

DrayTek

VigorTalk ATA

User's Guide



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Safety Instructions and Approval

Safety Instructions

1. Read the installation guide thoroughly before you set up the router.
2. The router is a complicated electronic unit that may be repaired only by authorized and qualified personnel. Do not try to open or repair the router yourself.
3. Do not place the router in a damp or humid place, e.g. a bathroom.
4. The router should be used in a sheltered area, within a temperature range of +5 to +40 Celsius.
5. Do not expose the router to direct sunlight or other heat sources. The housing and electronic components may be damaged by direct sunlight or heat sources.
6. Keep the package out of reach of children.
7. When you want to dispose of the router, please follow local regulations on conservation of the environment.

Warranty

We warrant to the original end user (purchaser) that the router will be free from any defects in workmanship or materials for a period of three (3) years from the date of purchase from the dealer. Please keep your purchase receipt in a safe place as it serves as proof of date of purchase. During the warranty period, and upon proof of purchase, should the product have indications of failure due to faulty workmanship and/or materials, we will, at our discretion, repair or replace the defective products or components, without charge for either parts or labor, to whatever extent we deem necessary to restore the product to proper operating condition. Any replacement will consist of a new or re-manufactured functionally equivalent product of equal value, and will be offered solely at our discretion. This warranty will not apply if the product is modified, misused, tampered with, damaged by an act of God, or subjected to abnormal working conditions. The warranty does not cover the bundled or licensed software of other vendors. Defects which do not significantly affect the usability of the product will not be covered by the warranty. We reserve the right to revise the manual and online documentation and to make changes from time to time in the contents hereof without obligation to notify any person of such revision or changes.

European Community

Hereby, we declare that the router is in compliance with the essential requirements and other relevant provisions of R&TTE Directive 99/5/EC.

Be A Registered Owner

Web registration is preferred. You can register your Vigor router via <http://www.draytek.com/>. Alternatively, fill in the registration card and mail it to the address found on the reverse side of the card.

Firmware & Tools Updates

Due to the continuous evolution of DrayTek ATA technology, all routers will be regularly upgraded. Please consult the DrayTek web site for more information on newest firmware, tools and documents. <http://www.draytek.com/>

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1 Introduction

1.1 Brief Overview

The VigorTalk Analog Telephone Adapter(ATA) is an international-recognized SIP standard compliance that helps to migrate legacy analog telephones, analog conference speakerphones, and fax machines* to modern IP devices and delivers feature-rich carrier-class-clear Voice over IP service to small-businesses and residences. The VigorTalk ATA enables customers to extend their investment by leveraging the existing cable or DSL Internet connection for lower Internet phone rates and all of the other available special features from their service provider, such as Caller ID, Call Waiting etc.

With easy-installation for end users and easy-provision/maintenance for service providers, the VigorTalk ATA has the capabilities to be large-scale deployed, remote managed, and dynamic software upgrades by service provider to offer customized services to the users.

To interface between telephones and LAN, the VigorTalk ATA features one standard telephone port for connection to the existing phones or fax machines* and one 10/100Base-T Ethernet port for connection to Internet via router/modem. Besides embedded WebGUI for complex advanced configuration, The VigorTalk ATA also provides complementary built-in Interactive Voice Response(IVR) system to enable end users to quick basic setup via key pad.

*future release

1.2 Highlights

VoIP

- Protocol
SIP(RFC3261), RTP/RTCP
- G.168, G.165 Line Echo-cancellation
- Gain Control
- Voice Codecs:
G.711 A/μ law ; G.729 A/B
- Voice Feature:
VAD (Voice Activity Detection)
CNG (Comfort Noise Generation)
Dynamic Jitter buffer
- DTMF Generation and Detection
- Packet Loss Concealment
- Caller ID (Bell core, ETSI FSK mode)
- FXS interface

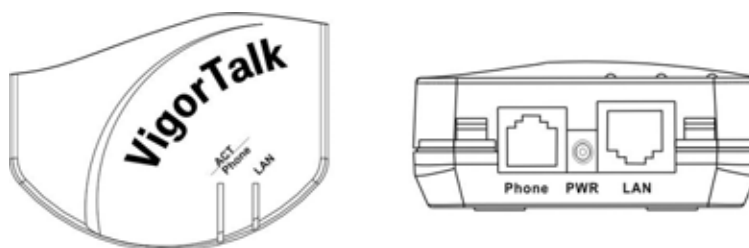
Networking Features

- DHCP client (RFC 2131) /PPPoE
/Static IP /PPTP
- Automated NAT traversal (STUN,
RFC3489)

Management

- Web-based User Interface
- Firmware upgrade via TFTP (RFC
1350)
- Convenient Internet Access Profiles
- Telephone Keypad Configuration
- Auto provision

1.3 Front Panel LEDs and Rear Panel Interfaces



LED	Status	Explanation
Status	green	Solid light when the phone is off hook.
		Blinking when the unit is running properly.
	orange	Solid light when the unit is under configuration by phone key pad.
		Blinking during VoIP communication.
LAN	on	Ethernet link is ready.
	blinking	Ethernet packets are transmitting.

Interface	Description
LAN	Connect the cable/DSL modem or network devices to access the Internet.
PWR	Connect the included power adapter to the power outlet.
Phone	Connect to the analog phone for VoIP communication.

1.4 Packet Contents



Quick Start Guide



CD



UK-type power adapter



EU-type power adapter



USA/Taiwan-type power dapter



AU/NZ-type power adapter

2 Installation and Configuration

If this product is provided to you by the service provider or network administrator, pre-configuration of network and service settings may have been applied. You, as end-user, may be limited to access local configuration settings. Then you should follow the installation instruction provided by your provider.

Depending on the service policy, if end user configuration is permitted, please follow the major instructions described below. For more detail, please refer to the VigorTalk User's Guide.

To locally configure the VigorTalk, you should have the equipments and information below:

1. A touch tone telephone
2. Ethernet-based Cable or DSL modem or General ADSL router, e.g. Vigor 2900
(or a router plus a Ethernet-based Cable or DSL modem will work equally)
3. An established Internet account from an Internet Service Provider (ISP), including
 - ◆ IP Address Subnet and Gateway Address or DHCP availability.
4. SIP Proxy Address and Registration Information from SIP Registrar (e.g. DrayTEL)

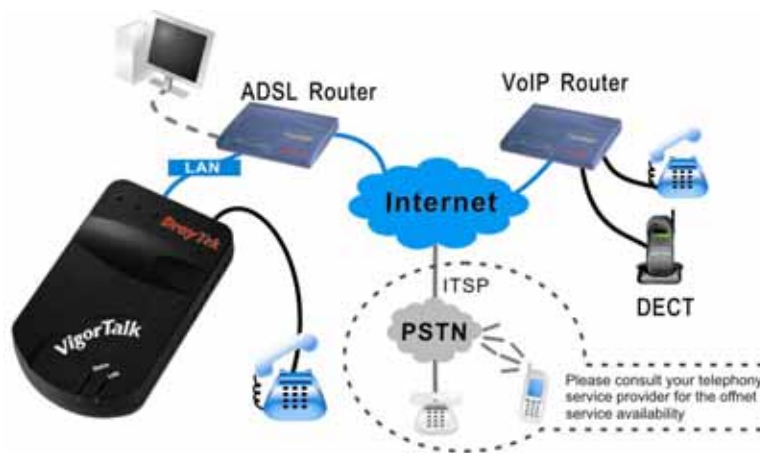
DrayTek provides two interfaces for configuration. You may need to use both for initial installation.

- ◆ DrayTek IVR(Interactive Voice Response)*
- ◆ Web GUI

* Interactive Voice Response (IVR) is an automated voice system which allows caller can navigate the function menus created by providers using their telephone keypad.

2.1 Connect VigorTalk to Your Phone and Network

2.1.1 With General ADSL Router



If the router act as an DHCP server, to use the Web GUI, you only need to connect both the PC and VigorTalk to the router. They should be assigned IP addresses at the same subnet by the router.

- 1 Use a standard RJ-45(Ethernet) cable to connect the LAN port of VigorTalk and the router.
- 2 Use a standard RJ-11 (telephone) cable to connect the Phone port of VigorTalk and the touch tone telephone.
- Note: Do not connect RJ-11 (telephone) cable to the wall jack**
- 3 Connect the power adapter (included) to the receptor of VigorTalk and plug the other end of the power adapter to a wall outlet to power on the unit.
- 4 Via the phone key pad, press “***#” to enter the VigorTalk IVR. You will hear the welcome message.
- 5 Press “41#” to “Check the IP Address”. You will hear the IP address of VigorTalk. Write down and then hang up.

For further detail of IVR, please refer to the section 2.3.

- 6 Open your Web browser and enter [http://\(VigorTalk IP Address that you heard\)](http://(VigorTalk IP Address that you heard)). Enter the default password “vigortalk” and leave the administrator filed blank in the window.
- 7 You may start configure VigorTalk via WebUI now.

For more detail of Web UI, please refer to the section 2.2.

2.1.2 With Ethernet-based Cable or DSL Modem



To use Web GUI, you need to set the IP address of your VigorTalk and PC in the same subnet. (For example, 192.168.1.1 for VigorTalk and 192.168.1.2 for the PC)

- 1 Use a standard RJ-45(Ethernet) cable to connect the LAN port of VigorTalk and the Ethernet adapter of the PC.
 - 2 Use a standard RJ-11 (telephone) cable to connect the Phone port of VigorTalk and the touch tone telephone.
- Note: Do not connect RJ-11 (telephone) cable to the wall jack**
- 3 Connect the power adapter (included) to the receptor of VigorTalk and plug the other end of the power adapter to a wall outlet to power on the unit.
 - 4 Via the phone key pad, press “***#” to enter the VigorTalk IVR. You will hear the welcome message.
 - 5 Press “20#” to enter “Set Static IP”. Please follow the voice instruction to set IP Address(e.g.192.168.1.1), Subnet Mask, Gateway and Domain Name Server. Then hang up.

For further detail of IVR, please refer to the section 2.3.

- 6 Set the IP address of the PC accordingly (e.g.192.168.1.2) in the network connection configuration.
- 7 Open your Web browser and enter http:// (VigorTalk IP Address 192.168.1.1). Enter the default password “vigortalk” and leave the administrator field blank in the window.
- 8 You may start configure VigorTalk via WebUI now. When finish, please remember to move and connect the RJ-45(Ethernet) cable to the LAN port of the modem, instead of the Ethernet adapter of the PC.

For more detail of Web UI, please refer to the section 2.2.

2.2 VigorTalk Web GUI

The VigorTalk has an embedded web GUI and comes with DHCP Enabled. By Following the procedure described in the previous section, you may have accessed the Web GUI and see the main page (as shown in section 2.2.1 below). In the following sections, the detail description of settings in Web GUI will be provided

2.2.1 System Information

The screenshot displays the VigorTalk Web GUI with three tabs: **Info**, **LAN**, and **VoIP**. The **Info** tab is active, showing system details. Below this, the **Provision** section contains configuration rules. The **LAN** section shows network settings, and the **VoIP** section shows registration and system status. A **Firmware Upgrade** dialog box is overlaid on the right, prompting the user to select a firmware file and click 'Upgrade'. At the bottom of the main interface are buttons for 'Refresh', 'Reboot', and 'F/W Upgrade'.

Tab	Section	Parameter	Value
Info	System Information	Model	VigorTalk
		Firmware Version	v2.5.3
		Build Date/Time	Wed Dec 1 17:50:3.17 2004
		LAN MAC Address	00-50-7F-22-22-22
Provision	Profile_Rule	http://192.168.1.12/draytek/\$MA/test.cfg	
	Upgrade_Rule	(lv2.5.3RC2)?http://192.168.1.12/draytek/ata00001.all	
LAN	Network Settings	LAN Connections	DHCP Client
		IP Address	192.168.1.1
		Default Gateway	192.168.1.118
		Primary DNS	192.168.1.118
		Secondary DNS	194.98.0.1
VoIP	VoIP Settings	Registration Status	NO
		System Status	IDLE
		Codec	729A/B
		PeerID	
		Connect Time	0
		Volume Gain	5

Section	Parameter	Value
Provision	Profile_Rule	http://192.168.1.12/draytek/\$MA/test.cfg
	Upgrade_Rule	(lv2.5.3RC2)?http://192.168.1.12/draytek/ata00001.all
LAN	LAN Connections	DHCP Client
	IP Address	192.168.1.1
	Default Gateway	192.168.1.118
	Primary DNS	192.168.1.118
	Secondary DNS	194.98.0.1
VoIP	Registration Status	NO
	System Status	IDLE
	Codec	729A/B
	PeerID	
	Connect Time	0
	Volume Gain	5

Firmware Upgrade - Microsoft Internet Explorer	
Firmware Upgrade	
Select a firmware file.	
C:\Release 2.5.3\ata00253.rst	[Browse...]
Click Upgrade to upload the file.	
[Upgrade]	

Button
Refresh
Reboot
F/W Upgrade

Info

Shows the information of **Model** name, **Firmware Version** and **Build Date/Time**, and **LAN MAC Address**.

Provision

Shows the paths of **Profile Rule** and **Upload Rule**.

LAN

Shows the type of **LAN connection**, **IP Address** of the LAN interface, IP Address of **Default Gateway**, **Primary** and **Secondary DNS**.

VoIP

Shows **Registration Status**, **System Status**, **Codec** type, **PeerID**, **Connect Time** and **Volume Gain**

F/W Upgrade

Specify the location of upgrade firmware.

2.2.2 LAN

LAN Profile and Profile Name

Set up profiles and profile names for a set of configuration. Once you set, you can directly set connection profile via IVR without getting into Web GUI.

Time Server and Time Zone

Select the server where you can obtain precise time from and select appropriate time zone for your location.

LAN Connection

DHCP Some Cable ISPs require user to provide or specify MAC address for access authentication purpose. You can manually enter the MAC address in the MAC Address fields

Static IP **WAN IP address:** this is the IP address assigned by your ISP for your router. You shall specify the IP address of the router here. e.g. 172.16.2.84

Subnet Mask: an address code that determines the size of the network; this is the subnet mask of the router, when seen by external users on the Internet (including your ISP). The subnet mask is provided by your ISP. e.g. 255.255.255.0

Gateway IP Address: an IP address forwards Internet traffic from your local area network (LAN) . e.g. 172.16.2.5

DNS Server IP address: you must specify DNS server IP address here if your ISP has the said address. If you do not specify it, the router will automatically apply default DNS Server IP address: 194.109.6.66 to this field.

PPPoE Dial on Demand : The router will ONLY connect to your ISP on demand. By “on demand”, it means when any LAN user attempt to send data onto the Internet. When there is no data traffic, the router will close the connection to the ISP because there is no demand.

Idle timeout: This is the time setting If there being no Internet traffic for a period, for example 10 minutes.

Always On: The router will keep a permanent connection to the ISP automatically.

PPTP Obtain an IP address automatically: Set the WAN interface as a DHCP client that will ask for the IP network settings from the DHCP server or PPTP-enabled DSL modem.

Specify an IP address: If you are not sure whether there are any DHCP services on the WAN interface, you can manually assign an IP address to the interface. Note that the IP Address and Subnet Mask should be assigned within the same network as the PPTP-enabled DSL modem.

2.2.3 Voice

Info	LAN	VoIP
SIP		
SIP Port	:	5060
Registrar	:	
Proxy	:	
Ports Setting		
<input type="checkbox"/> Use Registrar		
Name	:	p0
Password	:	
Expiry Time	:	2 hours
NAT Pass Through		
<input type="checkbox"/> Enable		
STUN Server	:	
Codecs		
Default Codec	:	G.729A/B (8Kbps)
Packet Size	:	20ms
DTMF		
<input checked="" type="radio"/> InBand <input type="radio"/> OutBand Payload Type: 101 <input type="radio"/> SIP INFO)		
RTP		
Dynamic RTP port start	:	10050
Dynamic RTP port end	:	15000
Volume Gain		
Mic Gain (1-10)	:	5
Speaker Gain (1-10)	:	5

SIP

- SIP Port** The port number used to send/receive SIP message for building a session. The default value is 5060 and this must match with the peer Registrar when making VoIP calls
- Registrar** Enter the domain name (or IP address) of your registered SIP Registrar server. Enter the domain name (or IP address) of your registered SIP Registrar server.
- Proxy** You can enter domain name or IP address of SIP proxy server.

Port Setting

Use Registrar: With the Registrar domain entered above, check this box to let the VigorTalk use the SIP Registrar.

- Name** This field contains a name or a number which easily let you identify the person who you want to call. It can also be the name for SIP display.
- Password** Enter the password when you use a SIP registrar server which needs password.
- Expiry** Time: The time duration that your SIP registrar server keeps your registration record. Before the time expires the Vigor will issue another register message to registrarserver again.

NAT Pass Through

STUN Server: This setting defines whether the VigorTalk NAT traversal mechanism is enabled (by checking checkbox) or not. If activated, please also specify IP address of STUN server. Under this mode, VoIP communication from VigorTalk can pass through with the specified STUN server behind firewall/NAT.

Codec

- Default Codec** There are different CODECs you can choose as your prefer CODEC that you wish to use. However, the real CODEC be used was negotiate with peer party before session was established. The default CODEC is G.729A/B; it occupied less bandwidth while still have good voice quality. NOTE: If your up stream speed only have 64Kbps, do not use G.711
- Packet Size** The amount of data contains in a single packets. The default value is 20 ms, it means the data packet will contains 20 ms voice information. The more data contains in a single packet the less overhead it creates but may increase.

DTMF

- InBand** Choose this one then the Vigor will send the DTMF tone as audio directly when you press the keypad on the phone, while still have good voice quality.
- OutBand** Choose this one then the Vigor will capture the keypad number you pressed and transform it to digital form then send to the other side; the receiver will generate the tone according to the digital form it receive. This function is very useful when the network traffic congestion occurs and it still can remain the accuracy of DTMF tone.
- Payload Type** Choose a number from 96 to 127, the default value was 101.
- SIP INFO** Enable this option to let the SIP proxy send DTMF tones to the detailed peer.

RTP

Specify the start and end port for RTP stream. The default values are 10050 and 15000.

Volume Gain

- Mic Gain** An adjustment in volume of present call from caller to call receiver.
- Speaker Gain** An adjustment in volume of present call from call receiver to caller .

2.3 Configure Your VigorTalk via Phone Key Pad

VigorTalk also offers instant way to configure basic settings without using PC. It is benefit for users promptly to set VigorTalk on demand.

Access the Interactive Voice Response Menu

1. Use a telephone connected to the Phone port of the VigorTalk ATA and pick up.
2. Press “***#” (The star key three times and pound key one time)
3. You will hear, “VigorTalk Configuration Menu.....”. The Status LED should be orange solid light now.

Please refer to the following chart that explains Actions, Command, Input Choices, and Description. After you select an option, always remember to press “#”(pound) key. To exit menu, just hang up.

Example : To enter the following IP address value: 192.168.1.1
(Enter IP value using phone key pad numbers and use the “*” as a dot)

1. Use the phone key pad to enter: ‘192*168*1*1#’
2. When prompted, enter 1 to save setting to configuration.
3. Enter the specific option of the next setting category to modify.
4. Hang-up the phone to cause setting to take effect.

Press ***# , "VigorTalk Configuration Menu...."

STEP 1	STEP 2	STEP 3	STEP 4
Press 01# to 05# "Internet Connection profile 1...5"	Press 1 to Save Press * to Cancel		
Press 10# "DHCP Enable"	Press 1 to Save Press * to Cancel		
Press 20# "Set Static IP"	Press 21# "Set IP Address" Press 22# "Set Subnet Mask" Press 23# "Set Gateway" Press 24# "Set Domain Name Server"	Press 1 to save Press * to cancel	"Save" "Cancel"
Press 41# "Check IP Address"	"XX.XX.XX.XX"		
Press 42 # "Check Subnet Mask"	"XX.XX.XX.XX"		
Press 43 # "Check Gateway"	"XX.XX.XX.XX"		
Press 44 # "Check Domain Name Server"	"XX.XX.XX.XX"		
Press 45 # "Check Firmware Version"	"X.X.X"		
Press 46 # "Check the Connection"	"Profile 1 to 5" "DHCP" "Static IP" "PPPoE"		
Press 50 # "Reboot the Unit"	Press 1 to confirm Press * to cancel		
Press 60# "Set CODEC"			