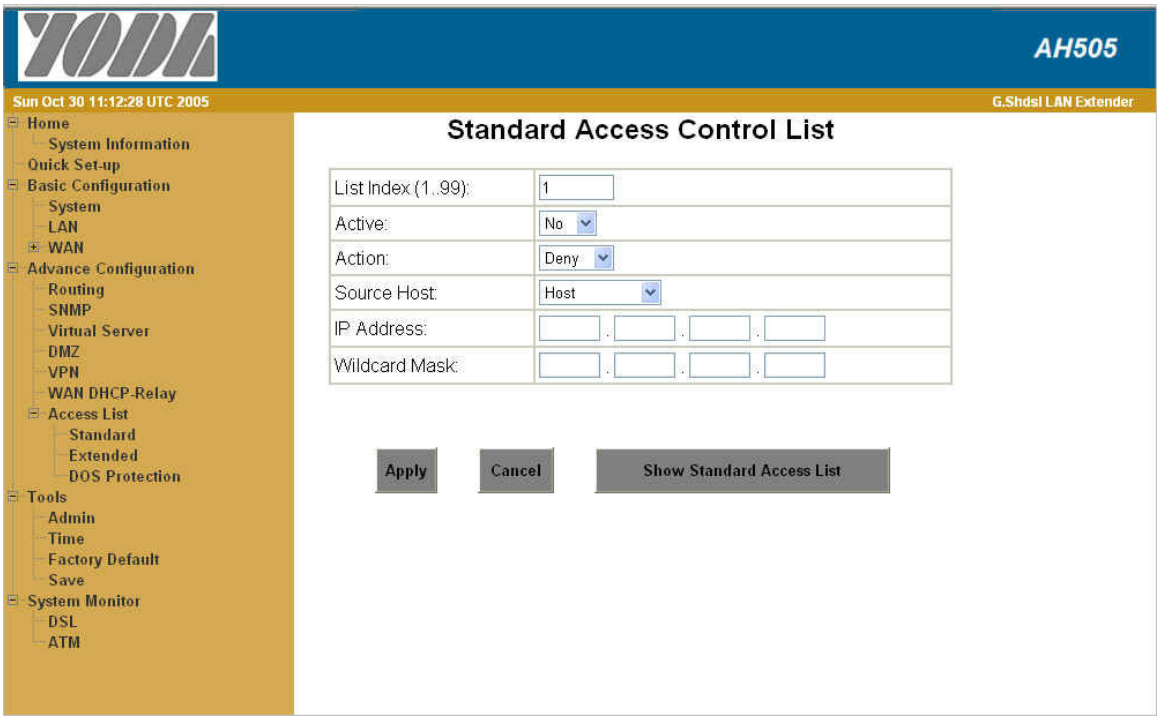
Click the **Apply** button to save the configuration.

WAN DHCP-Relay

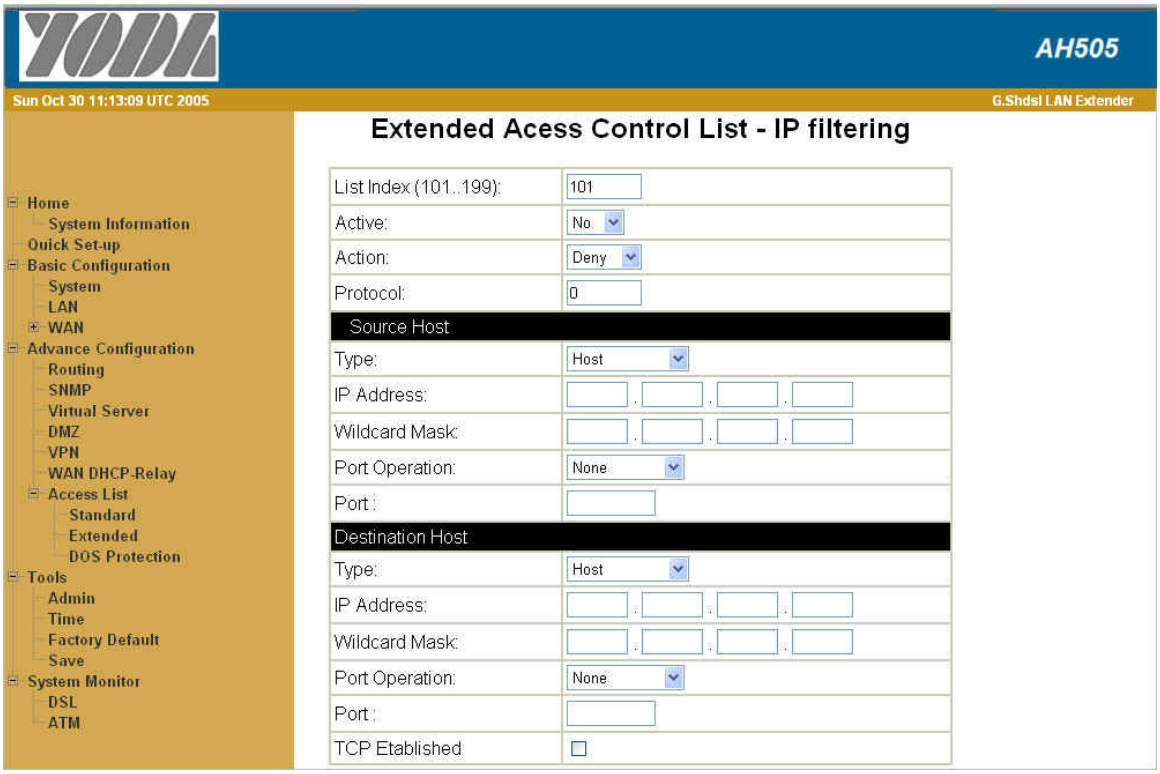


Access List

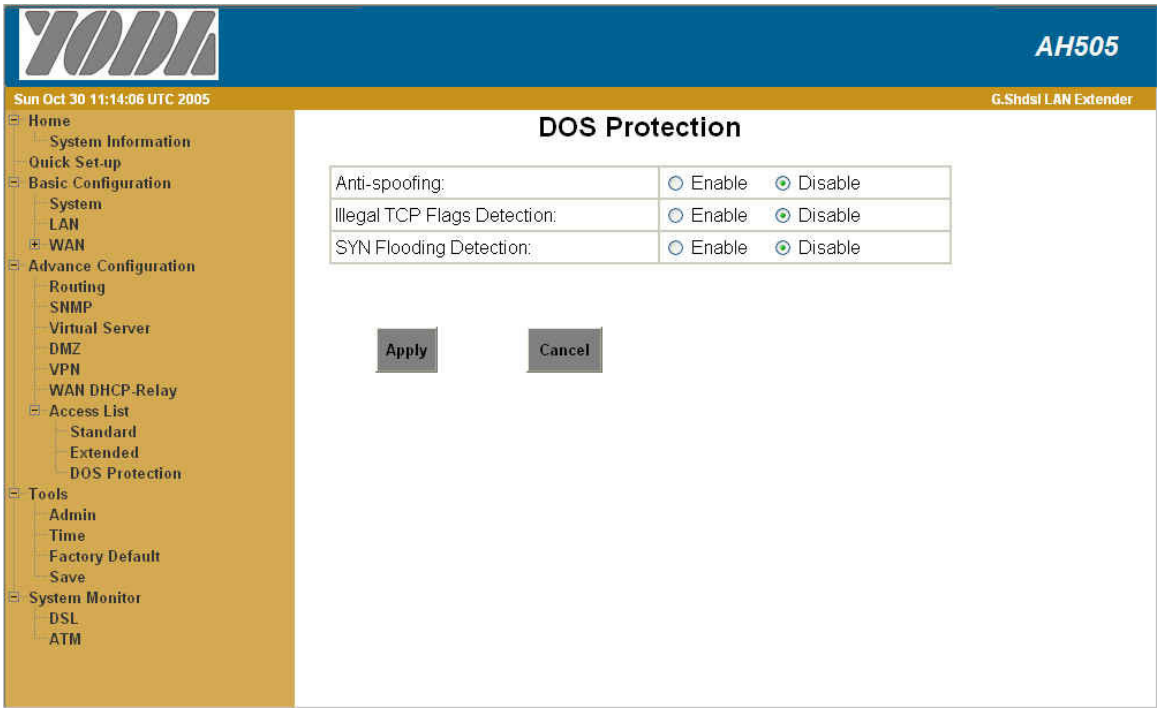
Standard Access Control List



Extended Access Control List – IP filtering



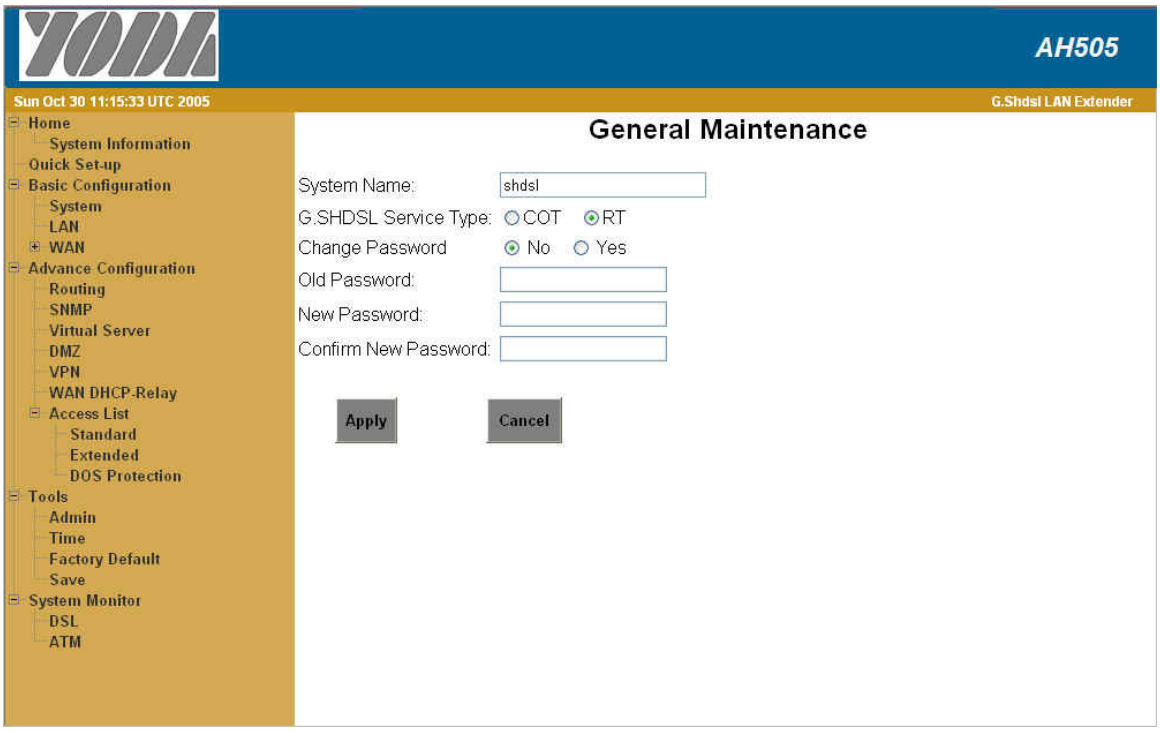
DOS Protection



4.4 Maintenance

4.4.1 General Maintenance

From menu item “Admin”, you can get the “General Maintenance” menu.

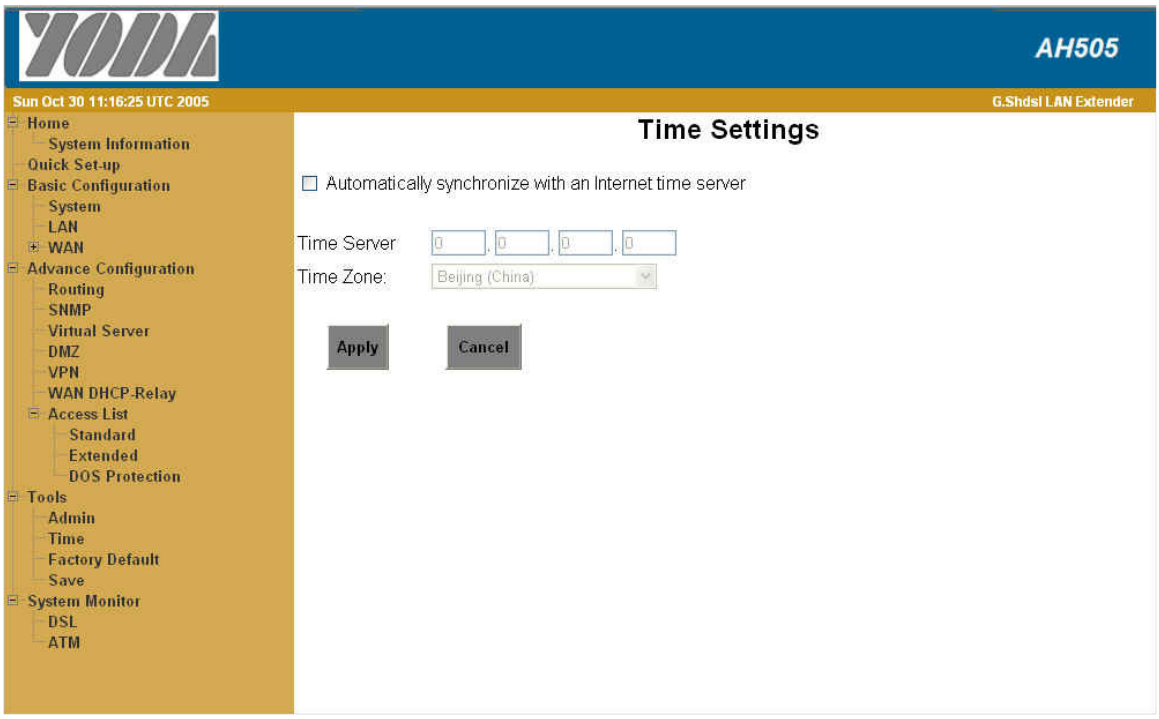


To configure Password,

- Check the button “ **Yes** “ to confirm the change or “ **No** “ to nullify the action.
- Enter the Old Password used.
- Enter the New Password desired.
- Re-enter the New Password to confirm the change.

Click the “ **Apply** “ button to save the configuration.

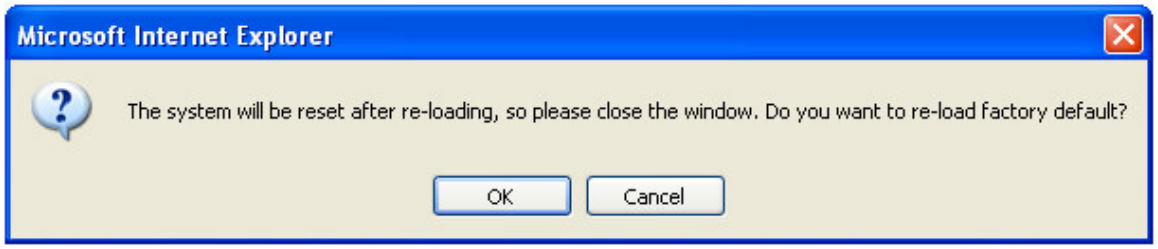
4.4.2 Time Settings



The details of the items see section 3.5.5

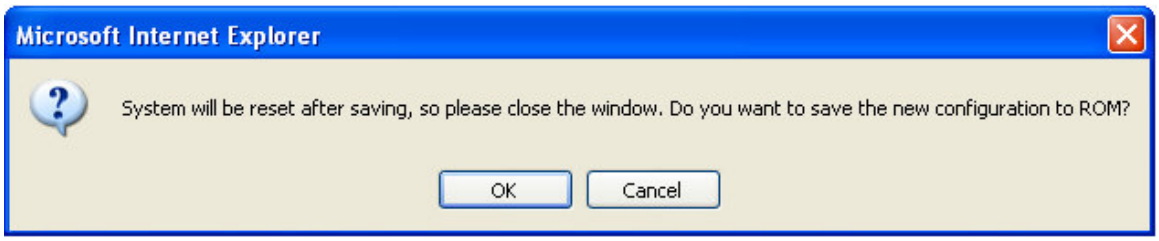
4.4.3 Factory Default

From Factory Default Menu, you'll get a dialog as following picture:



If you click "OK" to re-load factory default, the device will reboot by itself.

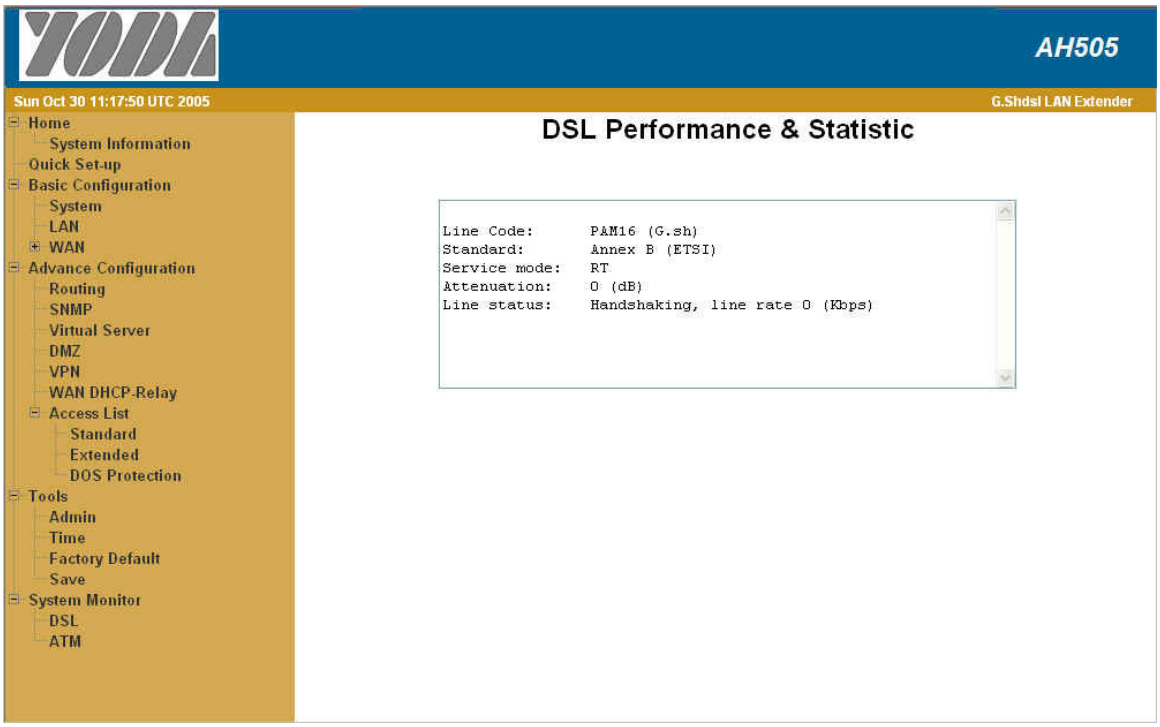
4.4.4 Save



If you click “OK” to save the new configuration, the device will reboot by itself.

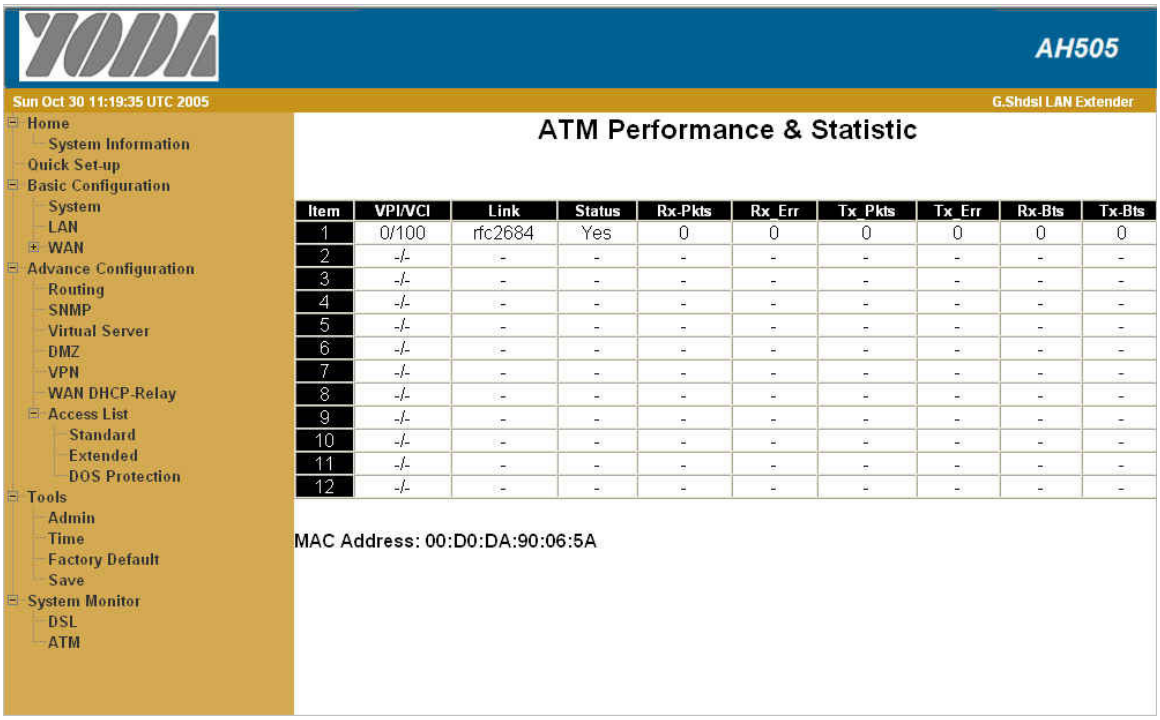
4.5 Performance

4.5.1 DSL Performance & Statistic



Display the DSL Performance and Statistics.

4.5.2 ATM Performance & Statistic



Displaying ATM Performance and Statistics.

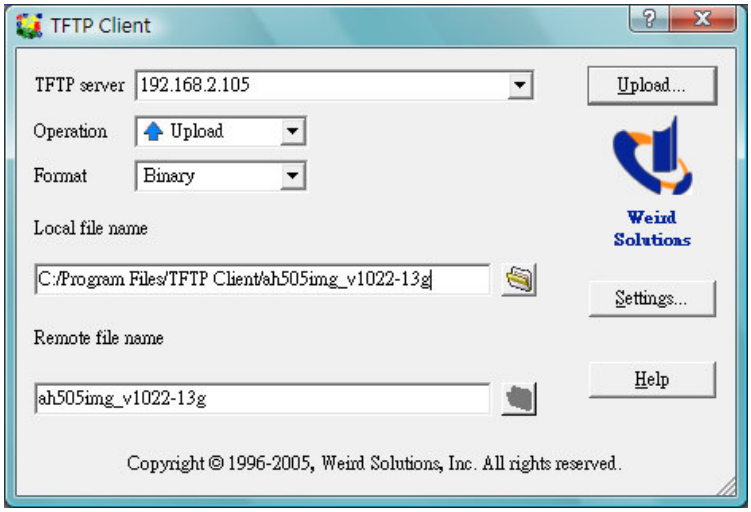
5. Upgrading Firmware

There are 2 kinds of methods to update firmware:

- Through Serial port
- Through Ethernet port

5.1 Upgrade using Ethernet port

Step 1: Install TFTP software, such as TFTP Client (Details see Appendix A).
Step 2: Connect the RS-232 & Ethernet cable to PC and AH505
Step 3: Using Hyper Terminal of Windows to check AH505 status. The default setting of Hyper terminal is 115200 bps, 8 data bit, No Parity, 1 stop bit.
Step 4: Check the IP address of AH505, to make sure it is on the same subnet with your PC (e.g. PC-192.168.2.10, AH505-192.168.2.105)
Step 5. Do ping test from your PC, to make sure the connection between PC and AH505 unit is good.
Step 6: Run the TFTP Client software under the Windows's XP or 2000 OS, to get following screen:

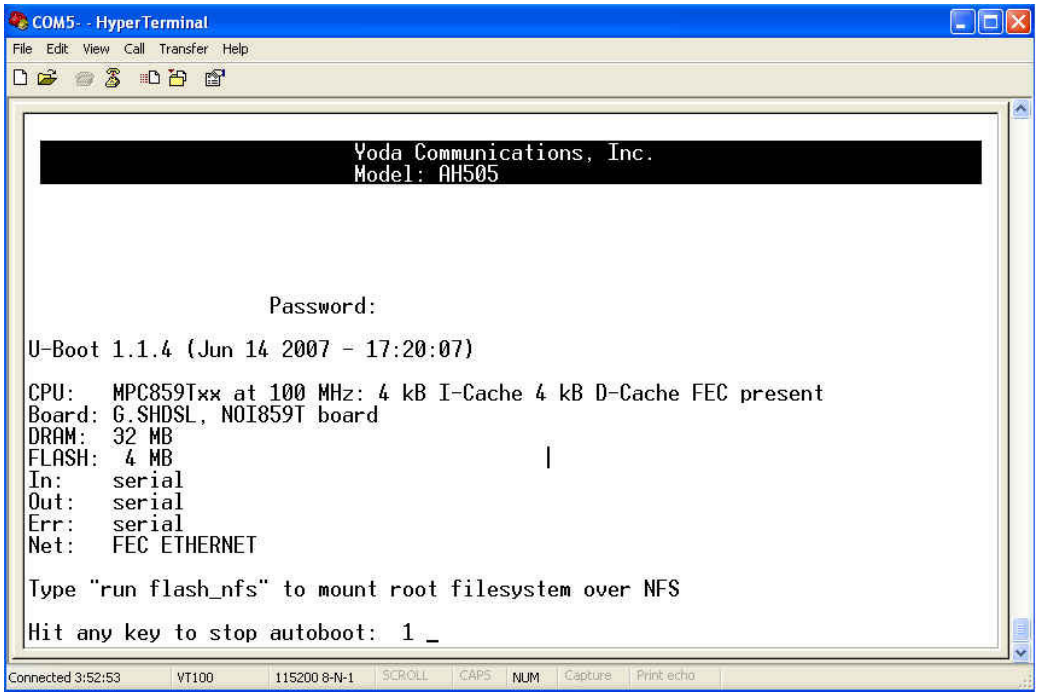


Items	Description
TFTP server	: Enter the IP Address of TFTP Server(AH505's IP).
Operation	: Click the check box for " **Upload** ".
Format	: Select binary for file format.
Local file name	: Specify the targeted file through directory and path associated.
Upload Now ---	: Click this button to proceed the update.

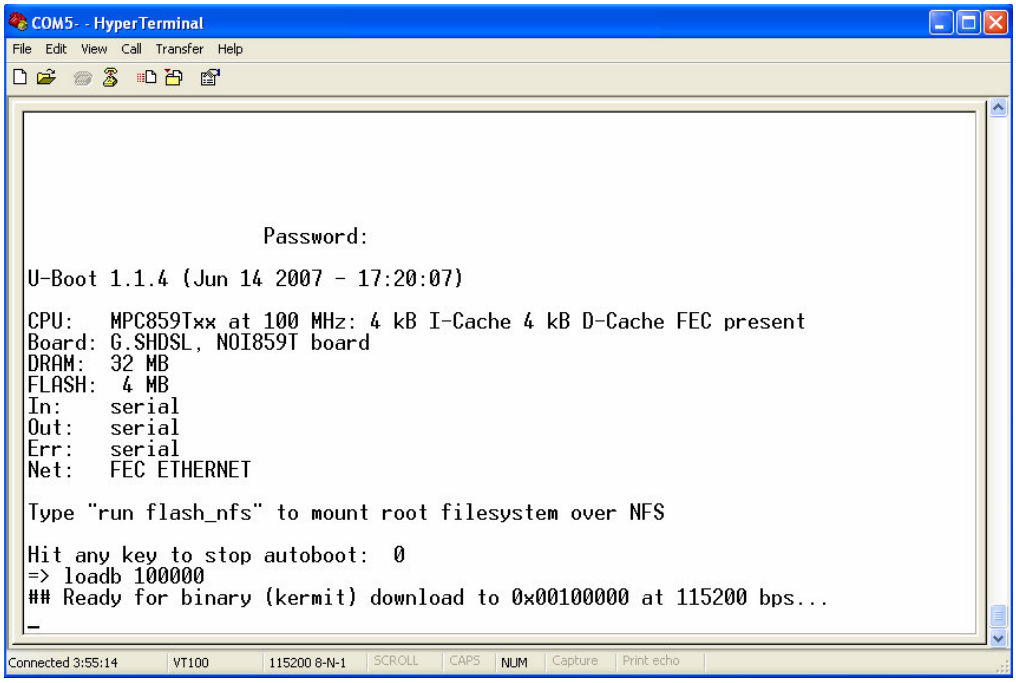
Step 7: Click “Upload Now…” to upgrade firmware. Code in AH505 will be upgraded after several minutes, and automatically reboot device.

5.2 Upgrade using Serial port

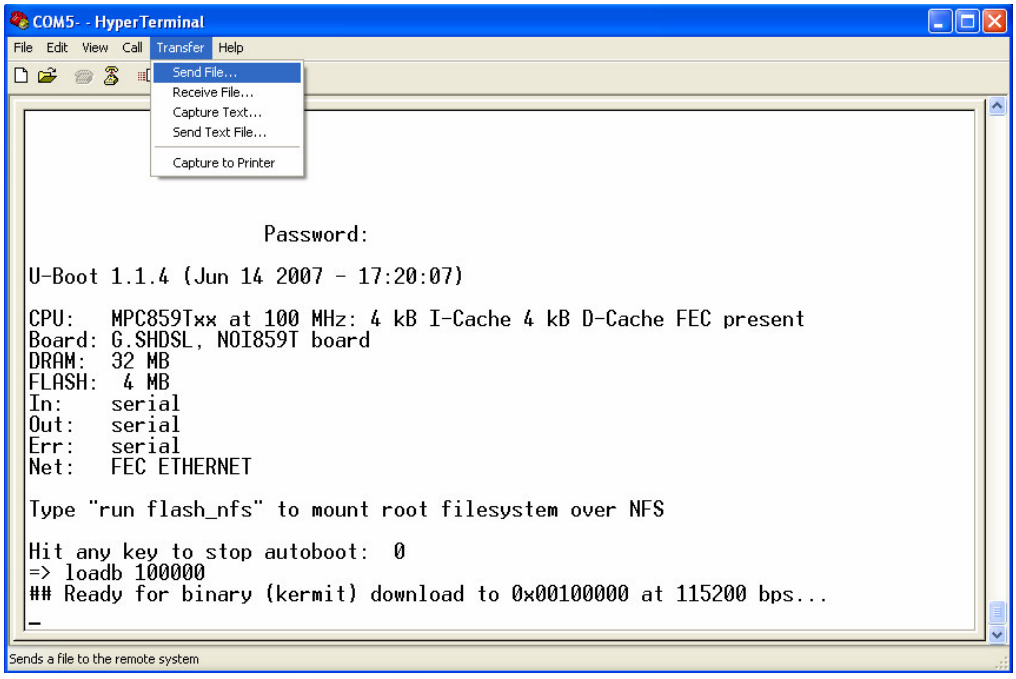
Step 1: Connect PC and AH505 with RS-232 cable.
Step 2: Using Hyper Terminal of Windows to check AH505 status. The default setting of Hyper terminal is 115200 bps, 8 data bit, No Parity, 1 stop bit.
Step 3: Power on the AH505, then PC will show following screen



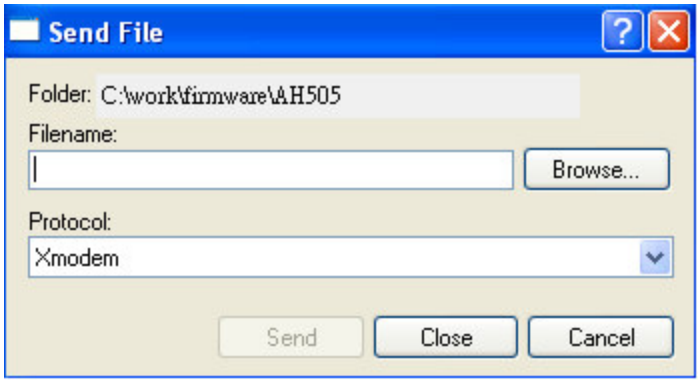
Step 3: Press “Enter” key immediately when you see this message “Hit any key to stop autoboot: “ then you can see the prompt “=>”. Enter “loadb 100000” and press “Enter” key you can get following screen



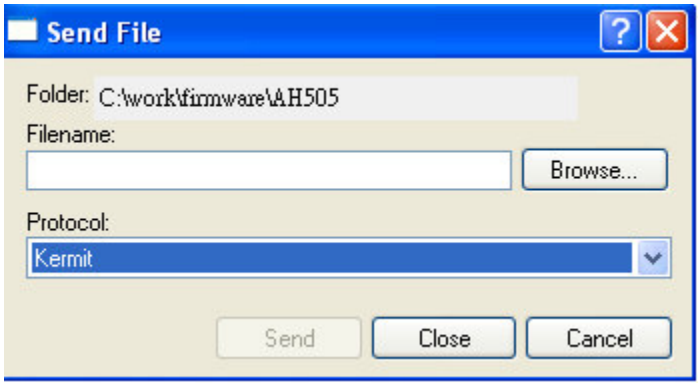
Step 4: Select “Send File…” under the tool’s bar of “Transfer” as following screen.



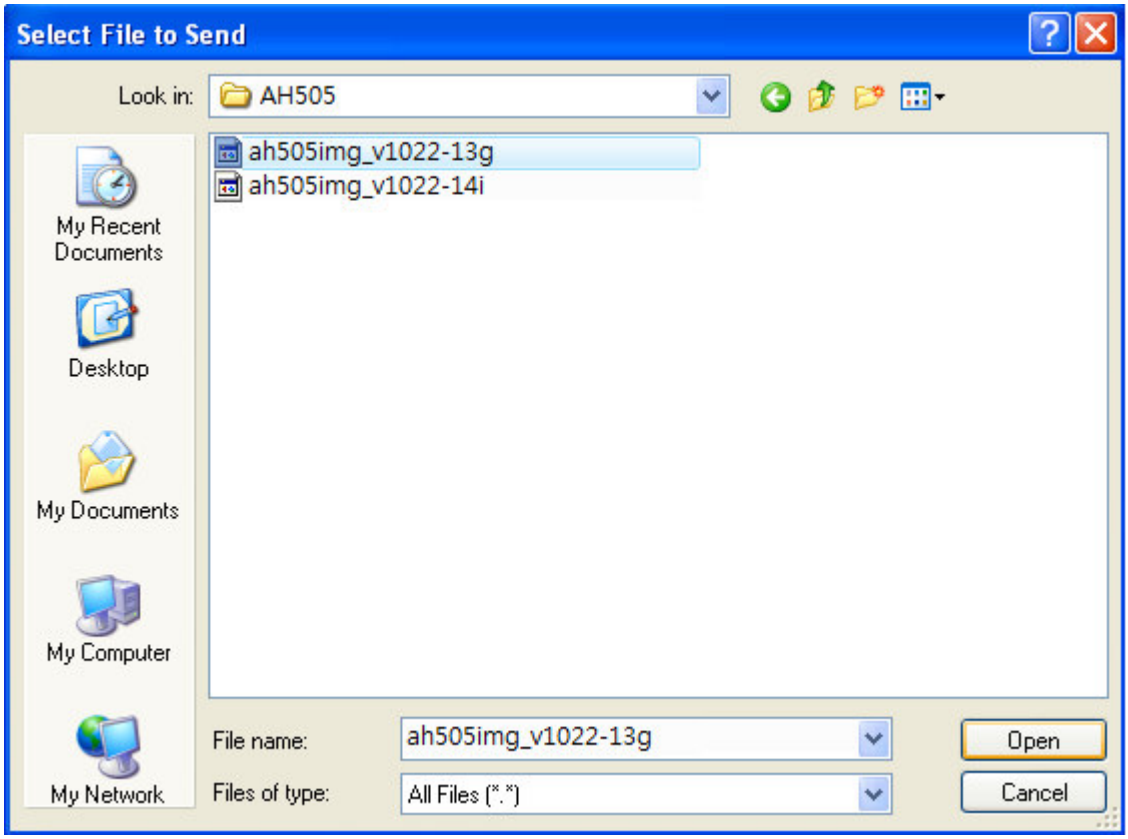
Step 5: Then you can get the following screen:



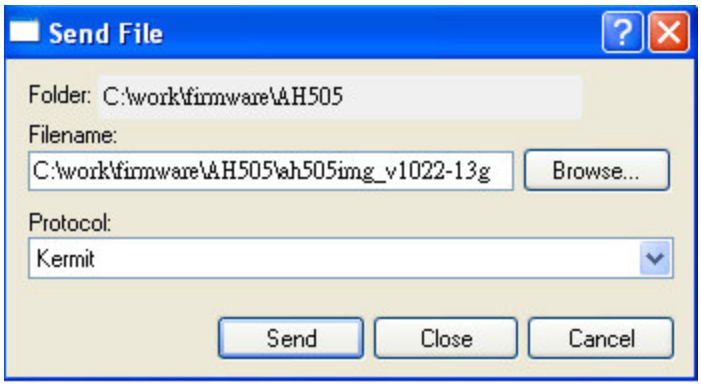
Step 6: Select “Kermit” Protocol as the following screen:



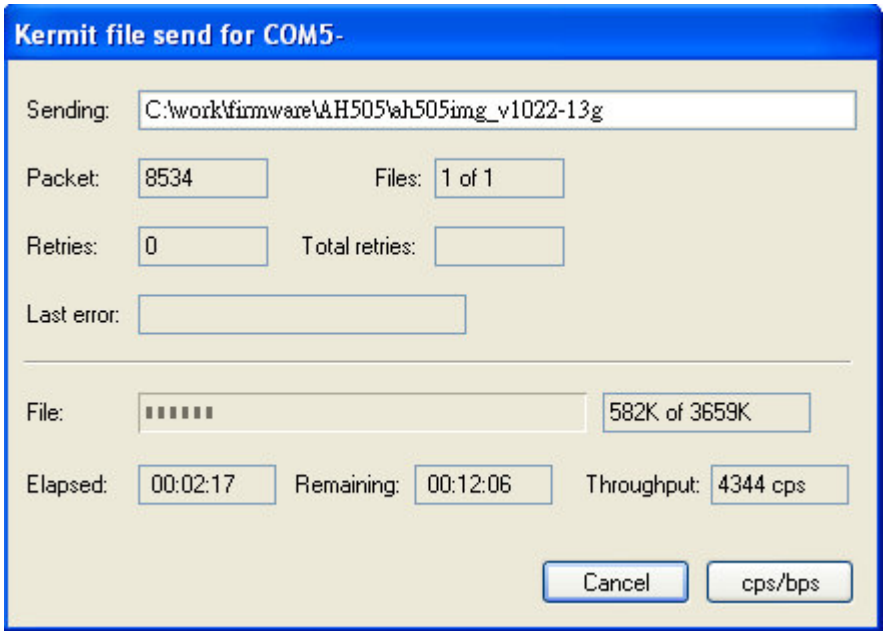
Step 7: Click “Browse” for select file to send as the following screen:



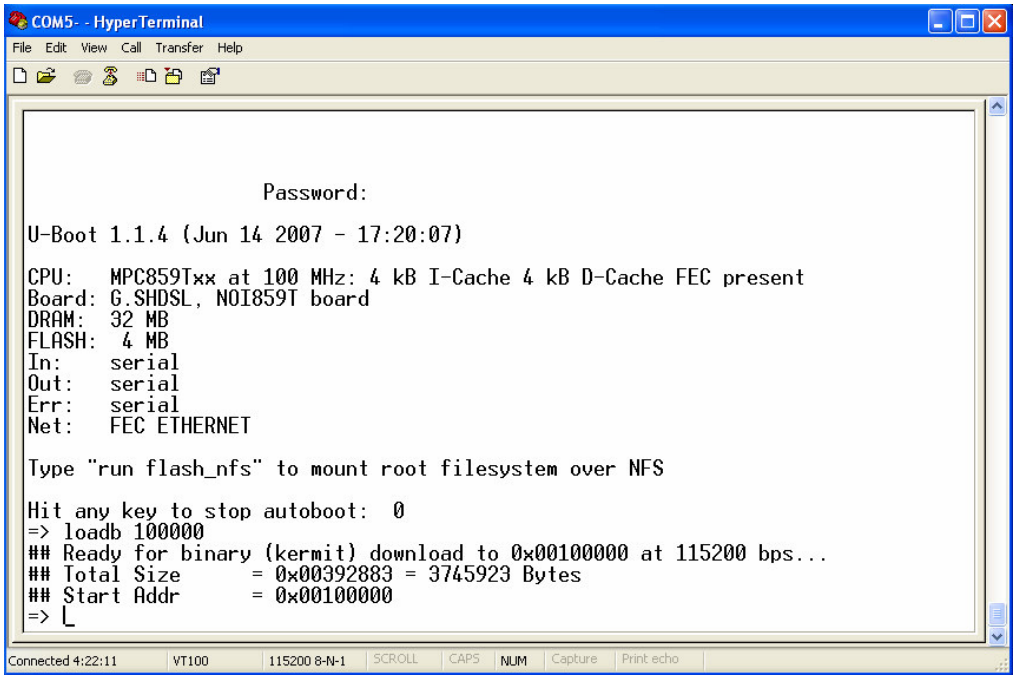
Step 8: Click “OPEN”, you can get the following screen:



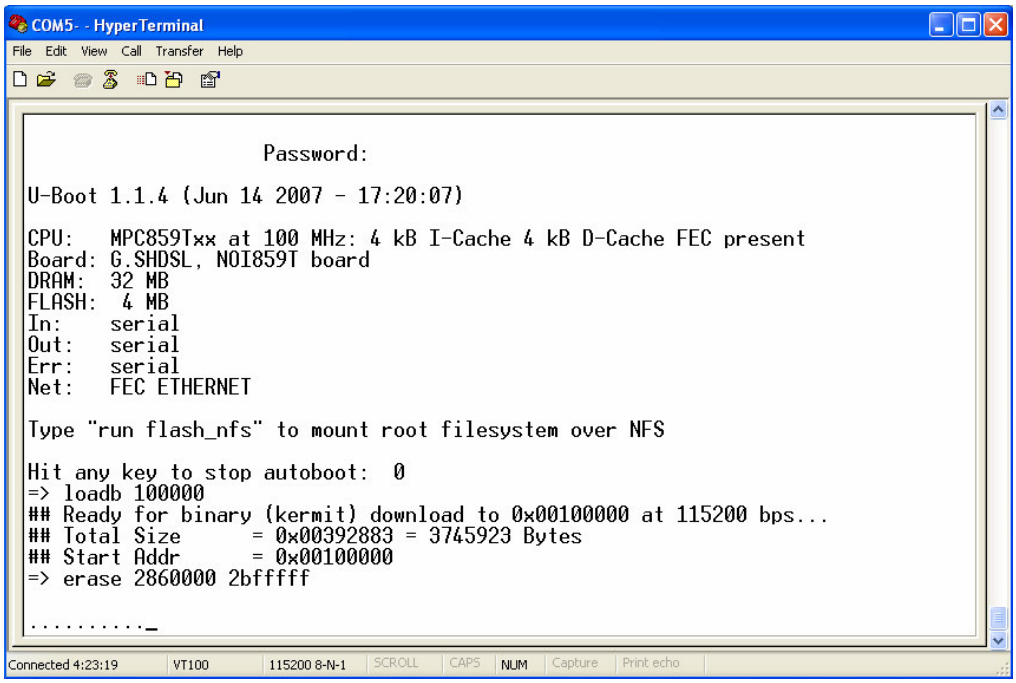
Step 9: Click “Send” you can get the following screen:



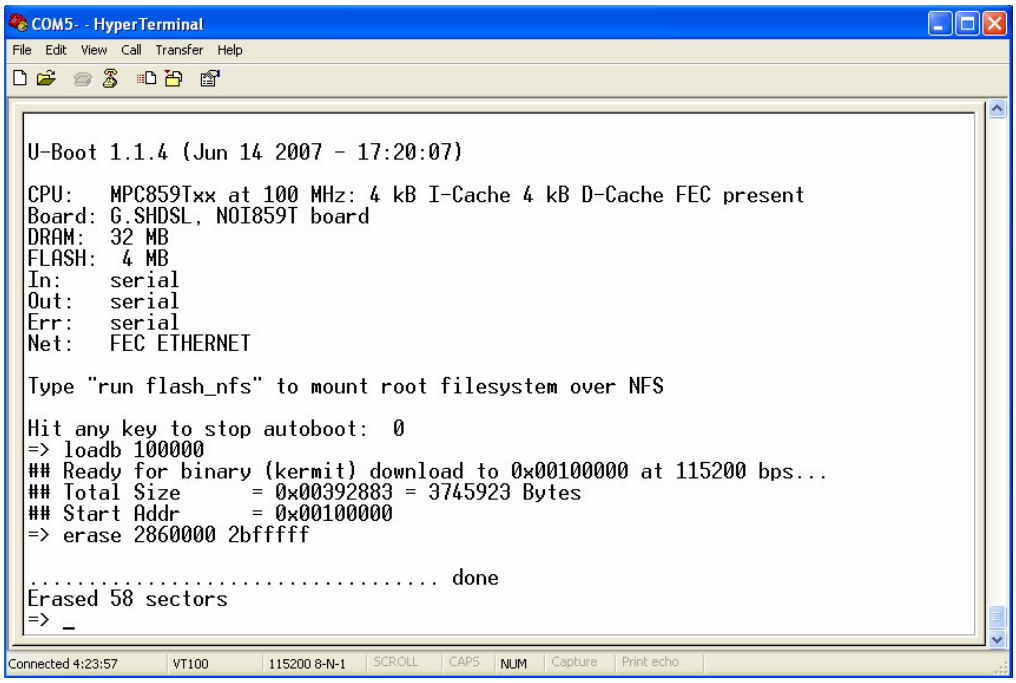
Step 10: Code in AH505 will be uploaded. It will take about 18~20 minutes. The above screen will automatically disappear after Code was completely updated and you can get the following screen:



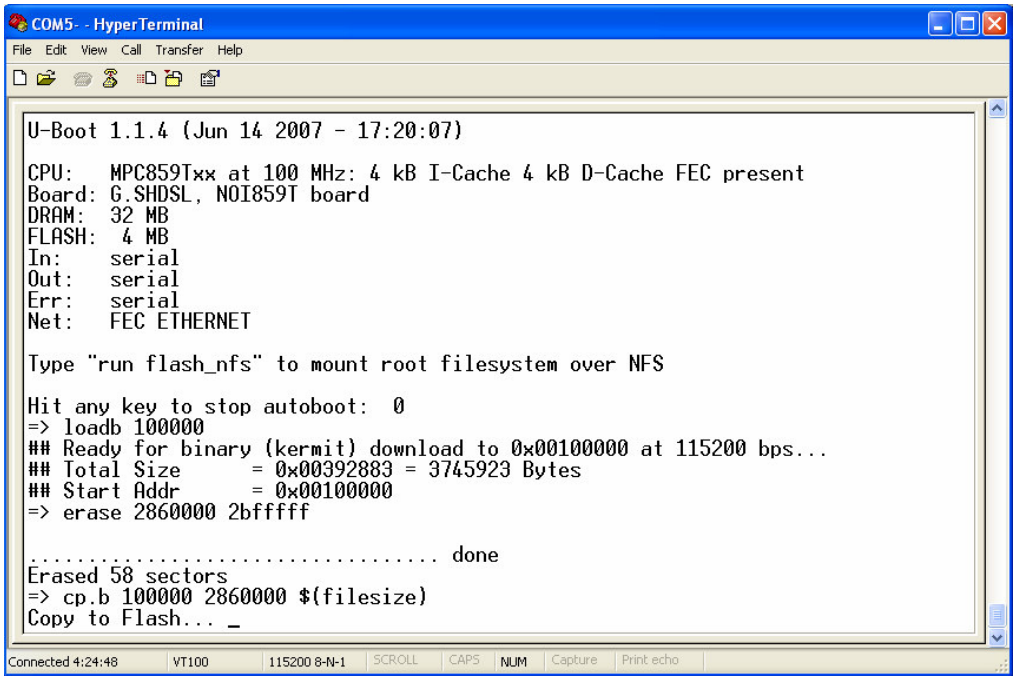
Step 11: Enter “erase 2860000 2bfffff “ as the following screen:



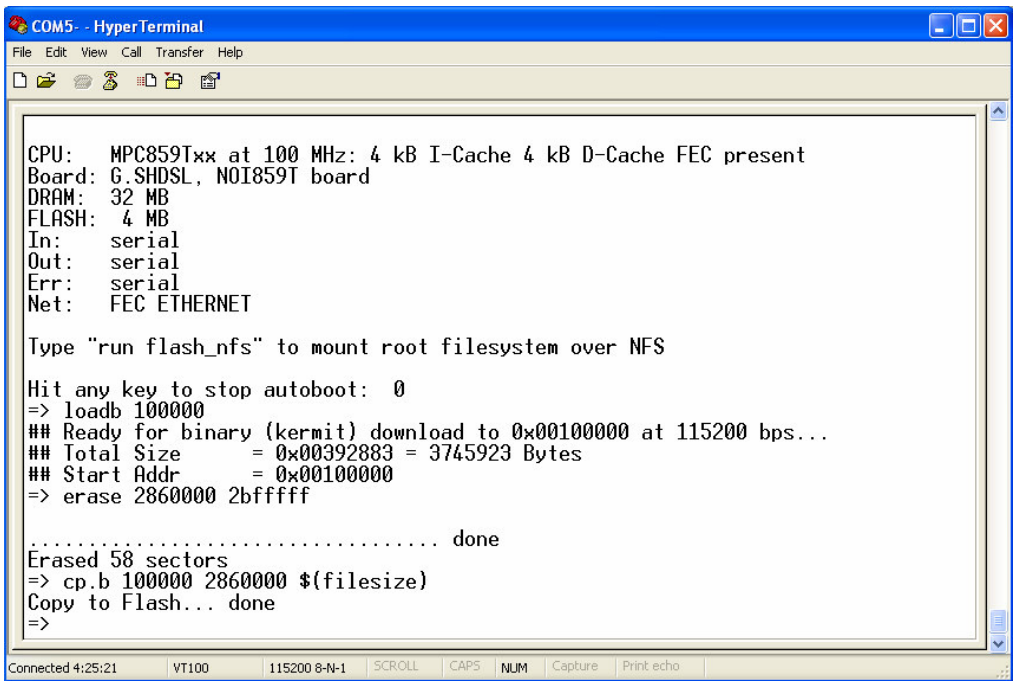
Step 12: It will take about few minutes to erase flash memory and the screen will display “done” message as the following:



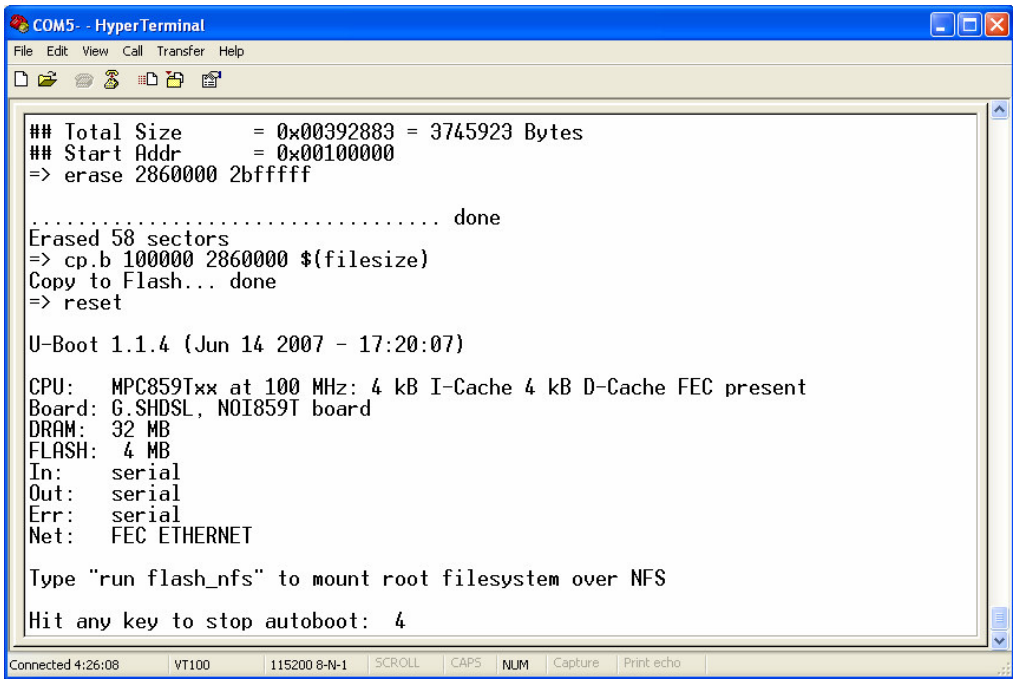
Step 13: Enter “cp.b 100000 2860000 $(filesize)” as the following screen:



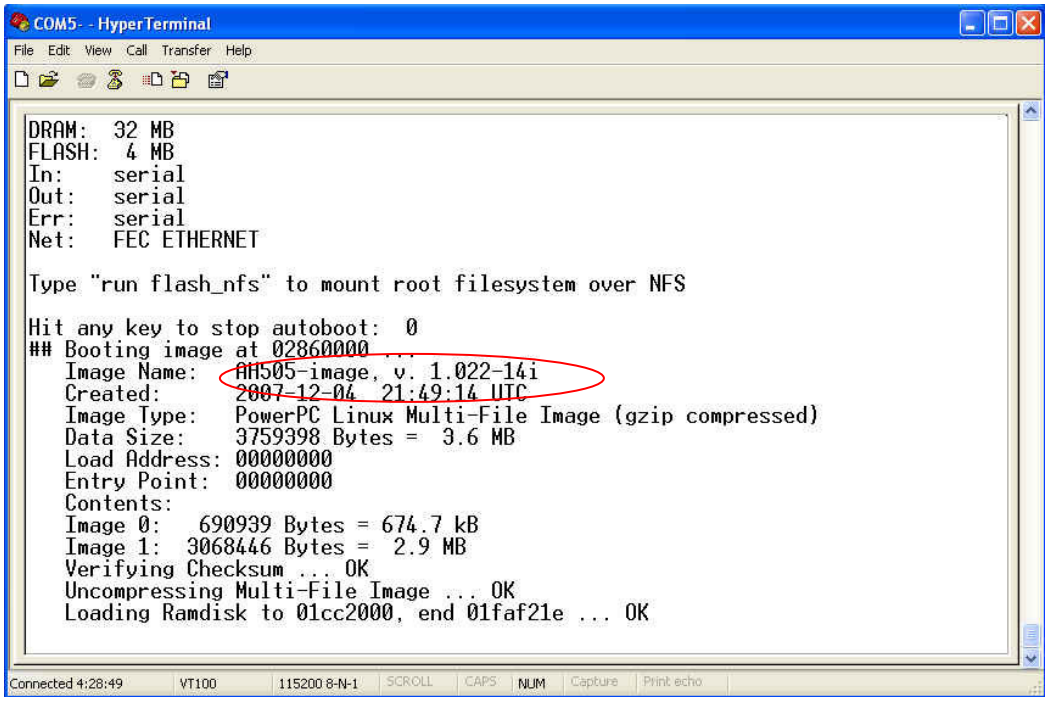
Step 14: It will take about few minutes to copy flash memory and the screen will display “done” message as the following:



Step 15: Enter “reset “ as the following screen:



Step 16: The system will automatically reboot then you can see the new version that you had updated it before as the following screen:

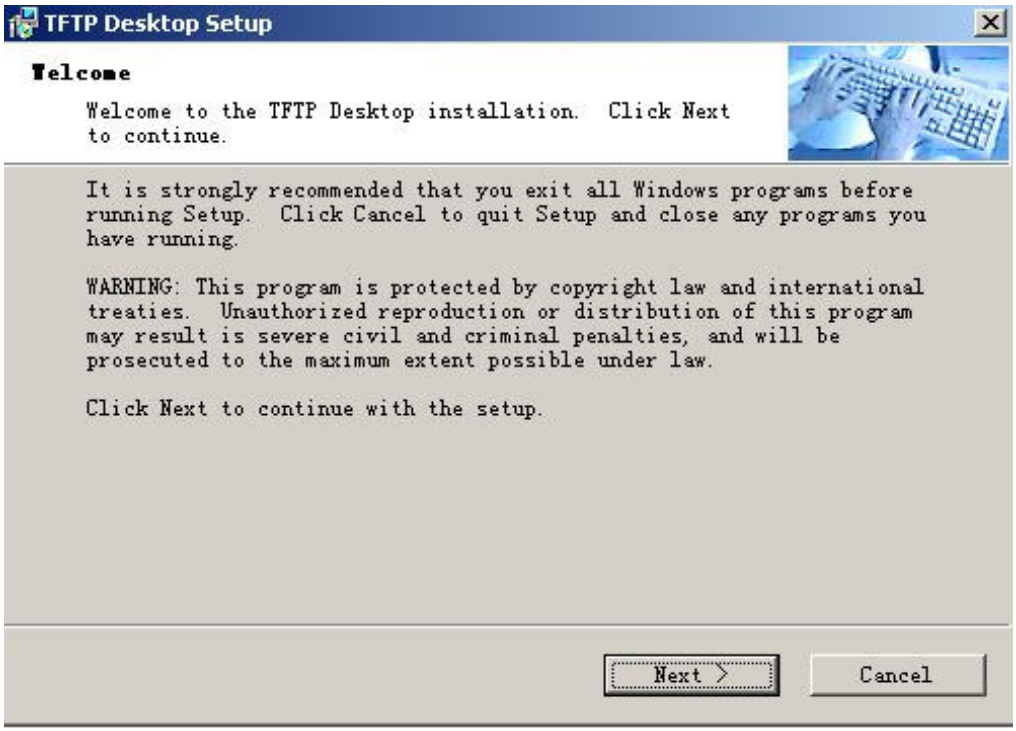


Appendix

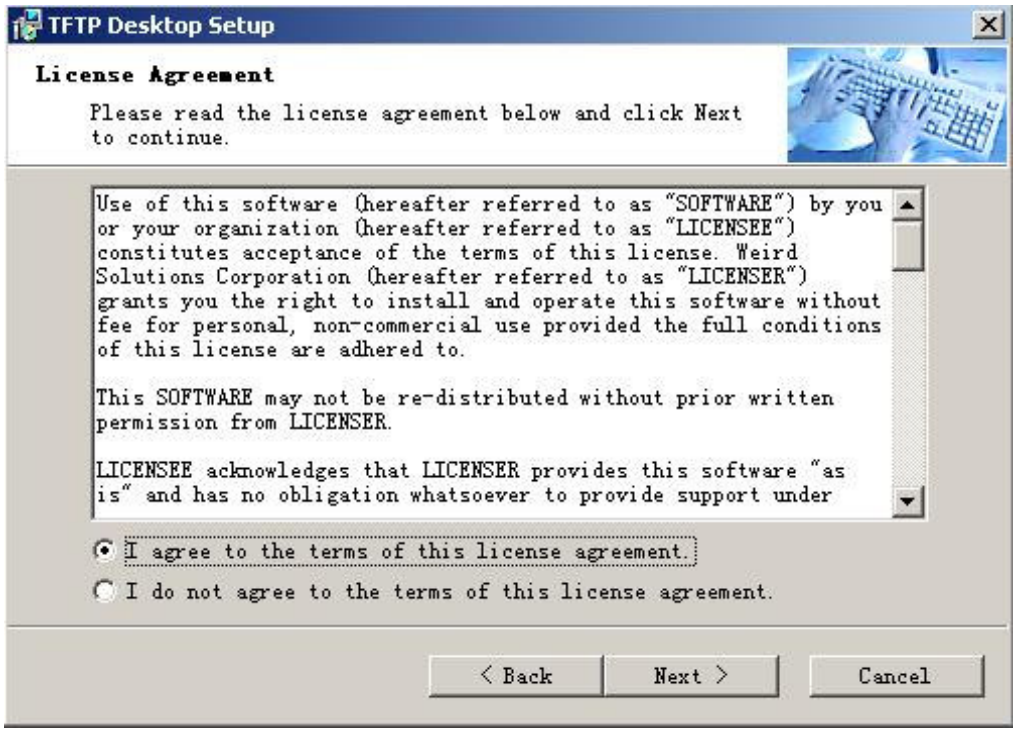
Appendix A:Install TFTP software

Step 1: Install the software of TFTP, double click the icon of tptpd_ftp.exe as following:

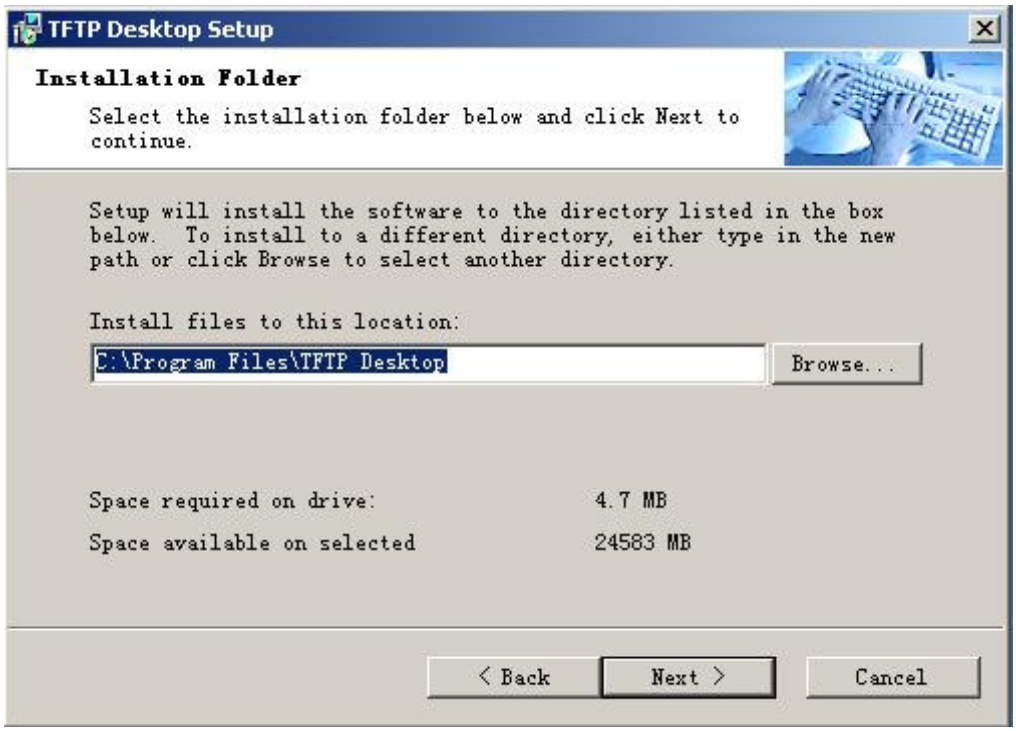
Step 2: Then the PC will show installing icon as following:



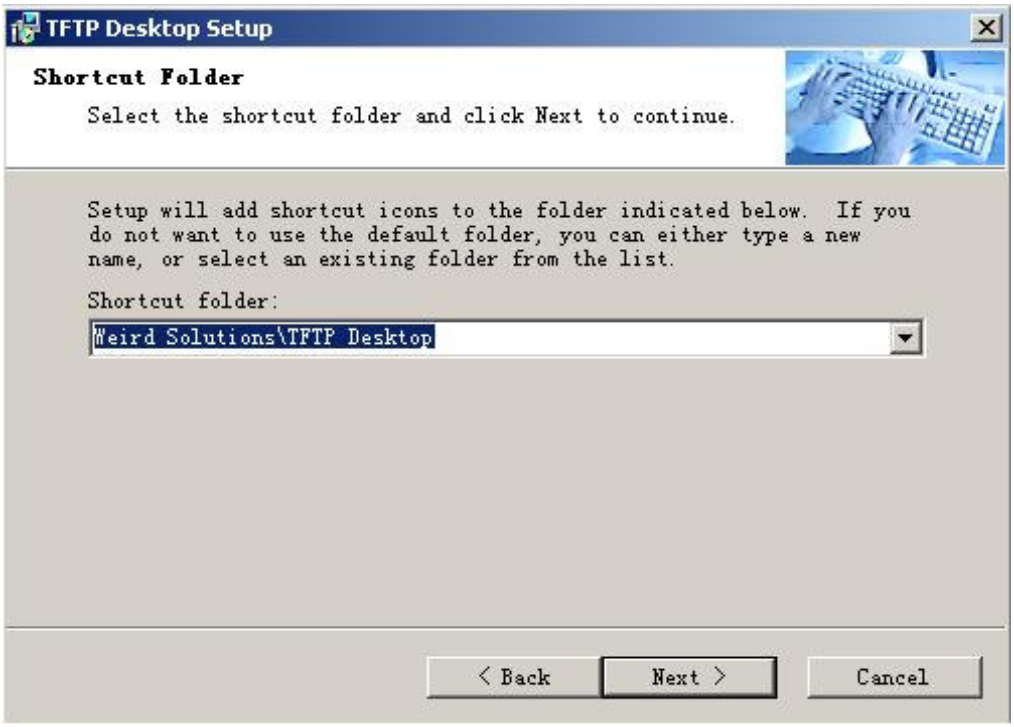
Step 3: Click “Next”, the PC will show following screen



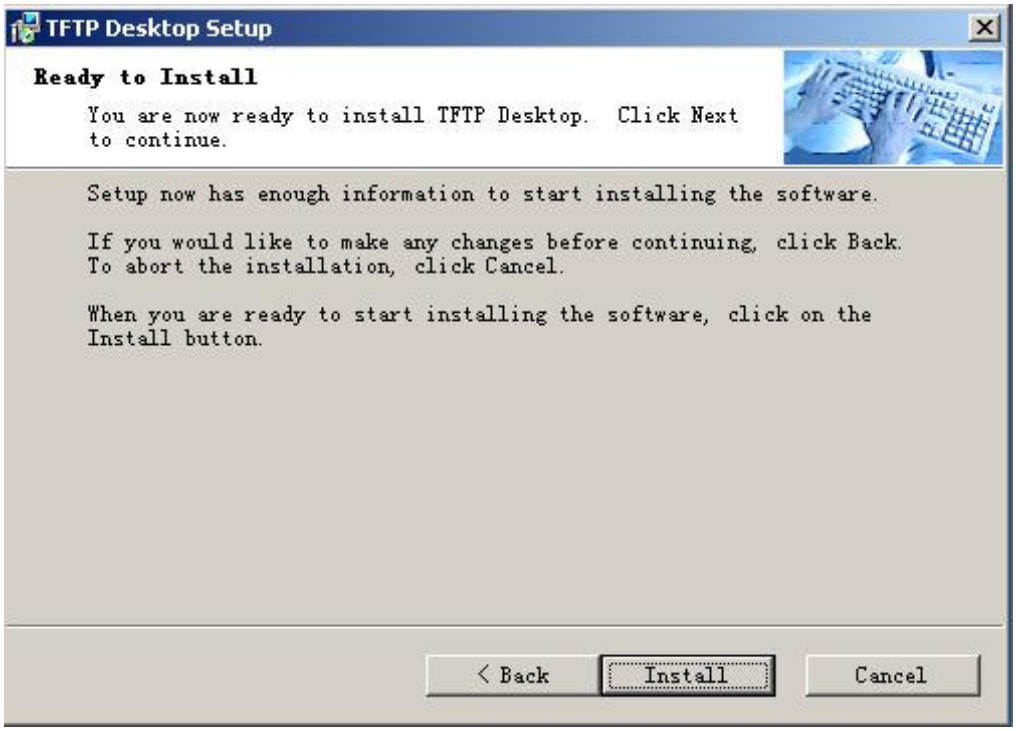
Step 4: Select “I agree to the terms of this license agreement.” and click “Next” to get following screen:



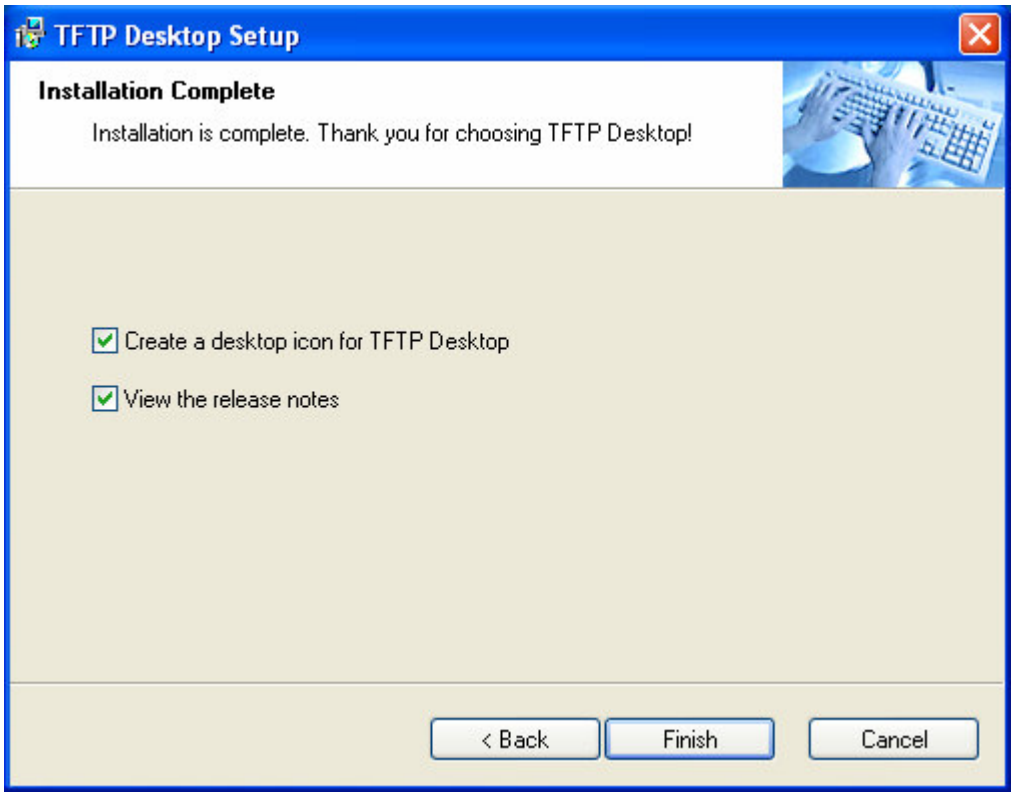
Step 5: Click “Next” and to get following screen:



Step 6: Click “Next” and to get following screen:



Step 7: Click “Install” and to get following screen:



Step 8: Then click “Finish”, The TFTP software has been installed completely.