



eyeP Phone Desktop MGCP

User Guide

Revision History

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1.3	04/11/2005	Antoine Donzé	Call stateless version: removed answering machine, auto hang-up, auto answer, transfer features, added MWI
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Related documents

Document filename	Document Title

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Table of contents

1 Introduction 4
2 Features 5
3 Installation 7
3.1 Computer requirements 7
3.2 Create an account 7
3.3 Install MGCP eyeP Phone Client 8
3.4 Uninstall eyeP Phone 8
4 Configuration and use 9
4.1 Main window 9
4.1.1 Configuration settings 11
4.1.1.1 MGCP settings 11
4.1.1.2 Network settings 12
4.1.1.3 Audio settings 14
4.1.1.4 Configuration settings: license 15
4.2 How to place a call 16
4.2.1 Make a call 16
4.2.1.1 What you can dial 16
4.2.1.2 How to dial 17
4.2.1.3 Answer and hang up a call 18
4.2.2 Make a call using Speed Dial 19
5 Conclusion 20

1 Introduction

Welcome to MGCP eyeP Phone from eyeP Media SA. This product quickly transforms your desktop or laptop into a multi-function MGCP softphone client. It is available in two versions: eyeP Phone Desktop, a stand-alone application, and eyeP Phone Outlook, which is integrated with Microsoft Outlook. You can use either product to make calls between any two points which have Internet access and an MGCP account with a service provider. Both products can connect to any other MGCP telephone, including standards-compliant MGCP softphones and hard phones, allowing quality voice communication over the Internet.

A softphone is a telephone developed to use LAN (intranet) and WAN (Internet) infrastructures. It must follow rules and international standards to enable interoperability with the different softphones available on the market. MGCP eyeP Phone clients use the MGCP (Media Gateway Control Protocol) protocol. MGCP is a signaling protocol used for establishing sessions between softphones and call agents (CAs) over an IP (Internet protocol) network. MGCP is based on a master-slave relationship between the call agent and the softphone. While some of the softphone features you will be able to use (conferencing and audio signal treatment) are directly implemented on the softphone, most of them (call transfer and personal mobility) are provided by the call agent, or rather the service provider that owns the call agent. We recommend looking on the Internet to find out which service provider offers the most richly featured services at the best price.

While data networks can tolerate delays but don't allow much scope for transmission errors, voice and video transmission requires minimal delays to enable the accurate reconstruction of the audio and video content. MGCP has the facility to enable the appropriate level of quality.

This user guide covers the various features of the MGCP eyeP Phone client that you can use to make and receive calls. With the richly featured MGCP eyeP Phone client, you can also initiate three-way local conferencing on a personal computer running versions of Windows 95 to XP. eyeP Media softphones use a full range of audio compression codecs. This means excellent voice quality with dial-up, broadband and wireless connections. Using broadband Internet connections and associated audio compression codecs, the quality of service is often equivalent to that of traditional telephone systems.

Other major features include: (i) acoustic echo cancellation which allows you to use your PC as a speakerphone, (ii) superb noise reduction, automatic gain control and voice activity detection, and (iii) speed dialing.

eyeP Media provides the softphone client (telephone) that you will need to make phone calls. In addition you will need an MGCP provider to access MGCP network services and complete calls between MGCP phones (phone number and line management).

2 Features

- **Cost**

There is a nominal one time charge for eyeP Phone, which can be purchased directly from the eyeP Media web site.

- **Available for Windows 95, 98, 98SE, ME, NT4, 2000, XP and Windows CE 3.0**

- **NAT/firewall support traversal:**

If you are behind an NAT/firewall, you may not be able to make or receive calls because you are shielded for security reasons. For example, if you are behind a "symmetric NAT", you will need eyeP Media's TURN and STUN server support to complete your call without compromising the security of the firewall. eyeP Phone will automatically choose the correct strategy to resolve the firewall issue.

- **Acoustic Echo Cancellation for speakerphone functions:**

This function increases the quality of your voice communication by suppressing echoes.

- **Voice Activity Detection for network bandwidth optimization:**

This function minimizes the network bandwidth used by transmitting only when voice activity is detected, and not transmitting during periods of silence.

- **Automatic Gain Control, self-regulation of the microphone volume:**

This function automatically sets the microphone volume in a predefined range that is typically comfortable for the listener.

- **Noise Reducer:**

This function reduces the background noise of any microphone used.

- **Works with any full-duplex sound card:**

Full-duplex sound cards allow simultaneous voice communication between the speakers without interference.

- **Full integration of USB handset and headset devices:**

USB phone devices typically improve the overall quality compared with analog headsets. eyeP Media has certified a number of USB handset and headset manufacturers to allow plug-and-play operation. For Bluetooth-equipped PCs, a Bluetooth headset can be used.

- **Automatic updates**

Each time the eyeP Phone software is launched, the application will connect to eyeP Media's license server to check if updates can be made. Two different types of updates may be available:

License update: If you have purchased another eyeP Media product, other codecs or more lines, your MGCP eyeP Phone will automatically be updated the next time you use it.

Version update: eyeP Media constantly improves its products. To allow you to easily benefit from these improvements, you will be asked to download the new version of your MGCP eyeP Phone each time it is available. Note that some updates will be mandatory in order to continue using the softphone.

- **Codec selection: GSM, G.711 (μ -law and a-law), G.723.1, G.729a**

You can manually choose the audio codec (for advanced users) or allow the softphone to automatically select the best codec for the connection. Caution: manually selecting an inappropriate codec may lead to a degradation of voice quality. eyeP Media recommends automatic selection.

- **Interoperability and compliance**

Interoperability tests with hardware providers have been performed. Contact us if you want to check if eyeP Phones is interoperable with the gateway you are using.

eyeP Media's phone is compliant with RFC 3660 (MGCP), Business Phone Package RFC 3149 (MGCP), RFC 2833 (DTMF), and many others. Contact us for a detailed list.

- **Multiple Lines:**

This function allows you to handle multiple calls. Pro and Outlook versions enable you to handle up to four lines.

- **Message Waiting Indicator:**

This function allows you to see if you have messages stored in your mail box. Note that the mail box feature is provided by the service provider.

3 Installation

3.1 Computer requirements

Operating systems supported

- Windows 95, 98, 98 Second Edition, Millennium, NT4.0 SP4, 2000, XP and Windows CE 3.0

Hardware Requirements

- Audio only: Pentium 166 MHz, 32 MB of RAM (minimum) / Pentium II 400 MHz, min. 64 MB of RAM (recommended)
- Audio and video: Pentium III 800 MHz, min. 128 MB of RAM recommended
- 5 MB of free hard disk space or better
- Full-duplex sound card with microphone and speakers are required for audio support

Network Connection

- TCP/IP installed on the host PC
- 14,400 bps modem or faster, ISDN, LAN or fast Internet connection recommended

3.2 Create an account

In order to use eyeP Phone, you must first create an account via the web site of the provider of your choice. Do not hesitate to consult different web sites to find out which provider's offering best fits your needs. Note that some are free and others are not.

With the MGCP protocol, the softphone configuration depends on the requirements established by the call agent. Depending on the manufacturer's call agent implementation, call agents may not have the same behavior. Nonetheless, all call agents need the same kind of information.

After registering, you will be provided with:

- A user name (gateway name) that helps identify you each time you call someone.
- An end point name/end point names that set(s) the number of lines you may use and also help(s) identify you each time you call someone.
- A call agent address via which you will make your calls. If you are using a version of eyeP Phone provided by your service provider, this information may already be hard-coded within the softphone.

To draw an analogy with the regular telephone world, you now have a phone number which personally identifies you.

The next step before making calls will be to install the MGCP eyeP Phone client.

3.3 Install MGCP eyeP Phone Client

Once registered, you can proceed to install your MGCP eyeP Phone:

1. Download the eyeP Media softphone of your choice. Use the links specified by eyeP Media after you requested a trial version or purchased an eyeP Media product from eyeP Media's website.
2. Follow the instructions: installation is automatic.
3. Launch the application by default from: Start/Programs/eyeP Media/MGCP eyeP Phone Desktop.
4. If you don't have one yet, create an account with the service provider of your choice.
5. Configure eyeP Phone with your account information (see Chapter 4 for details).

3.4 Uninstall eyeP Phone

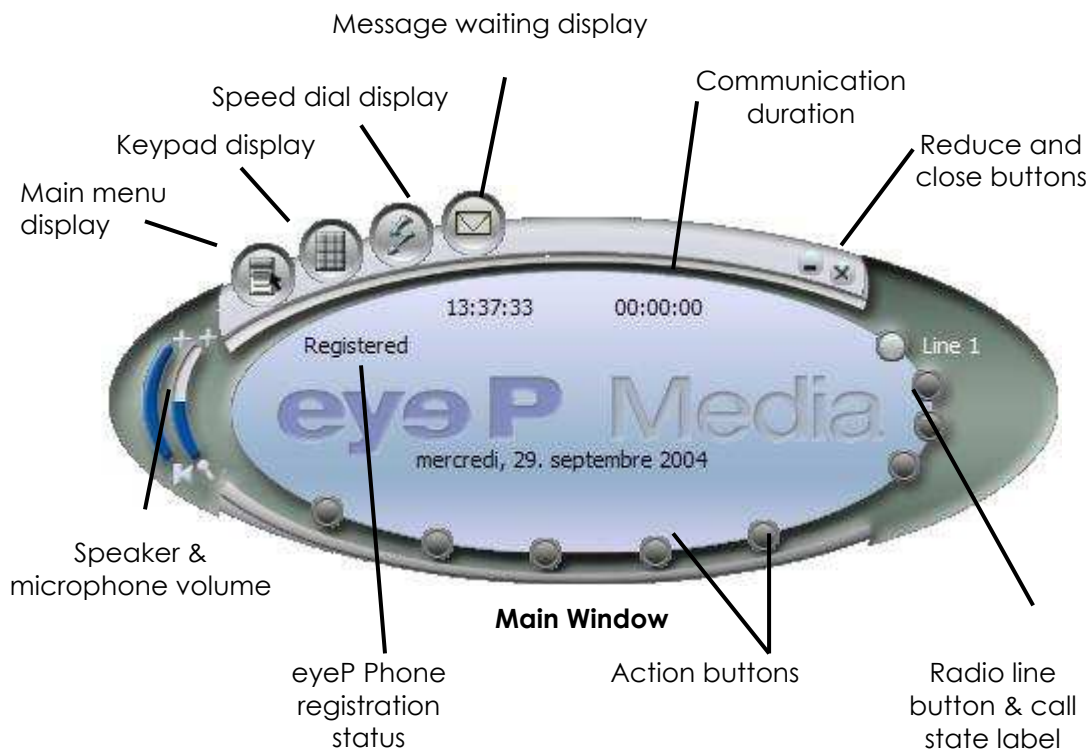
To uninstall the MGCP eyeP Phone client, there are two ways to proceed:

- Uninstall by running the UNWISE file contained in your MGCP eyeP Phone client folder. Follow the instructions displayed on your screen.
- Uninstall by using Windows' add/remove program in Settings/Control Panel. Follow Windows' instructions.

4 Configuration and use

MGCP eyeP Phone is designed to be 'plug-and-play' software. Configuration requires minimum effort. Thereafter you will be given a small number of options that we will discuss below. The different configuration examples will use an imaginary account with non-usable data.

4.1 Main window



- **Main menu display:** By clicking here, you access the different configuration panels.
- **Keypad display:** By clicking here, you display the dialing pad.
- **Speed Dial display:** By clicking here, you display the speed dial options.
- **Message waiting display:** By clicking here, you access your mail box. When messages are stored in your mail box, the icon blinks. Note that this feature is proposed by the service provider. The icon may be present but not active if your service provider do not offer you this functionality.
- **Communication duration:** Displays the duration of the call in hh:mm:ss.
- **Reduce and close buttons:** Theses buttons close or minimize the application.

Confidential

- **Radio line buttons & Call state label:** Labeled buttons displaying how many lines are available. Click on these buttons to pick up or hang up a line. The line status is also displayed:
 - Grey: Line not available.
 - Faded (blue): Ready to make a call.
 - Green: Proceeding, connected, incoming call, ring back, disconnected or dialing.
 - Orange : Error.
- **Action buttons:** Action buttons become active when a call is in process.
 - Mute: The active call will be muted. Only the microphone will be turned off. You will still be able to listen.
 - Hold: The active call will be put on hold. From this state you can either initiate a transfer or a conference, or answer/make another call.
 - Reject: Click on the Reject radio button to reject an incoming call.
- **eyeP Phone registration status:** Displays the phone state:
 - Registered You are connected to your MGCP provider and can now make or receive calls.
 - Registering: Registration in progress. Wait for the 'Registered' message.
 - Not connected: eyeP Phone cannot reach the server.
- **Speaker & microphone volume:** The left gauge indicates the speaker volume. The right gauge indicates the microphone volume. There are three ways of adjusting the volume:
 - On eyeP Phone using these two buttons.
 - On your computer.
 - On the device you are using.

4.1.1 Configuration settings

4.1.1.1 MGCP settings

• Gateway Name:

This field added to the gateway end point name will help to identify MGCP eyeP Phone to the call agent: EndPointName@GatewayName.

The syntax of this field will be set in accordance with the call agent's requirements. Usually the gateway names used are either an IP address or a domain name.

• Gateway End Point Name:

This field added to the gateway name will help to identify MGCP eyeP Phone to the call agent: EndPointName@GatewayName.

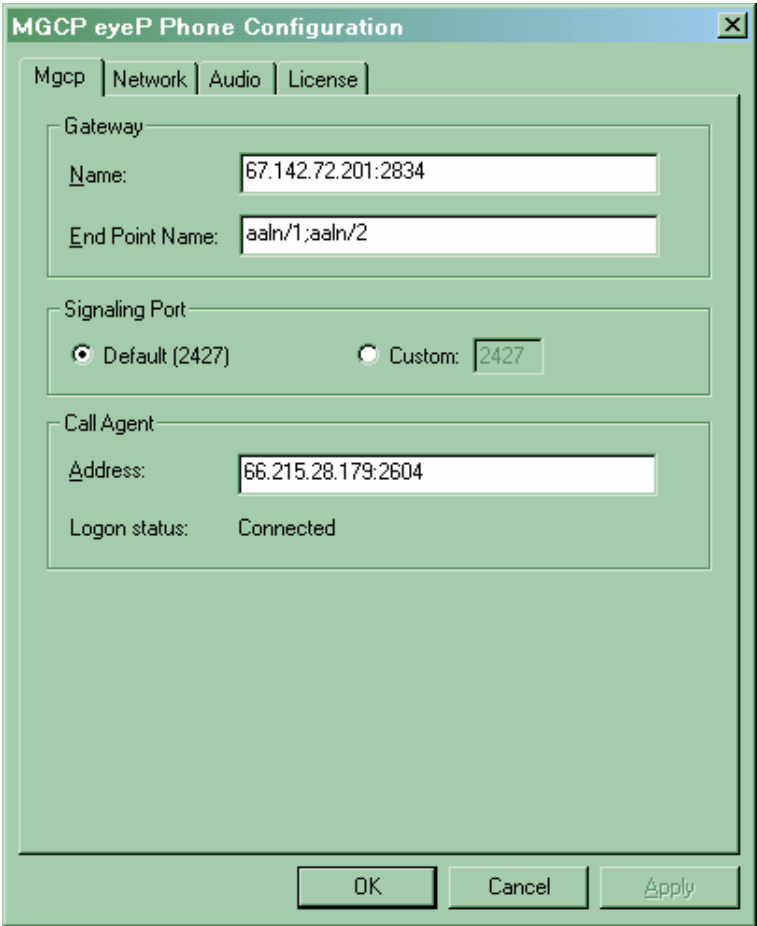
The syntax of this field will be set in accordance with the call agent's requirements.

The number of lines you will be able to use is equal to the number of end point names you have declared. When setting two or more end point names, separate each name from the others using a semicolon (;).

• Signaling port:

Provides a way to configure the signaling port to be used by the application.

eyeP Media strongly recommends that you do not change this setting. The only case where you could change it is if you have more than one eyeP Phone (Outlook and Desktop) installed on one computer. Two or more eyeP Phones cannot run at the same time and therefore use the same port.



MGCP Configuration Tab

- **Call Agent Address:**

Enter your service provider's call agent IP address. If you do not specify the port number at the end of IP address, port number 2727 will be used by default as the signaling port.

- **Logon Status:**

Displays whether or not you are connected to your MGCP account. You must have a connected state to be able to make a call.

4.1.1.2 Network settings

- **Adapter:**

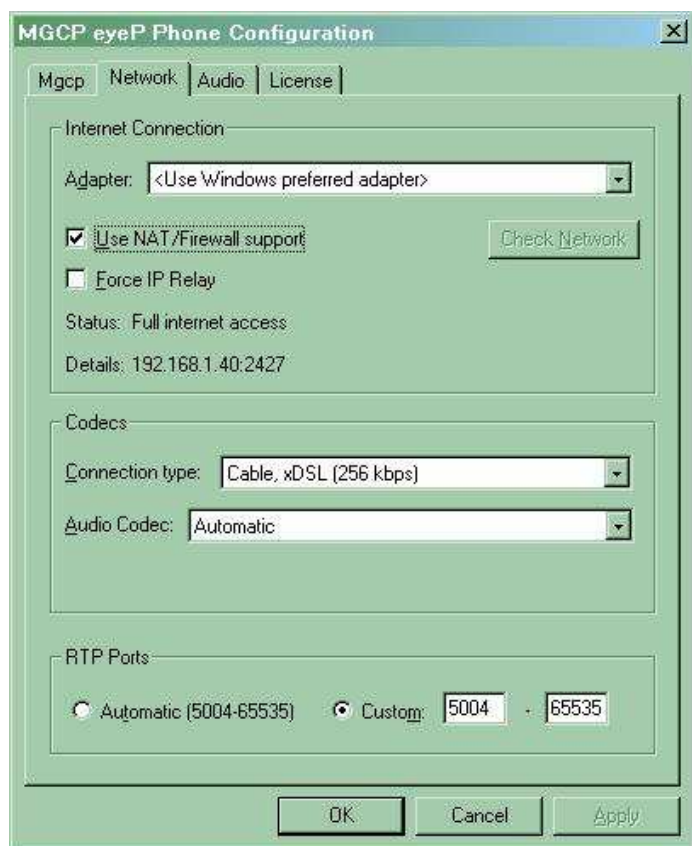
Displays a list of the different devices installed on your computer. Such devices (e.g. Ethernet card, wireless, etc.) allow you to connect to the Internet. Unless you are an advanced user, you should select the <Use Windows preferred adapter> option and let Windows make the choice.

- **Use NAT/Firewall support:**

You should check this box if you are accessing the Internet through a router or firewall that performs address translation. eyeP Media products use the STUN protocol to efficiently determine what kind of NAT you are behind. If you are not sure whether you are behind a NAT or not, you should check this box anyway. This will not affect the performance of your eyeP Phone.

- **Force IP Relay:**

This should be checked if you are experiencing problems such as having one-way audio or no audio at all. It means for example, that you are behind a symmetric NAT. If this option is checked, it may increase voice delay and decrease voice quality.



Network Configuration Tab

- **Status:**

Indicates whether you have full Internet access, and shows the type of NAT you are behind (e.g.: symmetric, full cone, restricted or port restricted).

- **Details:**

The first address corresponds to your PC's private IP address. The second address is the address of the NAT/firewall you are behind.

- **Connection type:**

You must specify whether you want to use a dial-up modem (narrowband connection) or a LAN, Cable or xDSL (broadband) connection.

- **Audio Codec:**

You can specify which audio coding process you would like to use. Your provider offers a selection of codecs. You can try different settings to determine the best audio quality from the combination of your network connection and the audio device (headset or handset) you are using. If you feel uncomfortable changing audio codecs, let eyeP Phone select the best codec for the connection by leaving the setting on 'Automatic'.

Broadband connections will provide excellent voice quality with the G.711 codecs. Dial-up connections and networks optimized for conserving bandwidth will use the G.729a or the G.723.1 codecs.

- **RTP Ports:**

This setting is automatically negotiated with your provider. eyeP Media strongly recommend leaving the settings as they are.

4.1.1.3 Audio settings

- **Recording:**

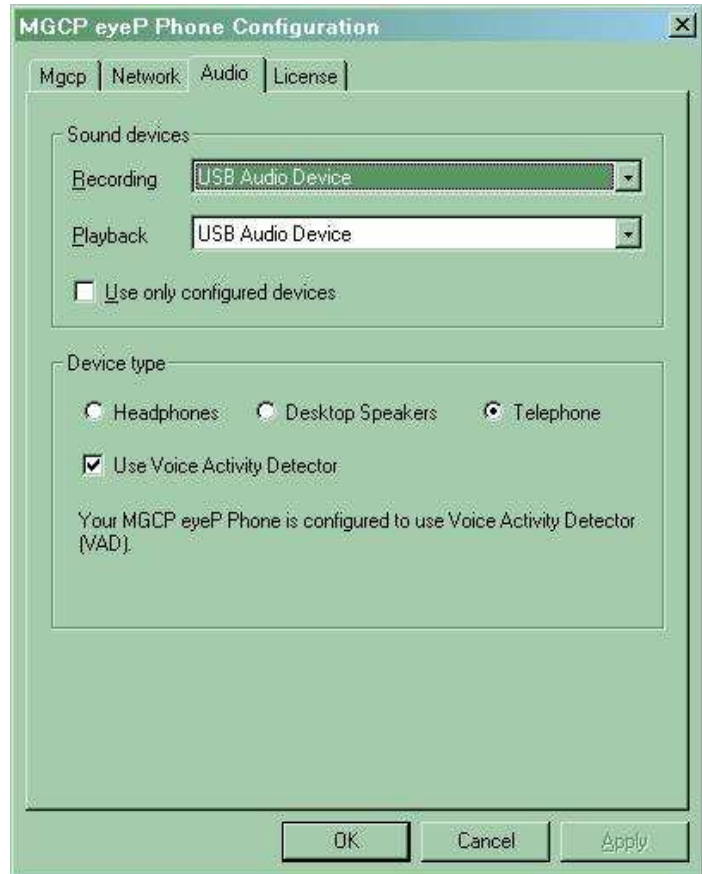
This window displays all the microphone sound devices installed on the computer. You can choose which one you want to use or let Windows choose by leaving this option on <Use Windows preferred device>.

- **Playback:**

This window displays all the speaker sound devices installed on the computer. You can choose which one you want to use or let Windows choose by leaving this option on <Use Windows preferred device>.

- **Use only configured devices:**

If you check this option, a message will be displayed asking you to choose another device if the chosen audio device is removed. If you do not check this option, Windows will automatically choose another audio device as default.



Audio Configuration Tab

- **Device type:**

Depending on the audio device you are using, you need only to activate the audio features you require. For example, for good sound quality the desktop speaker uses the Acoustic Echo Canceller (AEC), Automatic Gain Control (AGC) and the Voice Activity Detector (VAD). The headphones only need the AGC and the VAD. A telephone handset only needs the VAD.

If you do not match the 'Device type' with the actual device you are using, eyeP Phone will work, but the quality may be reduced depending on the mismatch conditions. For optimized sound quality, select the 'Device type' that corresponds to the audio device you are using.

For sound quality or test reasons, you may force the application to use the voice activity detector or noise reductor by checking one of the corresponding dialog boxes. You should try enabling or disabling these features to find out what your favorite sound configuration.

4.1.1.4 Configuration settings: license

- **License Status:**

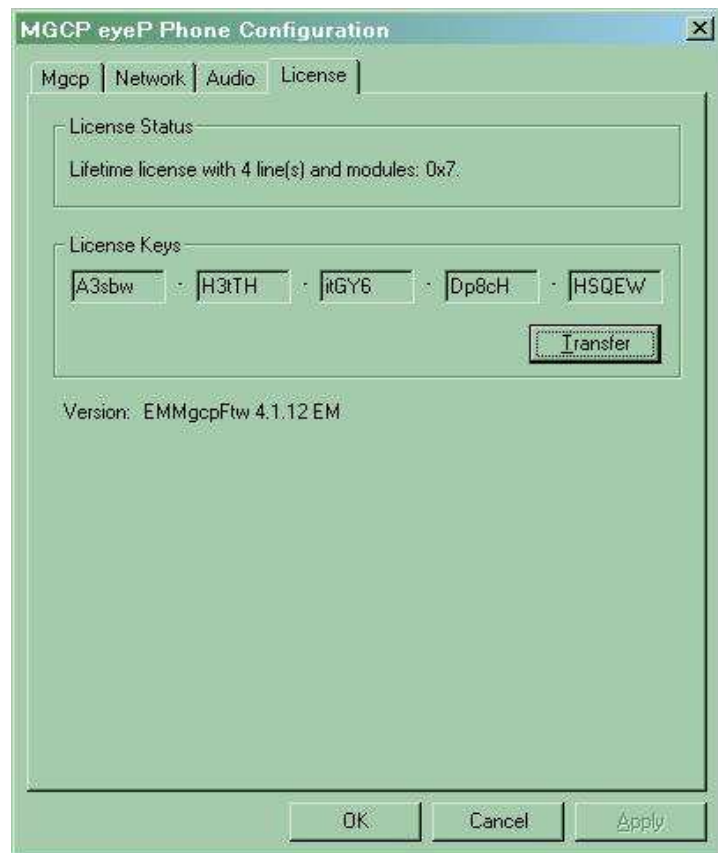
Describes the type of license you own and its validity:

The validity of your license: either lifetime or until a certain date.

The number of lines you can use: from 1 up to 4.

Information about which codecs you can use are stored on a byte. You won't be able to read this byte unless eyeP Media has given you the codecs/bit pairs. Instead, you can check on the 'Network' tab under Codecs/Audio Codec to see what is available to you.

Please note that if you are using a trial version, you don't need a license in order to use eyeP Phone.



License Configuration Tab

- **License Keys:**

Displays your personal 25-digit license key.

- **Register/Transfer button:**

This button appears on the 'Register' tab only when you need to insert a license key for your eyeP Phone. To do so, you have to enter the license key (case sensitive) and validate it by clicking the 'Register' button. Once the key is authenticated, the button changes into the 'Transfer' button.

If you need to reinstall the eyeP software on a different computer, you first have to free up your license key by clicking on the 'Transfer' button. Then you may re-register this license on any computer you wish. Please note that you are allowed to make up to ten transfers. If you exceed this limit, your eyeP Phone will be useable but blocked on the last used computer.

- **Version description:**

This line fully describes the current version of your eyeP Phone. While encountering any issues requiring some support, this line should be added to any mail addressed to eyeP Media.

4.2 How to place a call

4.2.1 Make a call

4.2.1.1 What you can dial

There are different authorized formats for dialing a phone number. Each service provider may have its own dialing plan depending on the type of call agent it is using. You should check your service provider's web site or documentation to find out its dialing plan. Some kind of short cuts to numbers of customers of the same service provider may be offered.

Usually , two types of calls may be performed:

- Calls to other softphones. Often the following format and short cut (usually only for customers of the same provider) are used:

AccountNumber@ServiceProviderAddress → 2985028@megaTel.com

AccountNumber → 38405828

- Calls to regular and cell phones. The number usually consists of a prefix added to traditional numbering:

Prefix + phone number → For example an international call to Switzerland from the USA would be #453 011 41 24 4239420 (prefix + international prefix + country code + area code + phone number).

In MGCP, every dialing plan consists of only digits, plus # or *. It may not contain letters or special characters.

Owing to the way MGCP is implemented, the use of a call agent is mandatory, meaning that it is not possible to perform direct PC to PC calls.



Main Window + Keypad

In the example above, you can clearly see the line currently in use and its call status ('Connected'), the time and date, the different radio action buttons 'Hold' and 'Mute', and the call duration.

4.2.1.2 How to dial

You can dial the number either from the computer's keyboard or from eyeP Phone's dialing pad. Note: if you need to type letters or special signs, you can only do so from the keyboard. There are two ways of making a call: you can dial when eyeP Phone is 'on hook', or when you hear a dial tone:

- When phone is 'on hook':

Enter the number and click on the Call button, or select one of the ready lines directly by clicking on the corresponding Ready button. The number will be dialed automatically. If you click on the Call button, Line 1 will be selected by default. If you made a mistake, you can correct it as long as you have not yet clicked the Call button

- With dial tone:

Click one of the Ready buttons or the Call button. If you click the Call button, Line 1 will be selected automatically. You will hear a dial tone. The numbers will be sent directly after you enter them. Caution: if you make a mistake, you won't be able to correct it, and will have to start all over again.

Once the dialed number has been sent, the call can be in the following call states:

- Proceeding: Trying to connect to the number of the person you have dialed.
- Connected: The line is connected, and you can talk.
- Dial tone: You hear a dial tone when you pick up the phone.
- Dialing: The numbers dialed are being sent.
- Ring back: You are waiting for the person dialed to pick up.
- Incoming call: A call is waiting for you to pick up the line.
- Disconnected: The person at the other end of the line has hung up.

Once the call is connected, you can use the radio action buttons.

- Mute: Click on the Mute radio button and the active call will be muted. Note that only your microphone will be muted: you will still be able to listen. Click on the same radio button when it is labeled Unmute to turn the microphone back on.
- Hold: Click on the Hold radio button and the active call will be put on hold. From this state, you can answer or make another call. Click on the same radio button when it is labeled Unhold to reconnect the call.

Before an incoming call is connected, you can use the radio action button for incoming calls:

- Reject: Click on the Reject radio button to reject an incoming call.

On the eyeP Phone key pad, the usual numbers, letters, * and # are available. There are also four extra buttons:

- eyeP Media: Opens an Internet window to the eyeP Media web site.
- Delete: Deletes the last digit, but only when 'on hook'. You may also use the Backspace key to delete a digit.
- Redial: eyeP Phone remembers the last ten calls that you have made. To make a quick call back, click on the phone number you want to dial from the displayed list.
- Flash: Enables/validates the use of special features such as call transfer. Each service provider has its own features linked to the flash button. You should check with your service provider to find out exactly how to use this button.

4.2.1.3 Answer and hang up a call

To answer a call, click on the radio button of the line that is ringing, or press the Enter key. Note that if eyeP Phone is in a minimized state, it will automatically restore upon the first ring of an incoming call

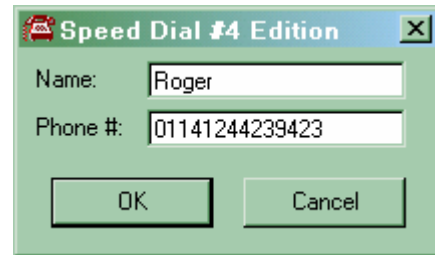
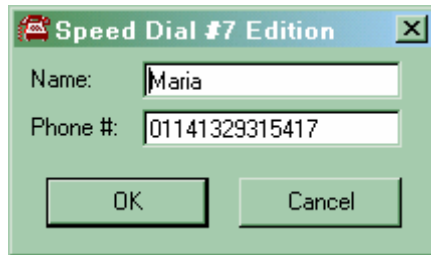
Since it is possible to manage several calls on different lines, there is no 'Hang up' button (because it would be difficult for the application to tell which line it should close). To hang up a call, click on the Line button of the line you wish to close. The line should display a connected state. You can also close the active call by pushing the Esc key on your computer keyboard. If your correspondent hangs up first, eyeP Phone should hang up at your end automatically.

4.2.2 Make a call using Speed Dial

To allow you to quickly call your frequently used numbers, eyeP Phone has a speed dial function. You can store up to eight of your favorite numbers. To enter your favorite numbers, proceed as follows:

If there are no numbers entered, click once on the corresponding round button. An edit box will pop up. Fill in the two blank lines. The phone number must conform to the authorized address format. Click OK when complete.

If there is already a phone number entered, right click to enter the edit box. Then proceed as described above.



Speed Dial Edition Window

To make a call using a speed dial number, click on the radio button corresponding to the desired number, and eyeP Phone will select Line 1 as default. Or select a line first and then click on the radio button of the desired speed dial number.



Main Window + Speed Dial

5 Conclusion

If you want to reduce your telephone costs and have a computer with Internet access, then MGCP eyeP Phone is the solution for you. A minimal initial investment enables you to benefit from an effective, easy-to-use effective communication tool. MGCP eyeP Phone is designed to allow you to use a softphone with minimum effort. Complicated configuration rules are not required. You can begin using eyeP Phone immediately, and can customize your softphone by changing only a small number of parameters. All eyeP Media products offer high performance and outstanding interoperability with common network devices. With MGCP eyeP Phone, you will be soon enjoying a quality telephone service at little or no cost.