



Programmers Guide: FreeRide Configuration Manual

Web-Based Configuration for the FreeRide GW 200 Gateway

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GETTING STARTED...

To begin installation, attach the FreeRide to a valid Ethernet network connection through its RJ-45 port, attach a phone endpoint to its RJ-11 port and then plug in its power supply.

A terminal on the same network must be set to interact within the same domain as the gateway's initial IP address (10.0.1.10) to enter its configuration mode. Once the terminal is configured, use it to launch a browser and type the FreeRide's IP address in the navigation bar. The FreeRide "Info" page should be displayed, listing the FreeRide's default parameter settings. The FreeRide must be powered up in order to access configurations through the web interface.

*If a DHCP server is present, the FreeRide will obtain and display an IP address from it, otherwise the FreeRide will display its initial address.

If the configuration screen does not appear, make sure:

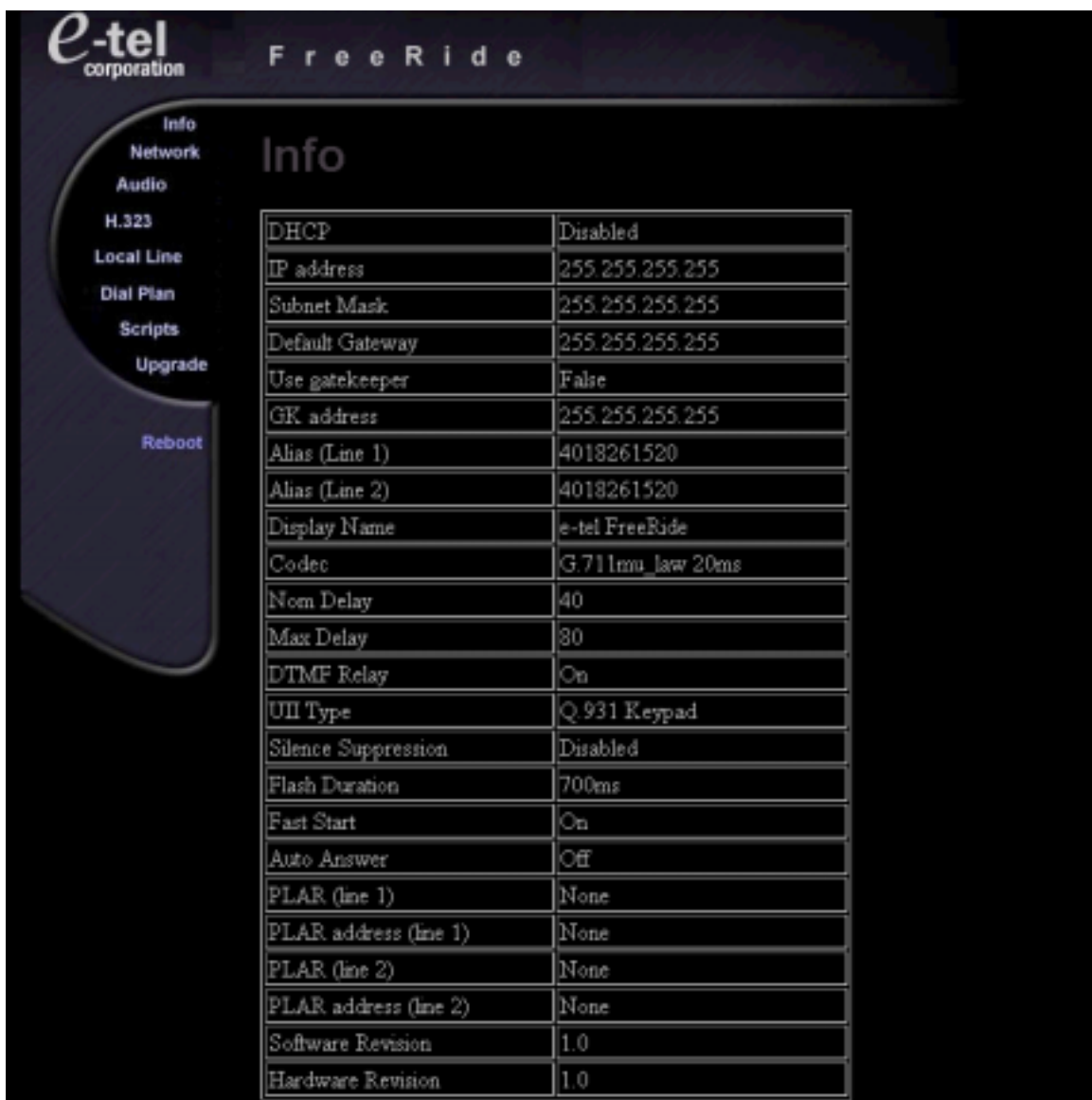
- The gateway is powered up.
- The Ethernet cable is properly connected.
- The terminal used for configuration is located on the same network.
- Try rebooting the FreeRide, waiting 20 seconds, and then testing communication again.

CONFIGURATION

The FreeRides initial IP address is 10.0.1.10.

When accessed, the web interface will initially display the FreeRides "info" page, listing its existing parameters. The list of links located at the left of the screen is used to navigate these parameters and configure them.

To change any of the FreeRides configurations select the corresponding link from the Configuration Menu Headings and edit the necessary parameters. A brief description of each menu and its parameters is listed below.



The screenshot shows the e-tel FreeRide web interface. On the left is a navigation menu with the following items: Info, Network, Audio, H.323, Local Line, Dial Plan, Scripts, Upgrade, and Reboot. The main content area is titled 'Info' and contains a table of configuration parameters.

DHCP	Disabled
IP address	255.255.255.255
Subnet Mask	255.255.255.255
Default Gateway	255.255.255.255
Use gatekeeper	False
GK address	255.255.255.255
Alias (Line 1)	4018261520
Alias (Line 2)	4018261520
Display Name	e-tel FreeRide
Codec	G.711mu law 20ms
Nom Delay	40
Max Delay	30
DTMF Relay	On
UII Type	Q 931 Keypad
Silence Suppression	Disabled
Flash Duration	700ms
Fast Start	On
Auto Answer	Off
PLAR (line 1)	None
PLAR address (line 1)	None
PLAR (line 2)	None
PLAR address (line 2)	None
Software Revision	1.0
Hardware Revision	1.0

Configuring The Gateway and Updating...

After assigning values to the parameters listed on the configuration screens, they are stored by clicking the "configure" button located at the bottom of each menu pages. **Once the browser's status bar indicates the operation successful, the gateway must be rebooted from the links listing to commit the changes and save them in memory.**

Rebooting the gateway requires a user name and password. These are currently set to "username" and "password"

Once the gateway reboots and its LED is lit, refresh the Browser to display the changes made.

If the IP address is changed, the new address must be typed in the navigation bar to reach the gateway's configuration mode.

SUMMARY OF THE CONFIGURATION MENUS

The following is a list of the FreeRides configuration menus and a brief description of each.

Info Menu

Lists the FreeRides existing settings for its configurable features.

Network Menu

Used to set the FreeRides network parameters for communication over the LAN.

Configurable parameters:

- Wired or wireless transmission
- Manual configuration or DHCP
- IP address, subnet mask, and Default Gateway
- Boot Host and Boot File
- User Name and Password
- Time Server and Time Zone

Audio Menu

Used to configure audio settings such to ensure QoS over varied networks.

Configurable parameters:

- Codec
- Jitter Buffer
- DTMF signaling
- Silence suppression

H.323 Menu

This menu is used to configure parameters that are specific to the H.323 protocol.

Configurable parameters:

- Gatekeeper or non-gatekeeper navigation
- Gatekeeper Address

- Line alias
- Caller ID display name
- Fast Start
- Auto Answer

Dial Plan Menu

This menu allows the user to configure a dial plan for IP device recognition.

Configurable parameters (relates to other IP devices):

- Number, Digits, Strip Digits, and Address
- Dial Plan display table

Scripts Menu

This menu can be used to download configuration scripts, it is rarely used and is therefore only listed at the bottom of the pages.

Configurable parameters:

- FTP Address, User name, Password, Filename

Upgrade Menu

This menu can be used to remotely perform upgrades to the FreeRide, it is rarely used and is therefore only listed at the bottom of the pages.

Configurable parameters:

- FTP server address, User name and Password

Reboot

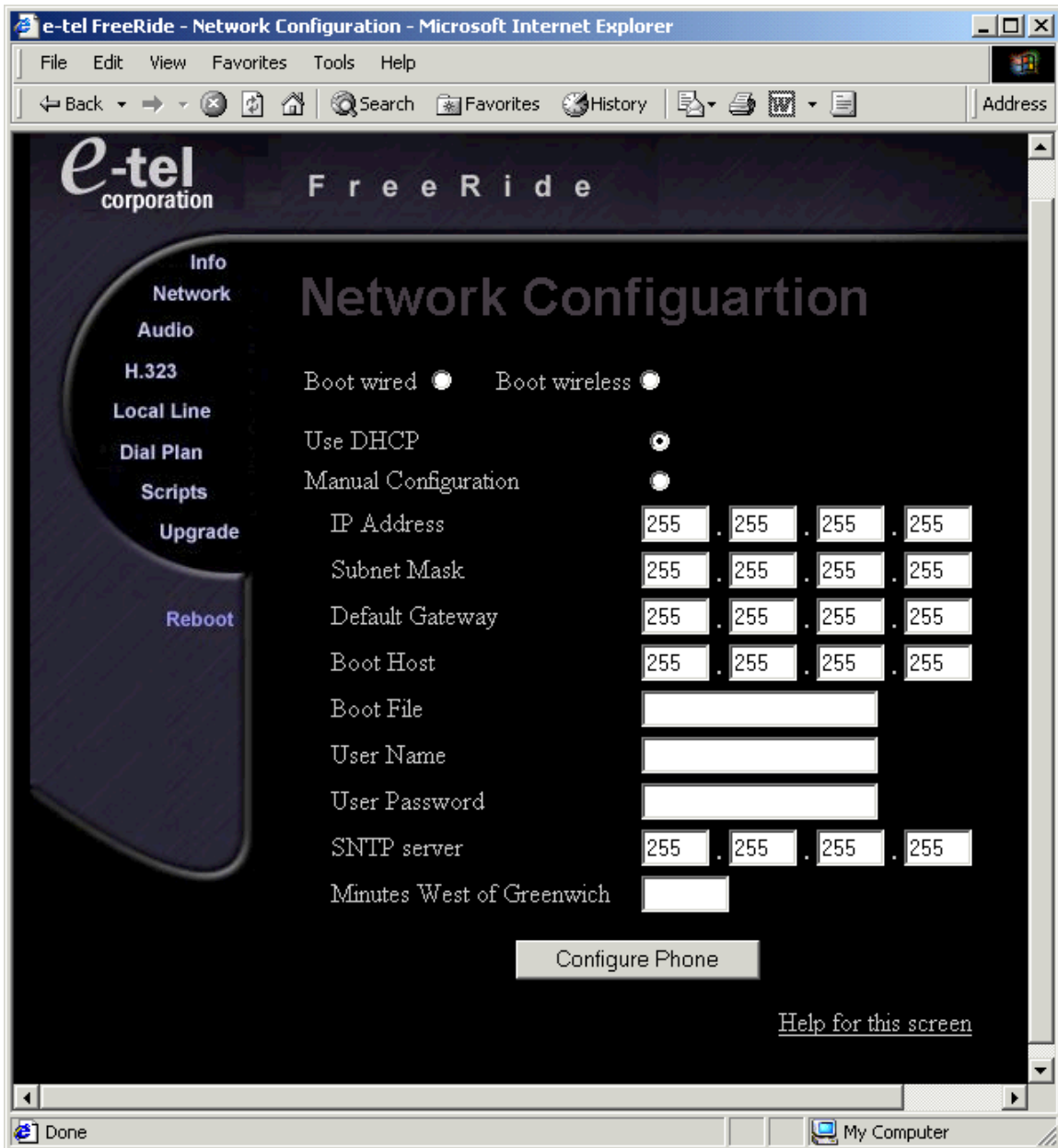
Reboots the gateway to commit changed parameters. **Rebooting the gateway requires a user name and password. These are currently set to "username" and "password"**

CONFIGURATION MENU PARAMETER FUNCTIONS

In this section, each parameter and its function is documented and explained.

NETWORK CONFIGURATION

The FreeRides network configurations must be set on this screen for communication over the LAN.



Boot Wired/Wireless

This option can only be used if the FreeRide is equipped with a wireless PCM/CIA card, but must be selected if wireless use is intended.

DHCP

When activated, the FreeRide will obtain its parameters from a DHCP server.

Manual Configuration

Allows access to the FreeRides network parameters. If selected, **IP address**, **Subnet mask** and **Default gateway** must be configured.

IP Address

This is the IP address of the FreeRide gateway. The initial address is set to 10.0.1.10. **If this is changed, the initial address can no longer be used.**

Subnet Mask

This is the subnet mask of the FreeRide.

Default Gateway

This is the default gateway that will be used for IP routing to other networks. This should not be confused with some other type of gateway.

Boot Host/Boot File

These parameters are used only to load updates into the gateway.

User Name/Password

These parameters are used in conjunction with the loading updates onto the gateway, **these are not the "reboot" user name and password. Those are currently set to "username" and "password"**

SNTP Server

If selected, the FreeRide will attempt to get the proper time and date settings from a timeserver upon boot and then pass that data to the phone top. If left blank, this feature is disabled.

Minutes West of Greenwich

This parameter must be set in conjunction with the timeserver setting.

AUDIO CONFIGURATION

The FreeRides audio configurations must be set on this page to ensure QoS over varied networks.

e-tel corporation F r e e R i d e

Audio Configuration

Info
Network
Audio
H.323
Local Line
Dial Plan
Scripts
Upgrade
Reboot

Codec: Frame size:

G.711 mu_law 10ms

G.711 a_law 20ms

G.729 30ms

Jitter Buffer:

Use Default Nom delay: ms

Specify size Max delay: ms

Out of band DTMF

H.245 Alphanumeric Flash duration ms

H.245 Signal

Q.931 Keypad Silence Suppression

[Help for this screen](#)

Codec

The Voice Coding Algorithm and Frame Size may be chosen from the *Codec* listing provided. Different Codecs provide different varying levels of voice data compression. G.711 provides 64 kbit/s and is recommended in for applications where there is a large amount of available bandwidth. G.729 provides 8kbit/s voice compression, to leverage available bandwidth in applications with limited resources.

Jitter Buffer

For optimum performance, Jitter Buffer can be changed to leverage a networks available bandwidth. The default for this setting is 2x frame size for nominal delay and 4x frame size for maximum delay.

DTMF (Dual Tone Multi-Frequency)

This parameter is dependant on codec selection. When employing any codec other than G.711, out of band signaling is recommended. If out of band signaling is selected, the user must choose between H.245 Alphanumeric, H.245 Signal, or Q.931 keypad transmission methods depending on network configuration.

Flash-Hook Duration

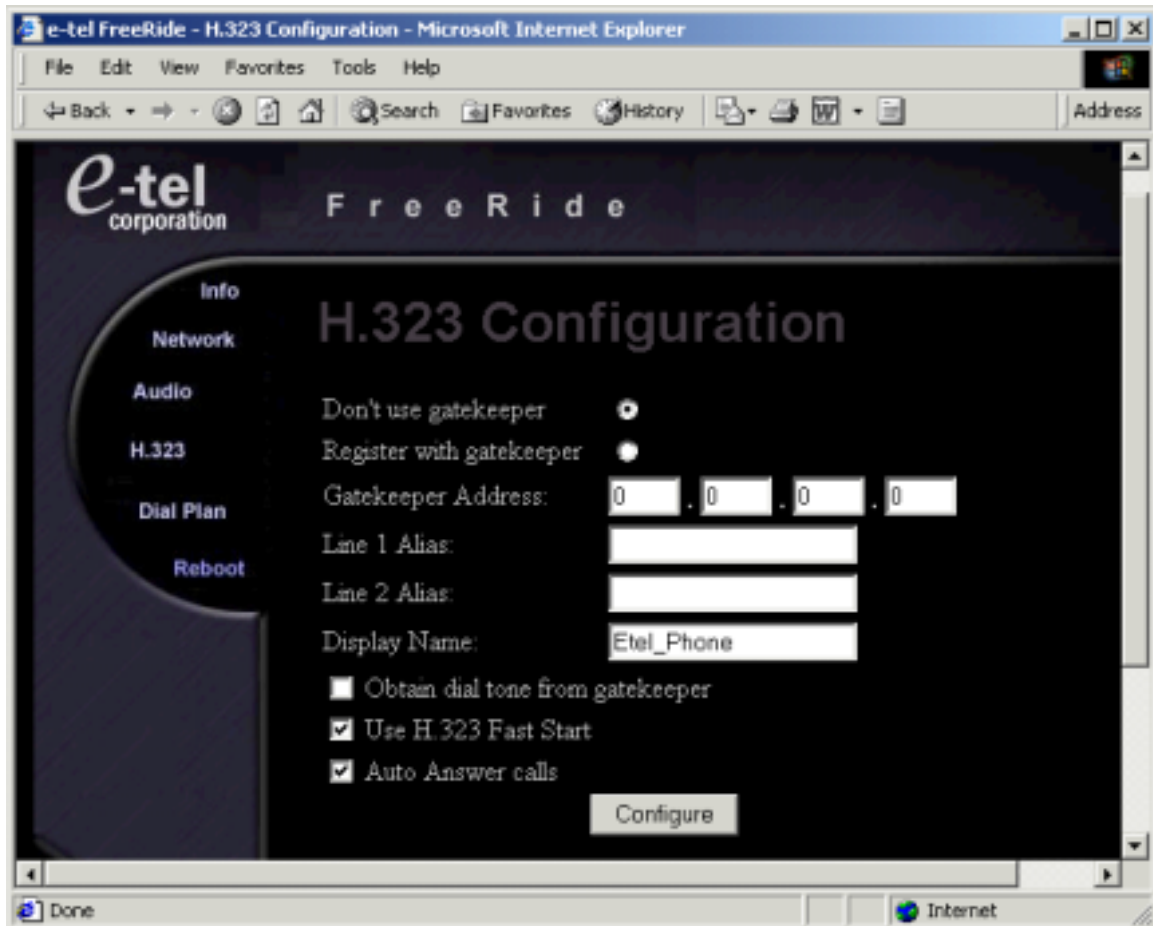
Flash-hook duration is rarely an issue. When employing a phone, the setting should remain at 700ms. If using a gateway, this parameter should only be changed if the user detects a conflict with their networks release times.

Silence Suppression

In order to save bandwidth, Silence Suppression, also called VAD (Voice Activity Detection) may be used to stop the transmitting of voice packets during periods of silence.

H.323 CONFIGURATION

The FreeRides H.323 parameters must be set in this menu for proper interaction with other H.323 entities.



Don't use gatekeeper

This setting may be turned on or off. If the setting is selected then the rest of the gatekeeper settings are irrelevant.

Register with Gatekeeper

If this setting is selected, be sure to also set the **gatekeepers address** and the **registration alias** of the FreeRide.

Gatekeeper Address

Enter the IP address of the H.323 gatekeeper here. The gateway must have knowledge of the gatekeeper's whereabouts in order to register with it.

Alias

The value of this text box will be used to register the FreeRide with a Gatekeeper, and as the number displayed in the caller ID number field. If a gatekeeper is not used, then this parameter does not have to be set, but it is necessary for passing on caller ID information properly in non-gatekeeper environments. Enter the desired caller ID display name into the **Display name** textbox.

Display Name

Enter the desired caller ID display name into this textbox.

H.323 Fast Start

If the H.323 devices on the network are H.323v2 compliant, and support Fast Start procedures, then check this setting. During Fast Start call setup, information is exchanged and media channels are set up without the use of H.245 channels.

H.323 Auto Answer

Auto answer may be used to allow a connection to be accepted and call processing to continue before the telephone is taken off hook. This may provide a quicker response on off-hook, but it may not be the desired setting for systems that need to make decisions based on whether or not the called party answered the phone. If it is necessary to know whether or not the phone is answered, then this setting should not be checked.

DIAL PLAN CONFIGURATION

This menu allows the user to configure a dial plan for IP device recognition.



In most cases, a device will exist on the network that has knowledge of the whereabouts of the endpoints on the network, and is capable of address translation between these endpoints. This device is normally some type of gatekeeper or gateway. If the gatekeeper is present, then the FreeRide may send all of its digits to it for address translation. If the gatekeeper is not present, then the FreeRide must be aware of the location of every endpoint on the network that it will initiate calls to.

Number

A number that may be dialed.

Min Digits

The minimum number of digits that will cause the end of a dial string.

Max Digits

The maximum number of digits that may be dialed before the end of a dial string.

Strip digits

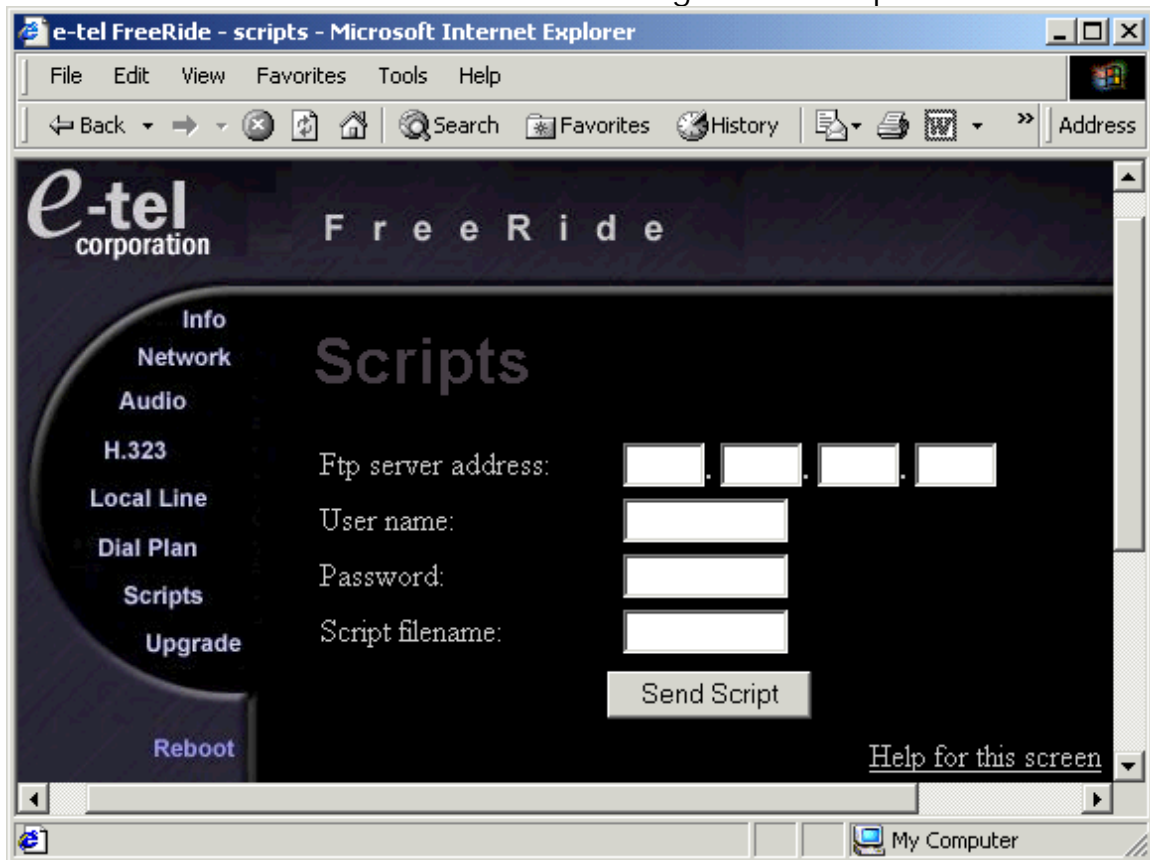
The number of digits that will be stripped from the beginning of the dial string before the digits are sent in call setup.

Add Digit

The digits entered in this box will be added to the beginning of the dial string before the digits are sent in call setup. **This parameter should be left blank if no digits are to precede the call.**

SCRIPTS CONFIGURATION

This menu can be used to download configuration scripts.



FTP Server Address

Enter the address of the FTP server that configuration scripts can be obtained from.

User Name

Refers to the user name needed to access the FTP server.

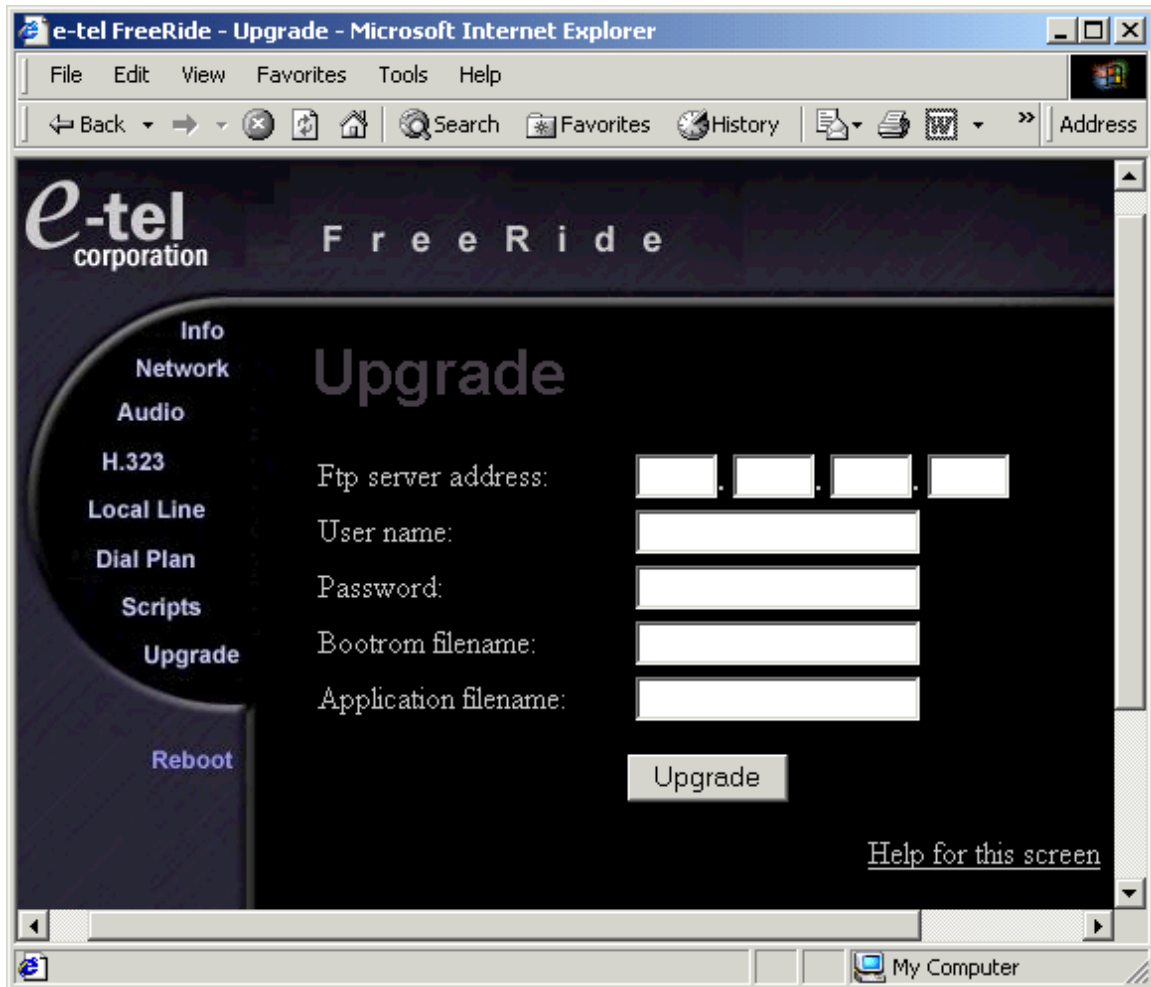
Password

Refers to the password needed to access the FTP server.

Script Filename

Enter the name of the target file that contains the configuration scripts.

THE UPGRADE APPLICATION MENU



The screenshot shows a web browser window titled "e-tel FreeRide - Upgrade - Microsoft Internet Explorer". The browser's address bar is empty. The main content area has a dark background with the "e-tel corporation" logo in the top left and "FreeRide" in the top center. A large "Upgrade" heading is centered. On the left, a vertical menu lists options: Info, Network, Audio, H.323, Local Line, Dial Plan, Scripts, Upgrade (highlighted), and Reboot. The main form contains five input fields: "Ftp server address:" (a dotted box), "User name:", "Password:", "Bootrom filename:", and "Application filename:". An "Upgrade" button is positioned below the last two fields. A "Help for this screen" link is in the bottom right corner. The Windows taskbar at the bottom shows the "My Computer" icon.

FTP Server Address

Enter the address of the FTP server that upgrade information can be obtained from.

User Name

Refers to the user name needed to access the FTP server.

Password

Refers to the password needed to access the FTP server.

Bootrom Filename

Enter the name of the target file that contains the updates.

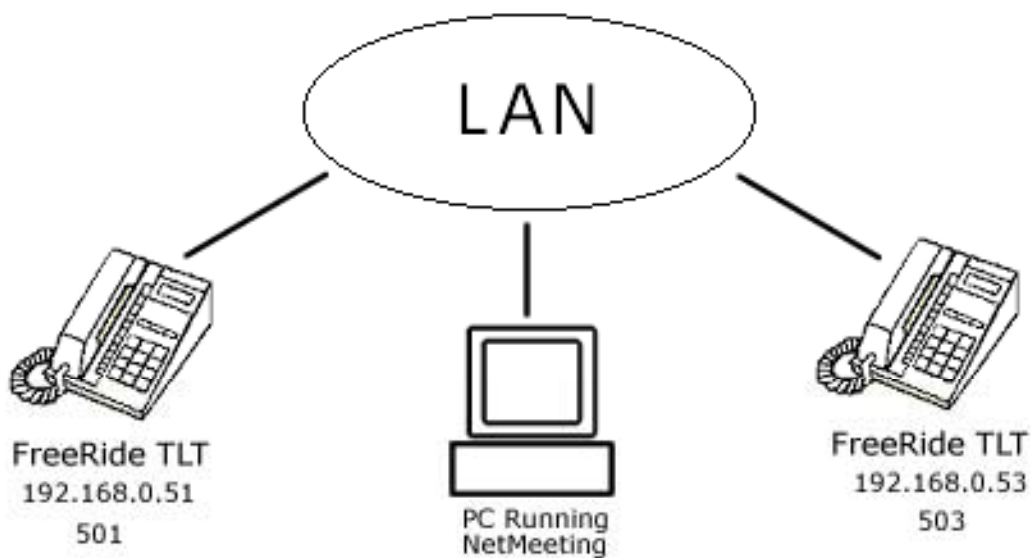
Application Filename

Enter the name of the target application that contains the updates.

CONFIGURATION EXAMPLES

FreeRide to FreeRide or other H.323 endpoint

This example describes the networked configuration of two FreeRide gateways, which may make and receive calls between one another across a LAN connection. FreeRide gateways may also make and receive calls with any H.323 standards compliant endpoint.



This example assumes the following...

IP Gateway 1

IP Address = 192.168.0.51

Phone Number = 501

IP Gateway 2

IP Address = 192.168.0.53

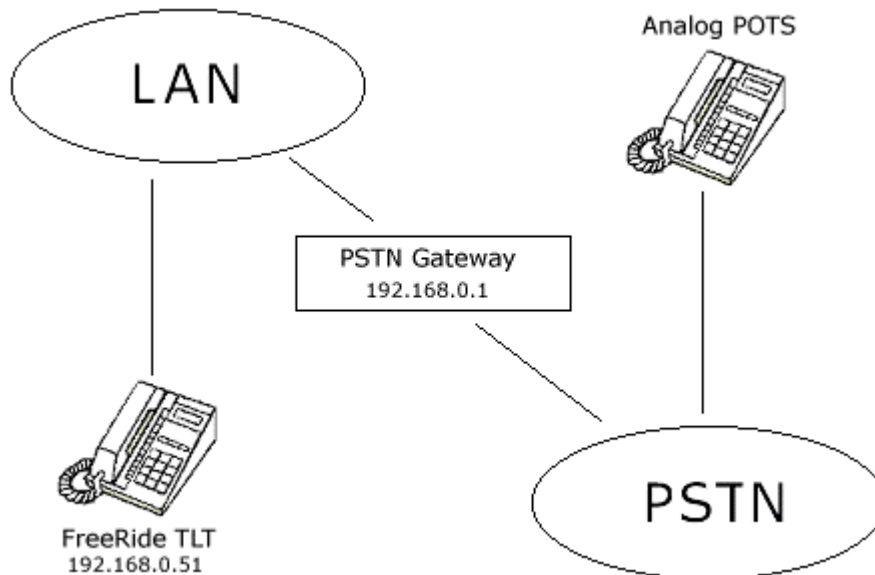
Phone Number = 503

Both gateways must be given values for the following parameters based on the information above.

- IP Address and subnet mask
- Default Gateway (if gateways reside on different networks or network segments)
- A dial plan which contains the phone number and IP address of the called phone
- Codecs and Frame Size must match

FreeRide to Analog POTS on the PSTN through a Gateway

The example describes the configuration of a FreeRide gateway, which will make and receive calls with an analog POTS on the PSTN. Other configuration changes may be necessary depending upon the requirements of the PSTN Gateway.



The following assumptions are made...

IP Address of FreeRide = 192.168.0.51

IP Address of PSTN Gateway = 192.168.0.1

Telephone Number of FreeRide = 501

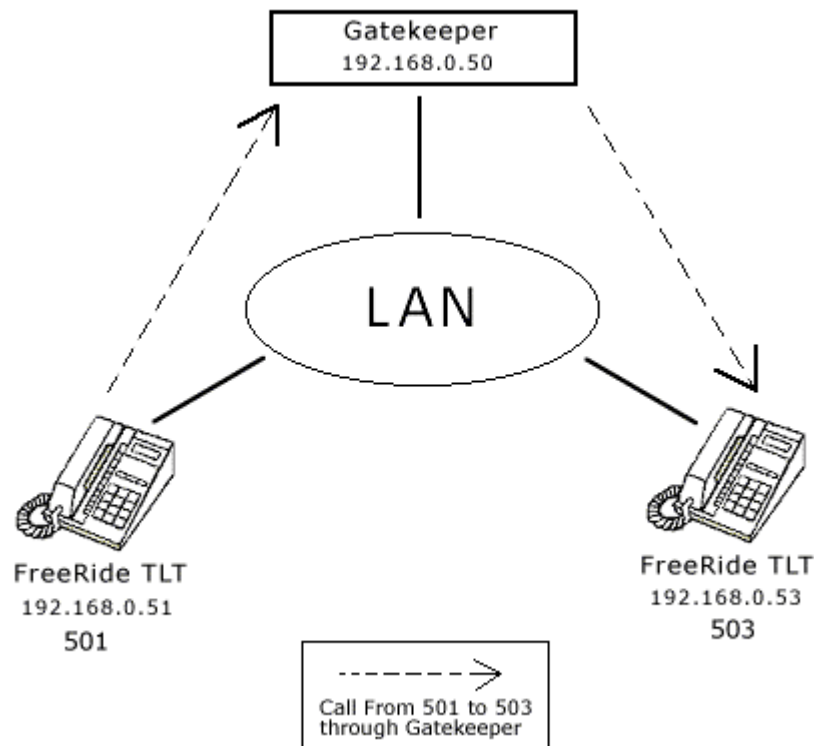
PSTN Gateway will expect the dialed digit 9 for a hop-off call

The following parameters must be configured...

- IP Address
- The Dial Plan must contain an entry for dialed digit '9' with the destination address that matches the IP address of the PSTN Gateway. This will cause the digit 9 to be sent to the PSTN Gateway, which in turn will allow calls to be made over the PSTN.
- Codecs and Frame Size must match the requirements of the PSTN Gateway

FreeRide Connected to a Gatekeeper

The following example describes the configuration of an e-tel FreeRide set up to make and receive calls through a Gatekeeper. Although it is not necessary to use a Gatekeeper to make and receive calls with FreeRide gateways and other H.323 endpoints, it is highly recommended. Settings may vary depending upon the specific Gatekeeper.



The following is assumed...

IP Gateway 1

IP Address = 192.168.0.51

Phone Number = 501

IP Gateway 2

IP Address = 192.168.0.53

Phone Number = 503

Gatekeeper

IP Address = 192.168.0.50

The following parameters must be configured...

- IP Address
- GK must be enabled and Address must be set
- Alias must be set (usually the GK will use the alias as the phone number.)
- Codecs and Frame Size must be set appropriately

FreeRide to NetMeeting

The FreeRide gateways may make and receive calls to and from NetMeeting Clients. To allow the FreeRide to make direct IP calls to NetMeeting, configure the FreeRide to make calls to another endpoint in the usual manner. Simply add an address entry to the Dial Plan with any phone number you choose and the IP Address of the PC with NetMeeting. To call NetMeeting from the FreeRide, dial the phone number you chose. The FreeRide is basically configured the same way to make calls to any H.323 standards compliant endpoint.

To call a FreeRide gateway from NetMeeting, simply dial it's IP address.

CONTACTING TECH SUPPORT

In order to receive quality, and timely service please provide tech support with appropriate information so that we may help you to get up and running as quickly as possible. To contact tech support send email to tech_support@e-telcorp.com, with a detailed description of your situation, and an attached debug file (see Settings and Support for help on making a debug file). We appreciate any information you may provide, so that we may provide you with the highest level of service.

Sincerely,
tech_support@e-telcorp.com