TVP-224HR
VoIP Gateway Router
4 Port (2FXS +2FXO)

System Integrator's User Manual
Command Line Interface Reference

TRENDnet
TRENDware, USA
What's Next in Networking

FCC Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed in accordance with the instruction manual, may cause harmful interference to radio communication. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at the user's own expense.

CE Declaration of conformity

This equipment complies with the requirements relating to electromagnetic compatibility, EN 55022 class A for ITE and EN 50082-1. This meets the essential protection requirements of the European Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

Trademarks

All brand, company and product names are trademarks or registered trademarks of their respective companies.

How to Use This Manual

This manual was designed for the technical users / system integrators of the VoIP Gateway (TVP-224HR). It introduces the more advanced command line interface, firmware upgrade and appendix information. Read this section carefully for important information about the manual's organization.

Chapter Overview

Chapter 1: Product Overview

Overview of product features, including Networking Protocols, Package Contents as well as a physical explanation of the Front and Rear Panels.

Chapter 2: Command Line Interface

This chapter describes how to access the command line interface. It also contains information about the commands used to configure the TVP-224HR.

Chapter 3: Upgrading the TVP-224HR

This chapter explains how to download new revision software and upgrade the TVP-224HR.

Appendix A: Technical Specifications

This appendix lists the TVP-224HR specifications and the assignment of pins of all the interface ports.

Appendix B: CLI Commands

This appendix provides a short description of each CLI command with a reference to the pages that contain detailed information on the command.

Appendix C: Factory Default Settings

This appendix lists factory settings of the TVP-224HR.

Appendix D: Worksheets

This appendix provides some work sheets that you may use before configuring the TVP-224HR.

Important Safety Instructions

Before you plug the TVP-224HR into an electrical outlet, carefully read all the installation instructions in Chapter 2.

For your own safety and the safety of your equipment, always take the following precautions:

- Follow instructions and warnings in the documentation.

- Never push any object through the fan vent or other openings in the equipment. Such action may produce a short circuit, causing fire, electric shock, or equipment damage.

- Keep the TVP-224HR away from all chemicals and sources of liquids.

<u>Warning</u>

- Connection of the RJ45 connector from a TVP-224HR to TNV circuits can cause permanent damage to the TVP-224HR.

- Incorrectly connecting telephony devices to the RJ11 port on the Telephony Interface Module can cause permanent damage to the module.

Documentation Abbreviations

Throughout this guide, the user will come across a number of abbreviations that are common throughout the industry. The user should be familiar with the following abbreviations:

ATPM	Address Translation and Parsing Manager
CLI	Command Line Interface
DSP	Digital Signal Processor
DTMF	Dual Tone Multi-Frequency
FXO	Foreign Exchange Office
FXS	Foreign Exchange Station
H.323	ITU specification for multimedia transmission over IP networks
ICMP	Internet Control Message Protocol
IMTC	International Multimedia Telecommunications Consortium
IP	Internet Protocol
TVP-221H	4-port VoIP Gateway
TVP-224HR	4-port VoIP Gateway Router
KTS	Key Telephone System
LAN	Local Area Network
NVS	Non-Volatile Storage
LED	Light Emitting Diode
PBX	Private Branch Exchange
PSTN	Public Switched Telephone Network
RTP	Real-Time Transport
TCID	Telephony Channel Identifier
TFTP	Trivial File Transfer Protocol
TIM	Telephony Interface Modules
TNV	Telephone Network Voltage
UDP	User Datagram Protocol
UTP	Unshielded Twisted Pair
VAD	Voice Activity Detection
WAN	Wide Area Network

Notation Conventions

Throughout this guide, different type styles and characters are used. These serve a variety of purposes as described below:

Convention	Description
boldface	Commands and keywords are in **boldface.**
italic	Arguments for which you supply values are in italics.
courier	Messages that the TVP-224HR CLI displays are in plain courier font.
[ ]	Elements in square brackets are optional.
{ x | y | z }	Alternative but required elements are grouped in braces ({ }) and separated by vertical bars (|).
[x | y | z]	Optional alternative keywords are grouped in brackets ([ ]) and separated by vertical bars (|).
string	A non-quoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
key	A key on the VT-100 terminal of terminal emulator. For example <Enter> denotes the Enter key

Table of Contents

Chapter 1

Overview

1

This chapter gives an overview of the 4 ports desktop version VoIP Gateway (TVP-224HR) and a detailed description of its front panel and rear panel.

1.1　Features

The TVP-224HR is a cost-effective and highly reliable analog Voice over IP (VoIP) Gateway Router that offers toll quality voice and real-time fax data over IP networks. With its embedded architecture, the gateway is ideal for VoIP applications associated with Remote Office and Branch Office (ROBO) environments. With its built-in user-friendly interface, the gateway may be installed easily and conveniently to yield immediate cost savings. One VoIP Gateway supports up to four voice or Fax communications simultaneously.

Implemented with an efficient Real-Time Operating System (RTOS) and flash memory, the TVP-224HR provides upgradeable capabilities, so it may be programmed with updated firmware locally or via the network at any time. It comes equipped with remote management capabilities, configurable signaling to work with PBX, KTS, and/or telephone. The TVP-224HR utilizes advanced VoIP related technology. It includes various voice codecs and fax algorithms, echo cancellation, Voice Activity Detection (VAD) , Comfort Noise Generation (CNG) , and lost packet recovery algorithms.

1.2　Networking Protocols

The TVP-224HR supports several industry-standard networking protocols required for voice communication. The following table describes these protocols.

Networking Protocol	Description
Internet Protocol (IP)	IP is a messaging protocol that addresses and sends packets across the network. To enable IP protocol, the TVP-224HR must have a Real IP address, subnet, and gateway assigned to it.
Voice over IP Protocol (VoIP)	VoIP enables the TVP-224HR to transfer voice communications over an IP network. The TVP-224HR employs ITU-T H.323 protocol for setting up calls with one another.
Trivial File Transfer Protocol (TFTP)	TFTP allows you to transfer files over the network. The TVP-224HR implements a TFTP client allowing you to download new revision firmware from a TFTP server. The TFTP client requires a TFTP server in your network.
Real-Time Transport (RTP)	RTP is a standard for transporting real-time data over IP network. The TVP-224HR uses RTP protocol to send

1.3   Package Contents

The contents of your product should contain the following items:
- TVP-224HR VoIP Gateway Router 4 port desk top version
- 100-240V Power Adapter
- 9-pin straight through RS-232 cable
- Printed Quick Installation Guide
- User's guide (CD)
- RJ45 Cable

1.4   Front Panel

The front panel of the TVP-224HR contains a push button and LED indicators. The following figure illustrates the front panel of the TVP-224HR.
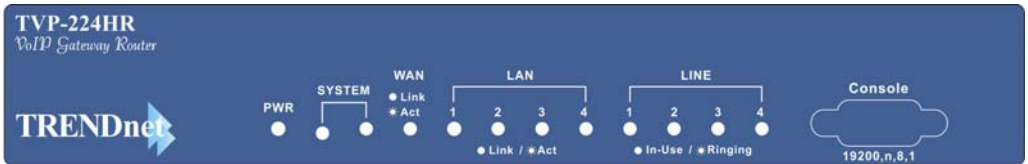
4-port TVP-224HR Front Panel

LED Indicators

The LED indicators on the front panel display the current status of the TVP-224HR as described in the following table:

Indicator	Color	Activity	Indication
PWR	Green	On	Power is supplied to the gateway.
SYSTEM	Green	Blinking	The system is running. (Heartbeat LED)
LAN • Act • Link	 Green Green	 On On Off	 Data is being transferred on the LAN. The gateway is connected to LAN at 100Mb/s. The gateway is connected to LAN at 10Mb/s.
WAN • Link • Act	 Green Green	 On On	 The gateway is connected to WAN. Data is being transferred on the WAN.
LINE Channels 1-4	Green	Off On Blinking	The line is idle. The line is being used. The line is ringing.

Reset Button

There is a recessed push button located next to the SYSTEM LED. This button allows you to reset the TVP-224HR. To reset the gateway, push a small, stiff object into the hole until the SYSTEM LED stops blinking, then release the button.

1.5   Rear Panel

The rear panel of the TVP-224HR has four analog telephony ports, two FXO and two FXS ports offering flexible telephony interface usage. The FXS telephony interface ports may be connected to Subscriber Equipment, such as Telephones, Fax Machines, Cordless Phones, and Modems. FXO ports can be connected to PBX and local phone company Central Office (CO) lines. In addition to analog telephony interface ports, there is a power jack for power adapter connection on the rear panel.
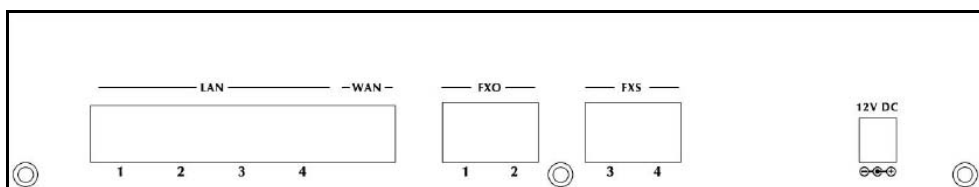
4-port TVP-224HR Rear Panel

LAN / Console Ports

The TVP-224HR is equipped with an Ethernet interface with 10/100 Mbps auto-negotiation, auto MDIX capability. The Ethernet interface port is located on the rear panel. In addition to the Ethernet interface port, there is a 9-pin RS-232 interface port on the rear panel. Their functions are described below:

Port	Label	Function
RJ45	LAN	Connecting the TVP-224HR to 10/100 Mbps Ethernet network
9-pin RS-232	User Console	Connecting the TVP-224HR to a VT-100 terminal or terminal emulator for configuring the TVP-224HR

Command Line Interface

The TVP-224HR has a built-in command line interface and provides users a Command Line Interface (CLI). You can configure TVP-224HR by entering commands from the CLI.

You can access the CLI from a VT-100 terminal or terminal emulator connected to the RS-232 port on the front panel or through a Telnet session.

2.1 Connection through Serial Port

The serial port of the TVP-224HR is fixed at the following settings:

Baud rate	19,200
Number of data bit	8
Parity check	None
Number of stop bit	1
Flow control	None

To access the TVP-224HR through the RS-232 serial port, follow the steps below:

1. Insert one end of the serial cable that came with the TVP-224HR into the 9-pin RS-232 port (labeled User Console) on the front panel.

2. Insert the other end of the cable into your terminal's serial port.

3. Configure the terminal so that settings for baud rate, number of data bit, parity check, number of stop bit and flow control capability exactly match TVP-224HR's serial interface. (Refer to you terminal documentation for more information about setting up these features).

4. Press <Return> from the terminal.

5. When the empty HyperTerminal Screen appears type "123"

6. The TVP-224HR displays the following prompts on the terminal and you are ready to access the CLI then.

   Console>

Task	Prompt	Type
In the event that you forget your administration password, you can gain console access to the TVP-224HR using the super password. The super		

password is the last six digits of your MAC address located on the bottom of your TVP-224HR (00-50-2d-xx-xx-xx). At the Console prompt enter the super password without hyphens. The password is all lower case. After gaining access, at the console prompt type in
 	
    net set manager password
    <new_password> <new_password>
    net store
    net reset
 	
If entry of new password is successful, the console will list "OK". You will now be able to gain Web Access from a PC in the same local segment using the TVP-224HR LAN IP Address. If Web and / or Telnet Access are enabled, you will also be able to remote access the TVP-224HR by entering http:// followed by the TVP-224HR WAN IP or domain name.		

At the prompt
Console>
Enter *ping 168.95.1.1*
The following dialogue indicates that Internet Access is successful.
 	
    ping 168.95.1.1
    1 out of 1 pings succeeded.
    Console>
 	
If the ping times out, you do not have Internet Access. Please refer to the trouble shooting section of the User Manual or consult your ISP to make sure your Internet Access Data is correct and accurately entered into the TVP-224HR.
	Console>	ping 168.95.1.1

The following commands enable / disable web and telnet access respectively.
    Net set http <on/off>
    Net set telnet <on/off>
	Console>	on / off

To reset to Factory Default settings, please perform the following commands to:
 	
Erase all 'port', 'codec' & 'h323' configuration
    config erase
Then access dial plan edit mode by entering
    atpm req
Purge the dial plan from the database
    atpm purge all
Store the changes
    atpm store
Reset the network configuration to default
    net set fac_default
    Key in **"yes"** to re-boot.		

2.2   Connection through Telnet

To use Telnet, Internet Access must have been previously setup so that the gateway is visible on the internet (See User Guide for More Information). Alternatively, you can use Telnet to locally access the TVP-224HR and the TVP-224HR and your computer are in the same network segment. Up to two sessions through Telnet are possible. To access the TVP-224HR from a remote host with Telnet, perform the following tasks:

To access the TVP-224HR Gateway from a remote location using Telnet, perform the following tasks:

Task	Prompt	Type
Open the windows command prompt and enter the **telnet** command followed by the IP address of the TVP-224HR Gateway you want to access.	None	**telnet** *xxx.xxx.xxx*
When the TVP-224HR Gateway prompts you to **Login**, enter the user name "admin"	Login:	admin
When the TVP-224HR Gateway prompts you for **Password**, enter the password. "Console>" will appear. The default password is "123" but it is recommended that the password be changed for security considerations. The password can be changed from the Web Browser Administration / Password submenu page.	Password:	123

Type in "ping xxx.xxx.xxx", where xxx.xxx.xxx is your ISP provided DNS Server IP or any known Public Internet Address. The following dialogue confirms Internet Access
 	
    `Console>ping 168.95.1.1`
    `ping <168.95.1.1>: 56 data bytes`
    `168.95.1.1 is alive`
 	
If the ping times out, you do not have Internet Access or the Public IP Address you pinged is incorrect. Try another IP Address. If you confirm that you do not have Internet Access, please refer to the trouble shooting section of the User Manual or consult your ISP to make sure your Internet Access Data is correct and accurately entered into the TVP-224HR.
	Console>	ping xxx.xxx.xxx

2.3   Command Help

Help commands are provided by the CLI. Type **help** to see a listing of the top-level commands. On most cases, if you enter a command using the wrong number of arguments or inappropriate arguments, the CLI will give further usage.

2.4   Designating IP Address

Some commands require an IP address, which must be designated in a standard format. The IP address format is 32 bits, written as four octets separated by periods (dotted decimal format) that are made up of a network section, an optional subnet section, and a host section, as shown in the following example:

192.168.0.1

2.5   Designating Port Number

Some commands require a telephony port number. The TVP-224HR designates the first port as port number 0, the 2nd port as port number 1 and so on.

2.6   Command Reference

The following table lists the CLI command in alphabetic order.

Command	Description
atpm	Dial plan management command
config	Configuration management command
get	Download new revision code image from TFTP server
help	Display help screen
net	Set or display network parameters
ping	Ping another Internet host
set	Set system configuration
tel	Set or display telephony port options

For the ease of understanding and explaining these commands, the commands are categorized into the following command sets and the following sections explaining each set of the commands.

Command Set	Commands	Function
Utility	download help ping	General purpose utility commands

Network	net	Commands for setting or displaying network related parameters
Configuration management	config show set	Commands for configuring the TVP-224HR or displaying configuration
Dial plan management	atpm	Commands for setting or displaying dial plan
Telephony	tel	Commands for setting or displaying telephony related options

Utility Commands

4 download

Use the **download** command to enter download mode for reading code image from a TFTP server and program it to flash memory. Refer to 0 for detailed information on how to upgrade the system software.

Syntax Description

This command has no arguments or keywords

Note

This command is available from serial interface. It is not available from Telnet unless the TFTP loader is version 3.00 or higher.

5 help

The **help** command lists the top-level commands.

Syntax Description

This command has no arguments or keywords

6 ping

The **ping** command sends Internet Control Message Protocol (ICMP) echo request packets to another node on the network.

ping *host_ip_addr*

ping -s *host_ip_addr count/timeout*

Syntax description

-s	Causes ping to send one data gram per second, printing one line of output for every response received.
host_ip_addr	The IP address or IP alias of the host.

count	(Optional) The number of packets to send
timeout	(Optional) Timeout value for the ping in millisecond

Network Commands

7   net reset

Use the **net reset** command to reset the TVP-224HR. The CLI will prompt you to confirm the command before resetting the TVP-224HR.

Syntax Description

This command has no arguments or keywords

8   net set wan ip *ip_addr*

Use the **net set wan ip** command to assign an Static IP address to the TVP-224HR Wan side.

Syntax description

ip_addr   The IP address of the TVP-224HR.

Note

The new IP address will not take effect until the TVP-224HR is reset.

9   net set wan mask *ip_mask*

Use the **net set wan mask** command to set the IP subnet mask for the TVP-224HR Wan side.

Syntax description

ip_mask   The subnet mask of your network.

Note: The new setting will not take effect until the TVP-224HR is reset.

10   net set wan gateway *ip_addr*

Use the **net set wan gateway** command to assign a default gateway (router) for the TVP-224HR Wan side. The default gateway routes packet data outside or your IP subnet.

Syntax description

ip_addr   The IP address of the default gateway. IP address of 0.0.0.0 stands for no default gateway.

Note: The new setting will not take effect until the TVP-224HR is reset.

11   net set wan ip_tos <p> <d> <t> <r>

The TVP-224HR Wan side allows you to set the 3-bit IP precedence field in the IP header for all the voice packets it sends out. Use the **net set wan ip_tos** to set the IP precedence field.

Syntax description

ip_preced   The IP precedence to be assigned to all the voice packets sent by the TVP-224HR. The IP precedence must be in the range of 0 through 7.

Note: The new setting will not take effect until the TVP-224HR is reset.

12   net set wan dns <pri_server> <sec_server>

The TVP-224HR Wan side allows you to specify the DNS servers for the WAN interface. Up to two DNS servers. Use the **net set wan dns** command to set the DNS servers.

Syntax description

pri_server   Primary DNS server for the WAN interface

sec_server   Secondary DNS server for the WAN interface. Optional

13   net set wan speed <10 | 10f | 100 | 100f | 10/100 | 10/100f>

The TVP-224HR Wan side allows you set the link speed for its Ethernet interface. Use the **net set wan speed** command to set the Ethernet link speed.

Syntax description

10   Fixed the Ethernet speed at 10 Mbps

100   Fixed the Ethernet speed at 100 Mbps

auto   Enable the 10/100 Mbps auto-negotiation capability.

14   net set lan ip <addr>

Use the **net set lan ip** command to assign an Static IP address to the TVP-224HR Lan side.

Syntax description

ip_addr   The IP address of the TVP-224HR.

Note

The new IP address will not take effect until the TVP-224HR is reset.

15   net set lan mask \<mask\>

Use the **net set lan mask** command to set the IP subnet mask for the TVP-224HR Lan side.

Syntax description

ip_mask   The subnet mask of your network.

Note: The new setting will not take effect until the TVP-224HR is reset.

16   net set lan speed \<10 | 10f | 100 | 100f | 10/100 | 10/100f\>

The TVP-224HR Lan side allows you set the link speed for its Ethernet interface. Use the **net set lan speed** command to set the Ethernet link speed.

Syntax description

10   Fixed the Ethernet speed at 10 Mbps

100   Fixed the Ethernet speed at 100 Mbps

auto   Enable the 10/100 Mbps auto-negotiation capability.

17   net set http {on|off}

The TVP-224HR allows you enable of disable its built-in HTTP server. Use the **net set http** command to enable or disable the HTTP server.

Syntax description

on   Enable HTTP server. This allows users to access the TVP-224HR from web browser.

off   Disable HTTP server.

18   net set manager password \<new_password\> \<new_password\>

Use the **net set manager password** command to change the password for Telnet user.

Syntax description

password   The new password. The password must be equal to or less than 7 alphanumeric characters. It must be identically typed twice for the TVP-224HR to be certain about the new password.

19   net show wan

The **net show wan** command displays all the wan network settings.

Syntax Description

This command has no arguments or keywords

Example

The following example shows how to display network settings:

```
Console> net show wan <Enter>
WAN Parameters
 MAC address:   00-50-2d-00-f5-07

 Ethernet speed:      10/100 Mbps full duplex
 Static IP configuration
 IP address:   211.75.40.98

 Subnet mask:  255.255.255.240

 Default gateway:      211.75.40.97

 Pri. DNS server:      168.95.1.1

 Sec. DNS server:      0.0.0.0

 IP TOS:          0 0 0 0


 DHCP Client Parameters
 DHCP client:  Disabled
  Router name:

  Domain name name:

  Use local MAC addr:  No

  Local MAC addr:      00-00-00-00-00-00


Current active IP addr: 211.75.40.98

Current active subnet mask:    255.255.255.240

Dynamic DNS Parameters
  DYNDNS:     Disabled


Console>
```

20   net show lan

The **net show lan** command displays all the lan network settings.

Syntax Description

This command has no arguments or keywords

Example

The following example shows how to display network settings:

```
Console> net show  <Enter>
LAN Parameters
 MAC address:  00-50-2d-00-f5-06
 Ethernet speed:     10/100 Mbps full duplex
 IP address:   192.168.0.1
 Subnet mask:  255.255.255.0
 DHCP server:   Enabled
   No. of DHCP clients:     30
   Starting client addr:     192.168.0.10
Console>
```

21   net show hwstat

The **net show hwstat** command displays the hardware configuration of the TVP-224HR.

Syntax Description

This command has no arguments or keywords

Example

The following example shows how to display hardware configuration:

```
Console>net show hwstat  <Enter>
****************** Hardware Configuration ******************
 Flash:     type-Am29LV320DB 64 sectors  64 KB/sector
 RAM:       16 MB, Bus Width: 32bits
 WAN:          Link UP
 TIM slot A:     type-FXO2S2  DSP-C5409  codec-PEB2466   Diag-OK
 DSP image: C549/5409 ET-16  Ver 8.1.2.1.
 Port  0:   FXO  status OK
 Port  1:   FXO  status OK
 Port  2:   FXS  status OK
 Port  3:   FXS  status OK
**********************************************************
Console>
```

Configuration Management Commands

The configuration management commands allow the user to set values for system configuration parameters. In addition, it provides mechanisms to allow a user to control when new parameter values are put in use.

The CLI maintains three areas where the parameters are stored:

- Temporary
- Active
- Non-volatile Storage (NVS)

When a **set** command is entered and processed, it changes the parameter value in the Temporary area. This does not affect current operation of the TVP-224HR, which is using the values in the Active area. The **config activate** command moves configuration data from the Temporary area to the Active area, where it can actually be used. Thus a user can make multiple changes in the Temporary area using **set** commands, then put them into use with a single **config activate** command. (Note that the **config activate** command may only be used between calls, and will usually tear down any in-progress calls when invoked.)

Configuration data in the Active area is only available while the TVP-224HR remains in operation. If the TVP-224HR is reset, the Active area is reloaded from the data stored in NVS. Data in the Active area may be saved to NVS by entering the **config store** command.

For most of the H.323 parameter, settings won't take effect until the TVP-224HR reset. To ensure the H.323 setting to take effect, it is recommended to reset the TVP-224HR after changing the settings using the **set** command.

In summary:

- Use **set** commands to make configuration parameters changes in the Temporary area
- Use the **config activate** command to move the new values into the Active area, available for use
- Use the **config store** command to save the new Active values in NVS
- Reset the TVP-224HR after changing H.323 settings and storing the setting to NVS.

22   config {activate|store|erase}

Use the **activate** command to manage the configuration data. A sequence of **set** command is typically preceded by and/or followed by the **config** command for the **set** command to become active.

Syntax description

activate	Move the configuration from temporary area to active area.
store	Store the active configuration data into non-volatile storage.
erase	Erase the configuration from non-volatile storage.

23   show h323

The **show h323** command displays the settings of the parameter that are related to H323 signaling protocol.

Syntax Description

This command has no arguments or keywords

Example

The following example shows how to display the H323 parameters:

```
Console>show h323  <Enter>
h323 display_name  = 'Customer'
h323 h245_term_type = 60
h323 rtp_port_base  = 30000
h323 out_fast_start = off
h323 in_fast_start  = off
h323 h245_tunneling = off
h323 cisco_t38     = on
h323 callSignalPort = 1720
h323 nat_call      = on
h323 call_name     =
h323 local_alert   = off
h323 default_dtmf   = H323 V2 Signal
No IMTC IP Defined!
h323 dns_ip        = 0
h323 gk_mode       = off
h323 h245_timeout  = 30000
h323 term_id       =
Console>
```

24   show version

The **show version** command displays the version of various software components of the TVP-224HR.

Syntax Description

This command has no arguments or keywords

25   set h323 alias {add | del} {*alias*|all}

The **set h323 endpoint_prefix** command is used to create and delete aliases that are registered with the Gatekeeper.

Syntax Description

add	Create an alias *alias*
del	Delete a previously created alias *alias*
alias	Alias to be created or deleted
all	Delete all previously created alias. This optional applies to **del** only

26   set h323 allow_call_wo_gk {true|false}

The **set h323 allow_call_wo_gk** command is used to inform the H.323 stack to allow incoming calls from a remote TVP-224HR which is not registered with a gatekeeper.

Syntax Description

true   Allow calls from TVP-224HR that is not registered with a gatekeeper.

false   Do not allow calls from TVP-224HR that is not registered with a gatekeeper.

Default

The TVP-224HR allows calls from TVP-224HR that is not registered with a gatekeeper.

27   set h323 display_name *display_name*

The **set h323 display_name** command is used to set the display name information that is carried in the H.323 setup messages.

Syntax Description

display_name   The string to be is inserted into the Q.931 display information field and in the sourceAddress field 2 of the H.323 setup-UUIE .

Example

The following example sets the h323 display name as "customer".

```
Console> set h323 display_name customer
```


28   set h323 dtmf_duration *duration*

When sending DTMF, by default, the gateway will use H323 Version II standard DTMF signal except other specified (ex: IMTC_dtmf). User may specify the duration of the DTMF tone.

Syntax Description

duration   Duration for the DTMF tone in millisecond.

Default

The default setting is 300 milliseconds.

29   set h323 endpoint_reg_type {gw | terminal}

The **set h323 endpoint_reg_type** command is used to set the H.323 registration type. This should not be confused with the H.245 terminal type, although the two parameters should be programmed consistently. This

parameter specifies how the TVP-224HR will register itself with the gatekeeper, and has nothing to do with master/slave determination.

Syntax Description

gw	The TVP-224HR registers itself to gatekeeper as a H.323 Gateway
terminal	The TVP-224HR registers itself to gatekeeper as a H.323 Terminal

Default

The TVP-224HR registers to gatekeeper as a H.323 Gateway.

30   set h323 gk_addr *ip_addr*

The **set h323 gk_addr** command is used to specify the address of the gatekeeper when configured for manual mode.

Syntax Description

ip_addr	IP address of the H.323 gatekeeper

31   set h323 gk_max_tries *count*

The **set h323 allow_call_wo_gk** command is used to control how many registration attempts will be made before the TVP-224HR considers itself to have failed registration. Once this number of unsuccessful attempts has been made, the TVP-224HR will only be able to place calls if **allow_calls_wo_gk** is true.

Syntax Description

count	Number of registration attempt

Default

The default number of registration attempt is 2.

32   set h323 gk_mode {off | manual | auto}

The H.323 protocol allows calls to be established through H.323 gatekeeper. The **set h323 gk_mode** command is used to specify if call is establishment through a gatekeeper.

Syntax Description

off	Disables gatekeeper operation
manual	Enables gatekeeper in manual discovery mode. The gk_addr must be set appropriately.
auto	Enables auto-discovery of the gatekeeper

Default

The gatekeeper operation is disabled.

33   set h323 h245_term_type *terminal type*

The **set h323 h245_term_type** command is used to set the H.245 terminal type. The terminal type is used as part of the master/slave determination process of H.245.

Syntax Description

termmal_type   A numerical value designating the H245 terminal type. Typically, setting the H.245 terminal type to a value less than 50 will force slave operation, and a value greater than 200 will force master operation

Example

The following example sets the h245 terminal type to 60.

```
Console> set h323 h245_term_type 60
```

34   set h323 imtc_dtmf {add|del} *ip_addr*

There are two ways VoIP gateway handles DTMF relay, per H.323 and IMTC specifications. By default, the TVP-224HR conveys DTMF digits in H.323 format. The **set h323 imtc_dtmf** command is used to specify how DTMF digits are to be conveyed to a remote VoIP device.

Syntax Description

add   TVP-224HR sends DTMF digit to the remote VoIP device designated by IP address *ip_addr* in IMTC conforming format.

del   TVP-224HR sends DTMF digit to the remote VoIP device designated by IP address *ip_addr* in H.323 format.

ip_addr   IP address of the remote TVP-224HR

Default

The TVP-224HR sends DTMF digits in H.323 format, unless the call is destined for a remote VoIP device whose IP address has been **set h323 imtc_dtmf add**ed.

35   set h323 in_fast_start {on|off}

The **set h323 in_fast_start** command is used to select the H.323 Fast start mode on for calls initiated from remote TVP-224HRs.

Syntax Description

on	Set H323 Fast start mode on
off	Set H323 Fast start mode off

The default setting is off.

36   set h323 nat_call {on|off}

When the TVP-224HR is installed in a network that connects to WAN via a router with Network Address Translation (NAT) feature, the NAT might block calls. The **set h323 nat_call** command is used to enables the TVP-224HR to connect to remote TVP-224HRs connecting to WAN via NAT capable router.

Syntax Description

on	Enable.
off	Disable.

The default setting is on.

37   set h323 out_fast_start {on|off}

The **set h323 out_fast_start** command is used to select the H.323 Fast start mode on for calls making toward remote TVP-224HRs.

Syntax Description

on	Set H323 Fast start mode on
off	Set H323 Fast start mode off

The default setting is off.

38   set h323 rtp_port_base *port_base*

The **set h323 rtp_port_base** command is used to select the starting port number for assignment of RTP ports. When a calls are made to remote TVP-224HRs, an RTP port is opened for each call. The TVP-224HR uses the *port_base* as the RTP port number for the first call, the next call uses the next successive port, and so on.

Syntax Description

port_base	The starting port number for the assignment of RTP port. If rtp_port_base is assigned a value of 0, the assignment of port number will be dynamic. The port number can be specified from 0 to 32767. Typically, numbers from 0 to 1023 are reserved on most systems. The recommended value is 30000.

Example

The following example sets RTP base port number to 30000.

```
Console> set h323 rtp_port_Base 30000
```

Dial Plan Management Commands

Among the command sets supported by the CLI, the dial plan management commands are the most sophisticated. Some of the dial plan management commands are only allowed when the TVP-224HR is in the atpm table update state. For ease of explaining, this command set is further categorized into several sub command sets.

Sub command set	Purposes	Commands	atpm table update state required?
Database update control	• Instruct the TVP-224HR to start or stop atpm table update state. • Store/restore atpm tables to/from non-volatile storage • Purge atpm tables • Erase dial plan database from non-volatile storage	atpm req atpm done atpm restore atpm store atpm purge atpm erase	No No Yes No Yes No
Destination table management	Manage atpm destination table	atpm dadd atpm ddel atpm dfind atpm dlist	Yes Yes No No
Hunt group table management	Manage atpm hunt group table	atpm hadd atom hdel atpm hfind atpm hlist	Yes Yes No No
Address table management	Manage atpm address table	atpm aadd atpm adel atpm afind atpm alist	Yes Yes No No
System	Manage atpm system configuration	atpm slist atpm sys	No Yes

The following sections describe each sub command set and the commands.

39   Database Update Control Commands

36   atpm done

The **atpm done** command ends the atpm table update session and re-enables the address translation.

Syntax description

This command has no arguments or keywords

37   atpm erase

The **atpm erase** command erases the dial plan database from the non-volatile memory.

Syntax description

This command has no arguments or keywords

38   atpm purge {all|addr|dest|hunt}

Use the **atpm purge** command to delete all entries from the atpm tables.

Syntax description

all	Delete all entries from atpm ddress, destination and hunt group tables.
addr	Delete all entries from atpm address table.
dest	Delete all entries from atpm destination table.
hunt	Delete all entries from atpm hunt group table.

39   atpm req

The **atpm req** command starts the atpm table update session. Upon starting the atpm table update session, the ATPM address translation is disabled, hence no phone call can be made, until a **atpm done** command is issued.

Syntax description

This command has no arguments or keywords

40   atpm restore

The **atpm restore** command restores the whole dial plan from non-volatile storage to the atpm address, destination and hung group tables.

Syntax description

This command has no arguments or keywords

41   atpm store [erase]

The **atpm store** command store all atpm tables into non-volatile memory.

erase   (Optional) Erase the non-volatile before storing the dial plan database. This option is not recommended except the very first time you use the **atpm store** command.

Destination Table Management Commands

43   atpm dadd *dest_id* port *port#*

The **atpm dadd *dest_id* port** command adds a local destination entry into the atpm destination table. A local destination entry is one of the telephony ports on the TVP-224HR.

Syntax description

dest_id   Destination ID. For each destination, you need to assign it a unique identifier between 1 and 65536.

port#   The number of the telephony port.

Example

The following example shows how to assign ID 1 to the first telephone port and add an entry in the destination table designating it.

```
Console>atpm dadd 1 port 0 <Enter>
```

44   atpm dadd dest_id h323 dest_ip_addr [ip_port]

The **atpm dadd *dest_id* h323** command adds a h323 type remote destination entry into the atpm destination table. A remote destination entry is typically another TVP-224HR or H323 gateway.

Syntax description

dest_id   Destination ID. For each destination,

you need to assign it a unique identifier

between 1 and 65536.

dest_ip_addr   The IP address of the remote destination.

ip_port   (Optional) Base port number the TVP-224HR

uses to establish voice with that remote

destination.

Example

The following example shows how to add a remote destination whole IP address is 192.168.0.3 to the destination table and assign an ID 200 to that destination.

```
Console>atpm dadd 200 h323 192.168.0.3 <Enter>
```

45   atpm ddel *dest_id*

The **atpm ddel** command deletes an entry from the atpm destination table.

Syntax description

dest_id   ID of a previously added destination entry to be deleted from destination table.

46   atpm dfind *dest_id*

The **atpm dfind** finds and display an entry in the destination table.

Syntax description

dest_id   ID of a previously added destination entry to be displayed.

Example

The following example shows how to display a destination whose ID is 200.

```
Console>atpm dfind 200 <Enter>
Dest id   Mode   Destination
---------------------------------------------------------------
   200   H.323    Dest = 192.168.0.3/1720 TCP
OK
Console>
```

47   atpm dlist

The **atpm dlist** displays all entries in the destination table.

Syntax description

This command has no arguments or keywords

Example

```
Console>atpm dlist
Dest id   Mode   Destination
---------------------------------------------------------
   1  Local   PORT = 0
   2  Local   PORT = 1
   3  Local   PORT = 2
```

```
    4   Local   PORT = 3
   11   H.323   Dest = 210.243.230.167/1720 TCP

OK
Console>
```

48   Hunt Group Table Management Commands

49   atpm hadd hunt_group_id {1|2} dest_id [desi_id2] …

Use the **atpm hadd** command to add an entry into the atpm hunt group table.

Syntax description

hunt_group_id	Hunt group ID. For each hunt group, you need to assign it a unique identifier between 1 and 65536.
1	Hunt type 1. Hunt type 1 hunts destination within a hunt group starting from the destination member just after the last used member.
2	Hunt type 2. Hunt type 2 hunts destination within a hunt group starting from the first destination member.
dest_id1	ID of the first destination member in the hunt group.
dest_id2 *dest_id3 …*	(Optional)List of ID's of additional destination members in the hunt group.

Example

The following example shows how to group destination 1, 2, 3 and 4 into a hunt group, assign it hunt group ID 10, and specify hunt type 2 for this hunt group.

```
Console>atpm hadd 10 2 1 2 3 4<Enter>
```

50   atpm hdel hunt_group_id

The **atpm hdel** command deletes an entry from the atpm hunt group table.

Syntax description

hunt_group_id ID of the hunt group to be deleted from the hunt group table.

51   atpm hfind hunt_group_id

The **atpm hfind** finds and display an entry in the hunt group table.

Syntax description

 hunt_group_id ID of the hunt group to be displayed.

52   atpm hlist

The **atpm hlist** display all entries in the hunt group table.

Syntax description

This command has no arguments or keywords

Example

```
Console>atpm hlist
Group id   Type  #Members    Member ids
-------------------------------------------------
     1     2      1    1
     2     2      1    2
     3     2      1    3
     4     2      1    4
    11     2      1   11

OK
Console>
```

Address Table Management Commands

**53 atpm aadd tel# min_digits max_digits hunt_group_id
     prefix_strip_len [prefix#]**

Use the **atpm aadd** command to add an entry into the atpm address table.

Syntax description

tel#	Telephone number to match. This is only part of the total dialed string.
min_digits	Minimum number of digits to be collected before the ATPM starting matching the dialed string with entries in the address table.
max_digits	Maximum number of digits to be collected before the ATPM starting matching the dialed string with entries in the address table.
hunt_group_id	Hung group ID for this telephone number
prefix_strip_len	The number of digits to be stripped at the beginning of the collected dial string before forwarding the string to the destination.
prefix#	(Optional) Digit to be added before the beginning of the collected dial string before forwarding it to the destination.

54   atpm adel *tel#*

The **atpm adel** command deletes an entry from the atpm address table.

tel#   Number of a previously added entry to be deleted from the atpm address table.

55   atpm afind *tel#*

The **atpm afind** finds and display an entry in the address table.

Syntax description

tel#   Number of a previously added entry in the atpm table to be displayed.

56   atpm alist

The **atpm alist** displays all entries in the address table.

Syntax description

This command has no arguments or keywords

Example

```
Console>atpm alist
 Address        Hunt   Min   Max    Prefix Prefix
 Entry         Grp_Id Digits Digits strip Address
 103            3     0     16    0    None
 104            4     0     16    0    None
 201            1     1     3     3    None
 202            2     1     3     3    None
 203            3     1     3     3    None
 204            4     1     3     3    None
 666           11     3     3     0    None

OK
Console>
```

System Commands

57   atpm slist

The **atpm slist** displays the atpm system table.

Syntax description

This command has no arguments or keywords

Example

```
Console>atpm slist
System Info: Total dial time = 30000ms, First digit wait = 10000ms,
         Interdigit wait = 5000ms, Dial term digit = None
OK
```

```
Console>
```

58   atpm sys dial_time 1st_digit_wait inter_digit_wait [dial_term_digit]

Use the **atpm sys** command to set the time constraints for collection of dial digits.

Syntax description

dial_time	The maximum time, in millisecond, allowed for entry of the entire string of dial digits. At expiration, ATPM starts address lookup.
1st_digit_wait	The maximum time, in millisecond, allowed between off-hook and when the first dial digit is entered. At expiration, ATPM considers address lookup to fail.
inter_digit_wait	The maximum time allowed between entries of each digit after the previous digit. At expiration, ATPM starts address lookup.
dial_term_digitr	(Optional) End of the dial string is declared when the digit is entered.

Tel Commands

59   tel show tel_id

The **tel show tel_id** command to display the line impendence setting of the line interface

Syntax Description

This command has no arguments or keywords

60   tel show port [port#]

The **tel show port** command displays the hook state of a telephony port.

Syntax Description

port#   Number of the port.

Default: If the port number is not specified, the CLI displays hook state of all telephony ports.

61   tel show ring_freq

The **tel show ring_freq** command to displays the frequency of the ring signal that the TVP-224HR sends to FXS ports..

Syntax Description

This command has no arguments or keywords

62   tel set tel_id {1~10}

The FXO ports might be connected to different transmission media e.g.(central office switch or PBX) via local loop which may have different line impedance, For compatible the line impedance in the local loop, the **tel set tel_id** command is used to set the Line impedance for GW line interface .

Syntax Description

1	600 ohms
2	900 ohms
3	220+820//115nF (Germany)
4	200+680//100nF (China)
5	370+620//310nF (UK)
6	180+910//150nF (France)
7	270+750//150nF (Sweden)
8	120+820//110nF (Norway)
9	150+830//72nF (Belgium)
10	400+500//330nF (Denmark)

Default

The default setting is 1.

63   tel set ring_freq {1|2|3|4}

Use the **tel set ring_freq** command to set the frequency of the ringer TVP-224HR uses to ring a FXS port.

Syntax Description

1	Set ring freq to 17 Hz
2	Set ring freq to 20 Hz
3	Set ring freq to 25 Hz
4	Set ring freq to 50 Hz

Chapter 3

3

Upgrading the TVP-224HR

This chapter explains how to upgrade your TVP-224HR when new revision

software becomes available. Upgrades may improve system functionality

or add new features to your TVP-224HR.

The TVP-224HR offers two operation modes. Under normal conditions, the TVP-224HR operates in regular operational mode. When software upgrade is required, the TVP-224HR may be operated in download mode. Under download mode, the CLI will support limited commands allowing users to read new revision codes from a remote TFTP server and write it to the built-in flash non-volatile storage.

The CLI under download differs from normal in the prompts and that it supports less commands.

3.1   Entering Download Mode

To switch from normal operation mode to download mode, use the **download** CLI command.

```
Console>get <Enter>
```

Note: To be able to switch to download mode from Telnet session, the TFTP loader on the TVP-224HR must be version 3.00 or higher.

The TVP-224HR will terminate all on-going calls, shut down itself, reset and enter download mode. If you enter download mode from Telnet session. The Telnet session will be terminated too. You need to connect to the TVP-224HR from Telnet client again to be able to access the CLI commands. Refer to Section Connection through Telnet in Chapter 8 for detailed information on how to connect to TVP-224HR from Telnet client.

Upon entering the download mode, the CLI will show the following prompt.

```
IP address of the TFTP server?  [xxx.xxx.xxx.xxx] <Enter>
```

When prompted enter the file name of the firmware file.

3.2 CLI Commands in Download Mode

Under download mode, the CLI supports the following commands:

Command	Description
help	Display help screen
quit	Terminate download mode, switch to normal operation mode.
net set	Change IP parameter
start	Start downloading code from TFTP server

The following section describes each of the commands.

41   help

The **help** command lists the top-level commands.

Syntax Description

This command has no arguments or keywords

42   quit

The **quit** command is used to terminate the download mode and return to normal operation mode.

Syntax Description

This command has no arguments or keywords

Note

Switching mode from Telnet session will terminate current active session. You'll need to connect to TVP-224HR again to be able to access the CLI.

43   net set lan ip *addr*

Use the **lan set ip** command to assign a lan IP address to the TVP-224HR.

Syntax description

addr   The IP address of the TVP-224HR.

Note

The new IP address will not take effect until the TVP-224HR is reset.

44 net set wan ip *addr*

Use the **set ip** command to assign a static IP address to the TVP-224HR.

Syntax description

  addr   The IP address of the TVP-224HR.

Note

The new IP address will not take effect until the TVP-224HR is reset.

45 net set wan gateway *addr*

Use the **net set wan gateway** command to assign a default gateway for the TVP-224HR. The default gateway routes packet data outside of your IP subnet.

Syntax description

  addr   The IP address of the default gateway. IP address of 0.0.0.0 stands for no default gateway.

Note

The new setting will not take effect until the TVP-224HR is reset.

46 net set wan *mask*

Use the **net set wan mask** command to set the IP subnet mask for the TVP-224HR.

Syntax description

  mask   The subnet mask of your network.

Note

The new setting will not take effect until the TVP-224HR is reset.

47 start

Use the **start** command to start downloading code from TFTP server. The TVP-224HR will prompt you for the IP address of the TFTP server and the file to download.

Syntax description

This command has no arguments or keywords

Appendix A - Technical Specifications

TVP-224HR Technical Specifications

Telephony Interface	
Physical interface	Desktop with 4 Analog Ports • Loop start 2 x FXO (RJ–11) • Loop start 2 x FXS (RJ–11)
Programmable line interfaces	Complex line impedance
Protocols	H.323v3 (Normal/fast–start mode) Supports gateway–gateway direct routing and gateway–gatekeeper assisted routing mode
Voice coders support	ITU–T G.711 u–law, G.723.1, and G.729A/B, auto–switching (Frame–rate/packet: 1 – 8)
Fax	Supports T.30 G3 fax on PSTN Interface; ITU–T T.30 fax spoofing ; ITU–T T.38
Simultaneous connections	4 channels voice/fax
Media processing	Gain control; G.168 echo cancellation (16 ms); Voice activity detection (VAD); Comfort noise generation (CNG); Call progress detection; DTMF detetection/filtering/regeneration (H.323v3/IMTCv1)
Data Network Interface	
Physical interface	WAN: 1 (10Base–T/100Base–TX, Auto–Negotiation) LAN: 4 (10Base–T/100Base–TX, Auto–Negotiation)
Protocols	TCP/IP, DHCP, HTTP, DNS
Advanced Function	QoS, Virtual Server, Port Forwarding Special application, DMZ, DDNS

System	
Call Control	Built–in three–tier dialing plan and destination hunting Supports gatekeeper authorization and accounting Supports gatekeeper call routing control and gateway mapping Call accounting information on gateway (via RS–232) or gatekeeper
Management	RS–232 (DCE mode) Built–in HTTP Web–based remote management Telnet remote management
System upgrade	Flash memory and built–in TFTP allowing firmware and feature

	upgrade via network
Chassis	Metallic 9.5" Desktop
Dimensions (L X W X H)	241 x 135 x 45 mm (9.5 x 4.3 x 1.8 in.)
Weight	1.9 kg (4.2 lb)
LED Indicators	System: 2 PWR, CPU WAN: 1, LNK/ACT LAN: 4, LNK/ACT Voice: 4 In-Use/Ringing
Interoperability†	Microsoft NetMeeting*; Cisco AS5300, 3600; RADVISION gatekeeper; Cisco gatekeeper
Input Voltage, AC	90–260 VAC, auto ranging, 50–60 Hz
Power Requirement	12V DC, 2.0A
Operating environment	Operating temperature: 0° ~ 50° C (32° ~ 122° F) Humidity: 90% (non-condensing)
Certification	CE, FCC, UL

FXO Ports	
Signaling	Loop start/DTMF
Number of channels	2
Interface connectors	2 RJ-11 2-pin modular jacks
Line impedance	600 Ω; 900 Ω; Complex line impedance
Insertion loss	2 dB nominal
Frequency response	300 Hz ~ 3400 Hz +/- 2 dB w.r.t. 1004 Hz
Return loss	≥ 18 dB
Input level adjustment	−6 dB to +6 dB
Output attenuation	0 dB to 13 dB
Longitudinal balance	≥ 45 dB
Disconnect detection	Loop current Customizable tone detection
FXS Ports	
Signaling	Loop start/DTMF
Number of channels	2
Interface connectors	2 RJ-11 2-pin modular jacks
Line impedance	600 Ω; 900 Ω; Complex line impedance
Insertion loss	2 dB nominal
Frequency response	300 Hz ~ 3400 Hz +/- 2 dB w.r.t. 1004 Hz
Return loss	≥ 18 dB
Input level adjustment	−6 dB to +6 dB
Output attenuation	0 dB to 13 dB
Longitudinal balance	≥ 45 dB
Loop current	25 mA nominal
Ring voltage	40 Vrms nominal
Ringing tone	16.67 Hz, 20 Hz (default), 25 Hz or 50 Hz
Disconnect detection	Loop current

Console Port

The console port uses a DB-9 RS-232 connector. The supplied straight through RS-232 cable connects the console port of the TVP-224HR to a console PC or terminal. Pin assignment for the port is described in the following table.

DB-9 pin	Signal
1	Not connected
2	TxD
3	RxD
4	Not connected
5	Ground
6	Not connected
7	Not connected
8	Not connected
9	Not connected

LAN Port

The 10/100 LAN port use standard RJ-45 connector and Ethernet pin assignment. The following diagram and table show the pin assignment on the port connector. When connecting the LAN port to switches or repeaters, you must use a straight-through cable.

RJ45 pin	Signal
1	RxD+
2	RxD-
3	TxD+
4	Not connected
5	Not connected
6	TxD-
7	Not connected
8	Not connected

FXO Port Pin Assignments

The FXO Telephony Interface Module has 2 RJ11C/W modular jacks. The following diagram and table show the assignments of the pin for the RJ11 port.

RJ-11 pin	Signal
1	Not connected
2	Tip
3	Ring
4	Not connected
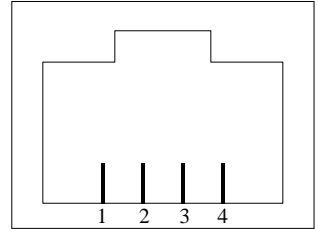
FXS Port Pin Assignments

The FXS Telephony Interface Module has 2 RJ11C/W modular jacks. The following diagram and table show the assignments of the pin for the RJ11 port.

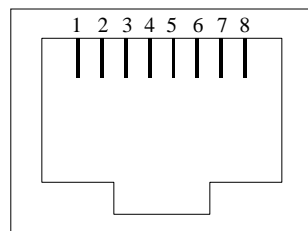| RJ-11 pin	Signal
1	Not connected
2	Tip
3	Ring
4	Not connected

Appendix B - Connecting through Console

The console port uses a DB-9 RS-232 connector. The supplied straight through RS-232 cable connects the console port of the TVP-224HR to a console PC or terminal.

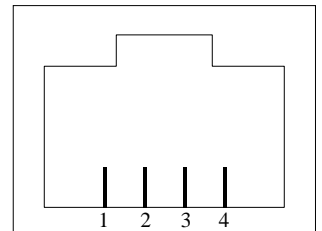| Task	Prompt	Type
Connect RS-323 Cable to TVP-224HR RS-232 console port a your computer that you will use as a configuring terminal		
Open HyperTerminal and enter the following Input Parameters when prompted:	Baud rate Number of data bit Parity check Number of stop bit Flow control	19,200 8 None 1 None
When the empty HyperTerminal Screen appears type "123"		123

In the event that you forget your administration password, you can gain console access to the TVP-224HR using the super password. The super password is the last six digits of your MAC address located on the bottom of your TVP-224HR (00-50-2d-xx-xx-xx). At the Console prompt enter the super password without hyphens. The password is all lower case. After gaining access, at the console prompt type in
 	
`net set manager password <new_password> <new_password>`
`net store`
`net reset`
 	
If entry of new password is successful, the console will list "OK". You will now be able to gain Web Access from a PC in the same local segment using the TVP-224HR LAN IP Address. If Web and / or Telnet Access are enabled, you will also be able to remote access the TVP-224HR by entering http:// followed by the TVP-224HR WAN IP or domain name.		

At the prompt `Console>` **Enter** *ping 168.95.1.1* The following dialogue indicates that Internet Access is successful.	`Console>`	`ping 168.95.1.1`

ping 168.95.1.1 **1 out of 1 pings succeeded.** **Console>** If the ping times out, you do not have Internet Access. Please refer to the trouble shooting section of the User Manual or consult your ISP to make sure your Internet Access Data is correct and accurately entered into the TVP-224HR.		
The following commands enable / disable web and telnet access respectively. **Net set http <on/off>** **Net set telnet <on/off>**	`Console>`	`on / off`
To reset to Factory Default settings, please perform the following commands to: Erase all 'port', 'codec' & 'h323' configuration **config erase** Then access dial plan edit mode by entering **atpm req** Purge the dial plan from the database **atpm purge all** Store the changes **atpm store** Reset the network configuration to default **net set fac_default** Key in **"yes"** to re-boot.		

Appendix C - Connecting through Telnet

To use Telnet, Internet Access must have been previously setup so that the gateway is visible on the internet (See User Guide for More Information). Alternatively, you can use Telnet to locally access the TVP-224HR, if you are under a router or switch and the TVP-224HR and your computer are in the same network segment.

To access the TVP-224HR Gateway from a remote location using Telnet, perform the following tasks:

Task	Prompt	Type
Open the windows command prompt and enter the **telnet** command followed by the IP address of the TVP-224HR Gateway you want to access.	None	**telnet** *xxx.xxx.xxx*
When the TVP-224HR Gateway prompts you to **Login**, enter the user name "admin"	Login:	admin
When the TVP-224HR Gateway prompts you for **Password**, enter the password. "Console>" will appear. The default password is "123" but it is recommended that the password be changed for security considerations.	Password:	123

The password can be changed from the Web Browser Administration / Password submenu page.		

Type in "ping xxx.xxx.xxx", where xxx.xxx.xxx is your ISP provided DNS Server IP or any known Public Internet Address. The following dialogue confirms Internet Access
 	
`Console>ping 168.95.1.1`
`ping <168.95.1.1>: 56 data bytes`
`168.95.1.1 is alive`
 	
If the ping times out, you do not have Internet Access or the Public IP Address you pinged is incorrect. Try another IP Address. If you confirm that you do not have Internet Access, please refer to the trouble shooting section of the User Manual or consult your ISP to make sure your Internet Access Data is correct and accurately entered into the TVP-224HR.
	Console>	ping xxx.xxx.xxx

Appendix D - CLI Commands

Normal Mode Commands

Command	Description
atpm aadd	Add an entry to the address table
atpm adel	Delete an entry from the address table
atpm afind	Find and display an entry in the address table
atpm alist	Display all entries in the address table
atpm dadd	Add an entry to the destination table
atpm ddel	Delete an entry from the destination table
atpm dfind	Find and display an entry in the destination table
atpm dlist	Display all entries in the address table
atpm hadd	Add an entry to the hunt group table
atpm hdel	Delete an entry from the hunt group table
atpm hfind	Find and display an entry in the hunt group table
atpm hlist	Display all entries in the hunt group table
atpm done	End the atpm table update session
atpm erase	Erase all atpm tables from NVS
atpm purge	Purge entries from atpm table(s)
atpm req	Start atpm table update session
atpm restore	Restore atpm tables from NVS
atpm store	Store atpm tables into NVS
atpm slist	Display atpm system parameters
atpm sys	Set atpm system parameters
config activate	Move the configuration from temporary area to active area.
config erase	Erase the configuration from NVS
config store	Store the active configuration data into NVS
get	Switch to download mode
help	Display help screen
net reset	Reset the system
net set wan gateway	Set default gateway's IP address
net set http	Turn on/off HTTP server

net set wan ip	Set IP address
net set ip_preced	Set IP precedence bits
net set wan mask	Set IP subnet mask
net set wan speed	Select Ethernet link speed
net set user_pw	Set password
net show	Display IP parameters
net show hwstat	Display hardware status
ping	Send ICMP echo request to another host
show h323	Display H.323 parameter settings
show version	Show software versions
set h323	Set H.323 parameters
tel show tel_id	Display line impendence setting.
tel show port	Display hook state for a telephony port
tel show ring_freq	Show ringer's frequency
tel set tel_id	Set line impendence for GW line interface
tel set ring_freq	Set ringer's frequency

Download Mode Commands

Command	Description
Help	Display help screen
Quit	Switch to normal operation mode
net set wan gateway	Set default gateway 's IP address
net set wan ip	Set IP address
net set wan mask	Set IP subnet mask
start	Start downloading file

Appendix E - Factory Default Settings

The following table lists the settings of certain parameters before the TVP-224HR is shipped.

Parameter	Default Setting
Network	
PPPoe	disabled
DYN DNS	disabled
DHCP Server	enabled
Configured IP address	192.168.0.1
Configured IP subnet mask	255.255.255.0
Default gateway IP address	0.0.0.0
Current active IP address	192.168.0.1
Current active subnet mask	255.255.255.0
IP precedence	0 0 0 0
Ethernet MAC address	00-50-2d-xx-xx-xx
Ethernet link speed	10/100 auto-negotiation
User ID for HTTP browser and Telnet client login	admin
Password for HTTP browser and Telnet access login	123
HTTP server	enabled
Telnet server	enabled
Serial port (Fixed)	
Baud rate	19,200
Number of data bit	8
Parity check	None
Number of stop bit	1
Flow control	None
H.323	
h323 display_name	customer
h323 h245_term_type	60
h323 rtp_port_base	30,000

h323 out_fast_start	Off
h323 in_fast_start	Off
h323 h245_tunneling	Off
h323 cisco_t38	Off
h323 callSignalPort	1720
h323 call_name	None
h323 local_alert	Off
h323 default_dtmf	H323 V2 Signal
h323 gk_mode	Off
h323 h245_timeout	30000
h323 term_id	None
Voice codec	
Preferred voice codec	G.723 6.3kbps
Telephony	
PCM codec receiver gain for FXO ports	-1 dB

Appendix F - Worksheets

IP Parameters

Consult your network manager to obtain a static IP address for the TVP-224HR, and the information about the IP subnet mask and the default gateway for your network. Fill out the following work sheet before configuring the TVP-224HR.

IP address

IP subnet mask

Default gateway

ATPM Destination Table

Local Destinations

Each telephony port of the TVP-224HR must be assigned a unique destination ID. Fill out the worksheet for local destinations by designating each port a unique destination ID, then use the CLI command **atpm dadd *dest_id* port *port#*** for each entry in the worksheet to add it to the destination table. The *dest_id* in the command corresponds to the Destination ID in the worksheet, while the *port#* corresponds to the Port#. You may alternatively use the web browser to add local destinations to the destination table.

Port#	Mode	Destination ID
0	port	
1	port	
2	port	
3	port	

Remote Destinations

Each remote TVP-224HR to be reached must be assigned a unique destination ID. Obtain the IP addresses of the TVP-224HR at remote sites and fill out the worksheet for remote destinations by designating each

remote TVP-224HR a unique destination ID, then use the CLI command **atpm dadd** *dest_id* **h323** *ip_addr* [*ip_port*]for each entry in the worksheet to add it to the destination table. The *dest_id* in the command corresponds to the Destination ID in the worksheet, the *ip_addr* corresponds to the Port#, the optional *ip_port* corresponds to the IP port. You may alternatively use the web browser to add remote destinations to the destination table.

IP address	IP port (optional)	Mode	Destination ID
. . .		H323	
. . .		H323	
. . .		H323	
. . .		H323	
. . .		H323	
. . .		H323	
. . .		H323	
. . .		H323	
. . .		H323	
. . .		H323	
. . .		H323	
. . .		H323	
. . .		H323	
. . .		H323	
. . .		H323	
. . .		H323	

ATPM Hunt Group Table

Several destinations may be grouped together to form a hunt group. When an incoming phone number matches the phone number of the hunt group, the TVP-224HR attempts to terminate the call at each of the destinations in the hunt group one at a time until a call is successfully completed. Plan how destinations are to be grouped and fill out the hunt table worksheet, then use the CLI command **atpm hadd** *hunt_group_id* *hunt_type* *dest_id* *…* for each entry in the worksheet to add it to the hunt group table. The *hunt_group_id* in the command corresponds to the Hunt Group ID in the worksheet, the *hunt_type* corresponds to the Hunt Type (1 or 2), the *dest_id* ... corresponds to the List of Destination IDs. You may alternatively use the web browser to add hunt groups to the hunt group table.

Hunt Group ID	Hunt Type		List of Destination IDs
	1	2	

Each phone number to be recognized by the TVP-224HR must have its first digits match an entry in the address table. Fill out the address table worksheet and use the CLI command

atpm   aadd *tel#*   *min_digits*   *max_digits*   *hunt_group_id* *prefix_strip_len* [*prefix#*]   to add each entry in the worksheet to the address table. The *tel#* in the command corresponds to the Digits to Match in the worksheet, the *min_digits* corresponds to the Min. # of Digits to Collect, the *max_digits* corresponds to Max. # of Digits to Collect, the *hunt_group_id* corresponds to the Hunt Group, the *prefix_strip_len* correspond to No. of Digits to Strip and the *prefix#* corresponds to the Prefix String. You may alternatively use the web browser to add telephone numbers to the address table.

Digits to Match	Min. # of Digits to Collect	Max. # of Digits to Collect	Hunt Group	No. of Digits to Strip	Prefix String

Index

TRENDnet

TRENDware, USA

What's Next in Networking

Product Warranty Registration
Please take a moment to register your product online.
Go to TRENDware's website at http://www.TRENDNET.com

TRENDnet Technical Support

US/Canada Support Center	European Support Center
Contact **Telephone:** 1(310) 626-6252 **Fax:** 1(310) 626-6267 **Email:** support@trendnet.com **Tech Support Hours** 7:30am - 6:00pm Pacific Standard Time Monday - Friday	**Contact** **Telephone** Deutsch : +49 (0) 6331 / 268-460 Français : +49 (0) 6331 / 268-461 Español : +49 (0) 6331 / 268-462 English : +49 (0) 6331 / 268-463 Italiano : +49 (0) 6331 / 268-464 Dutch : +49 (0) 6331 / 268-465 **Fax**: +49 (0) 6331 / 268-466 **Tech Support Hours** 8:00am - 6:00pm Middle European Time Monday - Friday

TRENDware International, Inc.
3135 Kashiwa Street. Torrance, CA 90505

http://www.TRENDNET.com