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# **mobiVoIP<sup>®</sup> 1.0**

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## **User Manual**

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# mobiVoIP 1.0



# Getting started with mobiVoIP



## Introduction

Thank you for choosing mobiVoIP to communicate effectively and to expand your PDA's capabilities to be used as a telephone.

New technologies allow you to make telephone calls through your PC using a new and growing technology known as "Voice over Internet Protocol" or VoIP. With VoIP technology, the call is routed through your internet and gets terminated to a PSTN or other VoIP client. Instead of passing the telephone call to your telephone operator, it uses your existing internet connection and thereby provides cost savings on your phone bills.

Since the introduction of Palm Pilot, Personal Digital Assistant popularly known as PDA has become an important component to organize business affairs. With the increasing demand for PDA functionalities, mobile phones have started incorporating them and the convergence is taking place at a rapid pace. Gartner predicts that "By 2010 all devices will be smart phones with PDA capabilities".

Wireless industry leader, MantraGroup Inc., makes the first attempt in the Palm industry to bring VoIP technology to your Palm PDA with its mobiVoIP solution. mobiVoIP allows you to place a telephone call directly from your PDA thus expanding your PDA's capabilities to be used as a converged device. mobiVoIP can help you realize competitive advantages through lower communication costs and increased productivity.

## Summary of Key Features

Key Features provided in mobiVoIP are listed in order of functionality

- ✓ Ability to make **PSTN calls over IP!**
- ✓ **Free Calls** within mobiVoIP community!
- ✓ **Caller-ID** [via SIP]
- ✓ Profiles Settings Dialog [for configuring user Account]
- ✓ **Secure Account Authentication** using SIP MD5 Authentication
- ✓ **Network Settings** Dialog [for IP address related settings]
- ✓ **Automatic IP resolution** [via STUN servers]
- ✓ Detecting **Dynamic IP** [when STUN is disabled]
- ✓ **Codecs** supported: **G.711** and **GSM 6.10 FR** [GSM 6.10 FR for low speed connections > **60kbps**, G711 for high speed connections > **160kbps**]
- ✓ **Call Timer** [should be enabled from Debug Prefs]
- ✓ **Audio Configuration** Dialog [to save your bandwidth with voice activity detection]
- ✓ **Calibration Test** - estimate your environment noise and use for noise suppression.
- ✓ **Noise Suppression** - a great feature to save your bandwidth usage - use your connection only to transmit your voice.
- ✓ Setting for duration to keep transmitting after silence [specified in multiples of 20mS]
- ✓ **Touch-tones** [DTMF]
- ✓ **Mute** Speaker/Microphone
- ✓ **Lookup Phonebook** - Dial right from your contacts.
- ✓ **Bandwidth Test** - a simple echo test to get an estimate of your bandwidth! [latency = time to hear your voice back/2; (as your voice makes a round trip)]
- ✓ Recommended Connections – **Wi-Fi, Bluetooth**
- ✓ Treo 600/650 extras - Easy five-way navigation
- ✓ non-Treo extras - No worries of network disconnection on device entering sleep mode
- ✓ Real time auto update - over the air.

## System Requirements

Devices with Palm OS 5.0 or greater with a processor of at least 200 MHz are supported.

mobiVoIP is compatible with Palm Treo™ 650, Tungsten™, LifeDrive™ and Zire™.

**Use of headset is recommended to minimize the noise.**

## Bandwidth Requirements

Bandwidth requirement depends on the Codec that you use:

**G.711:** Suitable for wideband connections with a minimum bandwidth of **160kbps**.

**GSM:** Suitable for narrowband connections with a minimum bandwidth of **60kbps**.

# Using mobiVoIP

## Installation:

mobiVoIP is available for download at <http://www.mobivoip.net>. After installation, you will see the mobiVoIP icon in your palm launcher as shown below.



Fig 1: mobiVoIP Installation

To make calls to PSTN numbers you need to sign up for a calling plan from <http://www.mobivoip.net>.

## Configuring mobiVoIP Profile:

To configure your mobiVoIP account, select Profiles from the Menu->Prefs. You will be directed to the Account Details dialog as shown in Figure 2.

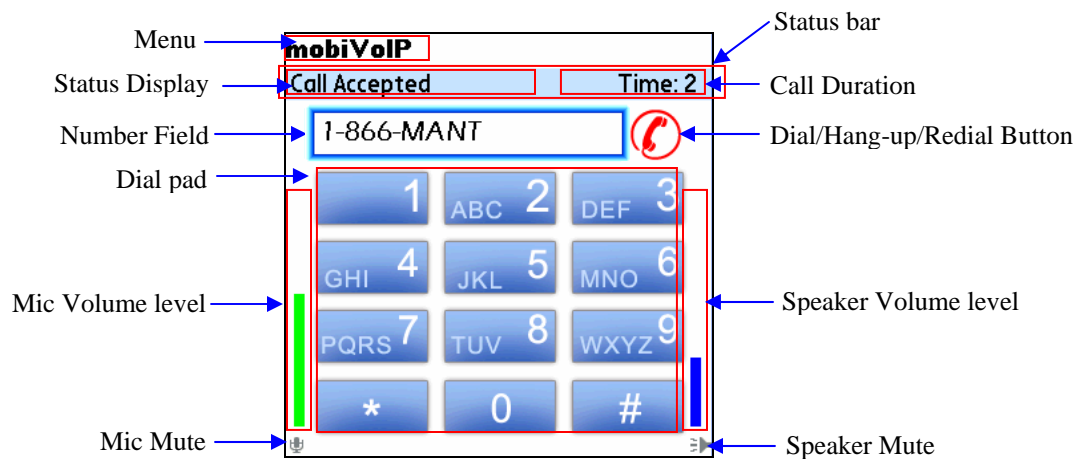


Figure 2: mobiVoIP account configuration

Enter your account number and password that you received on registration with <http://www.mobivoip.net>. Select OK to save the setting.

## Introducing the mobiVoIP application:

mobiVoIP has a simple, elegant user interface which makes it easy for you to get accustomed to. The following figure shows the key product features.



**Figure 3: mobiVoIP user interface**

The number field allows you the easy access to enter the phone number. You can use the Dial button to dial the number entered in the number field. During the call, the dial button also serves as a hang-up button. After any call, the dial button can be used to redial the pervious number.

The Dial Pad can be used to enter numbers. The left portion of the top blue bar indicates the call status and the right portion indicates the call duration. Tapping the mobiVoIP title portion displays the menu which provides options to change the application preferences. However, during an active conversation, the menu options are not accessible.

During the call, the call progress bars indicate the volume levels – the left green bar indicates the microphone volume level while the right blue bar indicates the speaker volume level. You can use the mic and speaker icons at the bottom to mute and un-mute during the call.

## Making calls using mobiVoIP:

To make calls using mobiVoIP, enter the phone number in the number field and hit the “Dial” button.

Once the user is authenticated with mobiVoIP servers, you will see the “Ready to Make calls” status message in the top status bar. This is an indication that you are ready to call PSTN or other mobiVoIP users.

The following figure 4 and 5 illustrate a simple call made using mobiVoIP.



Figure 4: Dialing a Number

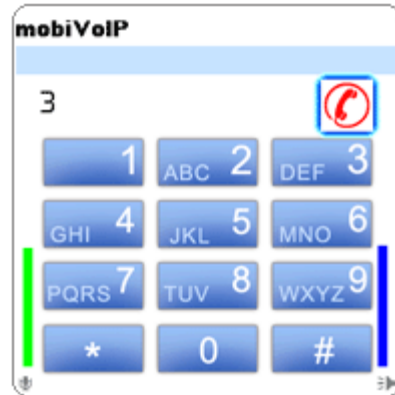


Figure 5: Call in progress

While the call is in progress, the dial button can also be used as a hang-up button to end a call. However, during the call, the menu options are not accessible.

### Menu Options:

mobiVoIP is customizable and comes with a variety of preferences that you can configure to suit your needs. The preference menu is illustrated in figure 6 below.



Figure 6: Preferences menu

The preference menu has the following options:

- **Network Settings** – to configure the IP related settings
- **Profiles** – to configure your mobiVoIP account and password
- **Codecs** – to configure codec based on your bandwidth
- **Debug** – to display settings for the top blue bar
- **Audio Configuration** – to configure the noise suppression related settings

## Network Settings:

The network settings allow you to detect the IP address of the device. This setting is important as the server will exchange data based on this information.

Simple UDP Traversal over NAT (STUN) will detect and use the external IP of the device by contacting external servers 1 and 2. mobiVoIP comes with a default STUN server configuration.

You may configure these servers manually, if the application takes more time to detect IP settings for your current location.

\*Note – the farther you are from the servers, the longer it may take to resolve the IP.

**Warning:** It is not recommended to change these settings without fully understanding the details about STUN. Please check our FAQs section to know more about the STUN servers. The section also contains a listing of the STUN servers available for use.

By default, “Resolve IP using STUN” setting is enabled. Network Settings dialog using STUN settings is shown below.



**Figure 7: Network Settings Dialog with STUN setting selected**

All the routers do not support this feature. Improper detection of settings may cause problems with calls. In such cases, the user should disable the IP resolution using STUN by un-checking the option “Resolve IP using STUN”. This will allow mobiVoIP to detect and use local IP for data communication – the IP detected is displayed as local IP. You can select “Dynamic” to allow mobiVoIP to automatically detect the IP setting for you every time.

If you feel that the detected IP is different, you can edit it by disabling the “Dynamic” option and entering the IP manually.

Figures 8 and 9 illustrate Local IP usage.



Figure 8: Dynamic IP detection

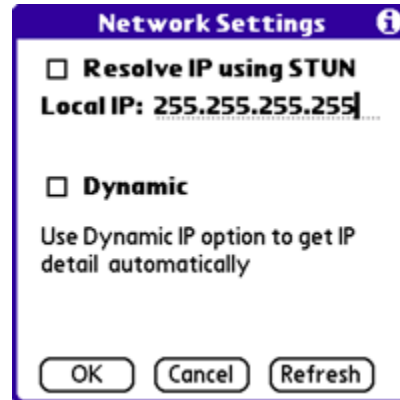


Figure 9: Manual IP entering

## Profiles:

Profiles preference is used to configure the account details. As illustrated in figure 10, user can enter the mobiVoIP account number and password in this dialog.



Figure 10: Account Details Dialog

## Codecs:

The Codec preferences are used to select codec for audio encoding. Default codec option is GSM codec. For narrowband users with at least 60kbps bandwidth, GSM codec gives business class voice quality. Wideband users with at least 160kbps bandwidth can use G.711 to get PSTN quality voice reception.

Figure 11 illustrates the “Codec Dialog” with available codecs listed in a popup.

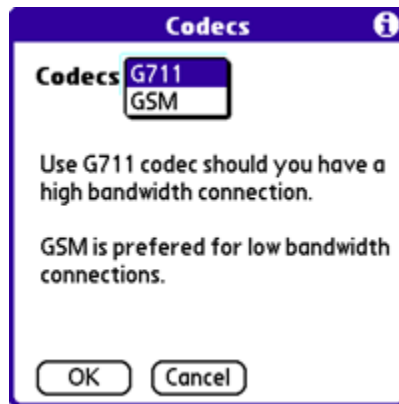


Figure 11: Codec preference dialog

### Debug:

Debug Preference will display the debug dialog allowing the user to control the display messages in the top blue status bar. The “SIP Debug messages” option will display the responses from mobiVoIP servers. The “Call Duration Timer” will display the call duration in seconds after the call is connected. Figure 13 illustrates the status displays during a call.



Figure 12: Debug Dialog

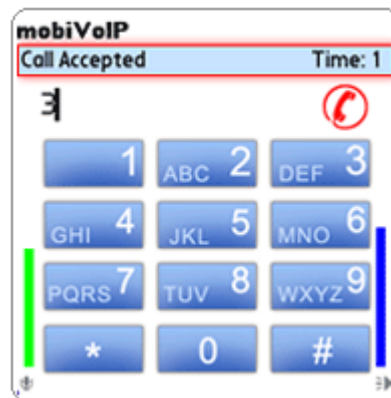


Figure 13: Status messages during call

### Audio Configuration:

Audio Configuration is a setting that allows a user to save bandwidth by utilizing noise suppression or Voice Activity Detection (VAD). With this setting enabled, mobiVoIP will send data only when there is voice activity on your end. To use this setting, you are required to calibrate mobiVoIP with the environment noise level measured in DB.

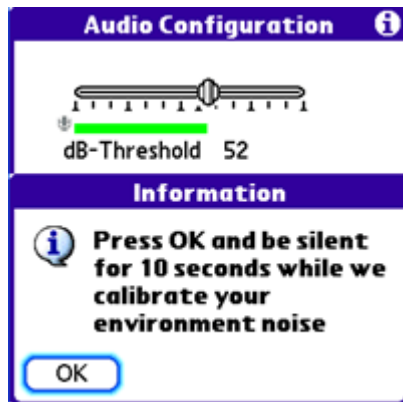
Enable “Noise Suppression” option after calibrating the threshold level to begin using this setting during a call.

The Audio configuration dialog is shown in Figure 14.

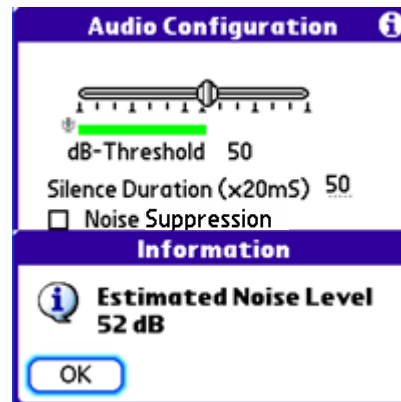


**Figure 14: Audio Configuration Dialog**

“Calibrate” button will perform a noise level calibration test. During this test, user is expected to remain silent so that mobiVoIP can determine the environment noise level and calculate the threshold value. Calibration is illustrated in Figure 15 and Figure 16.



**Figure 15: performing a calibration test.**



**16: The threshold level after test.**

User can also set the “Silence Duration” setting that mobiVoIP uses to transmit Call Control Data after detecting silence or “no active voice”. It is set in multiples of 20 milliseconds. Default value is 50x20mS indicating 1 second of silence duration.

## Receiving calls from other applications:

While the user is using other applications or if the device is in sleep mode, mobiVoIP can be set to run in background and still receive calls. The option to run in background mode is displayed when the user tries to exit mobiVoIP. The dialog is illustrated in Figure 17.

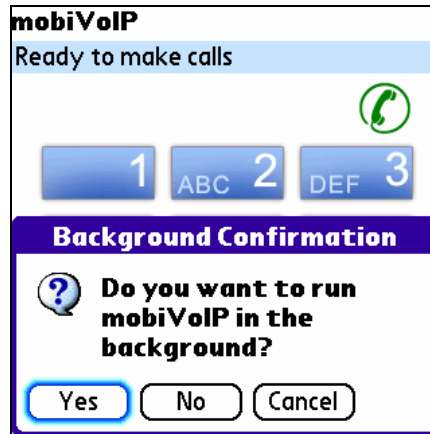


Figure 17: Background mode Confirmation dialog

If you receive a call while mobiVoIP is running in background mode, a dialog is shown to accept or ignore the call. On accepting the call, mobiVoIP will be launched to accept the call.

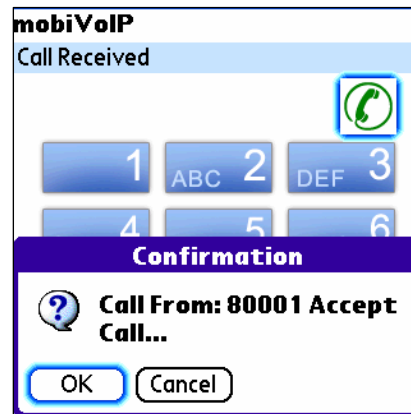
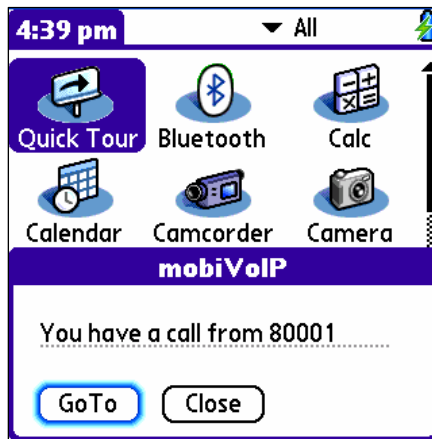


Figure 18: Call in background mode    Figure 19: mobiVoIP launched to answer

## Miscellaneous Options:

There are miscellaneous options in mobiVoIP which allow the user to select a contact from address book to call to. Country codes can be chosen to be prefixed automatically upon lookup by selecting “Add country code to lookup” option. Additionally, options to perform bandwidth test and receive OTA new version upgrade is available.

The menu list for miscellaneous options is shown below in Figure 20.



Figure 20: Options Menu

## Looking Up a number from phone book:

User can highlight a number from the Palm address book and initiate a call with a single tap. Figure 21 and Figure 22 shows lookup from a phone book.

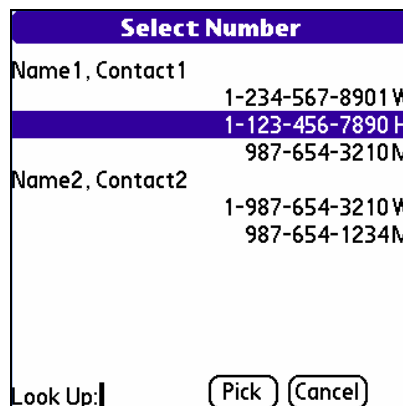


Figure 21: Lookup Phone Book.



Figure 22: Dialing the looked up number

### Prefix the lookups with Country Code:

This setting allows user to append a configured country code automatically to all phone book lookups. User can disable this option from the settings dialog. Shown below in Figure 23 is the Country code prefix setting dialog.

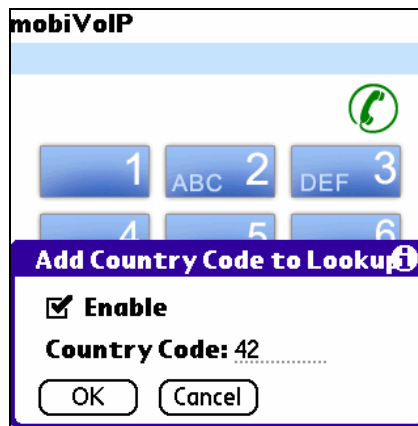


Figure 23: Country Code prefixing Settings

### Performing Bandwidth Test:

User can perform a bandwidth test by dialing 3 on the number pad or using “Perform Bandwidth test” option from the application menu. The Bandwidth test will automatically dial 3 – which is an echo test. This operation will retransmit your voice from the server which gives feedback on latency and voice quality.

Figure 24 illustrates a simple bandwidth test.

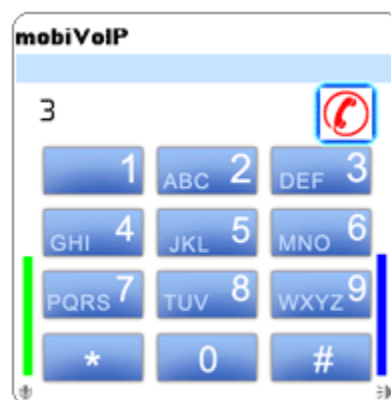


Figure 24: bandwidth test.

## Upgrading mobiVoIP using OTA upgrade:

mobiVoIP can receive upgrades via OTA (Over the Air). Select the upgrade option in the application menu to check if any new versions are available for download. If a new version is available, mobiVoIP receives the upgrade over the air and automatically installs it on your device. The following figures illustrate the steps involved in OTA upgrade.

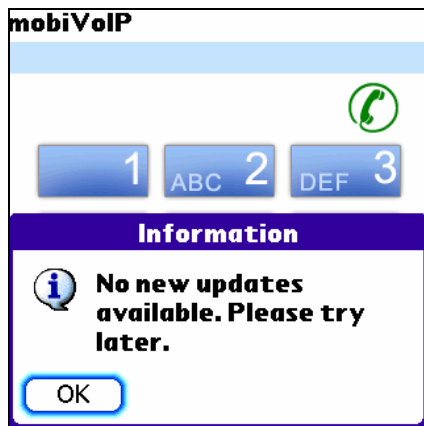


Figure 25: No upgrades available

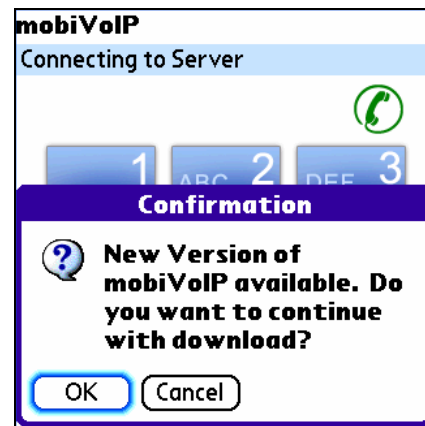


Figure 26: Upgrade available

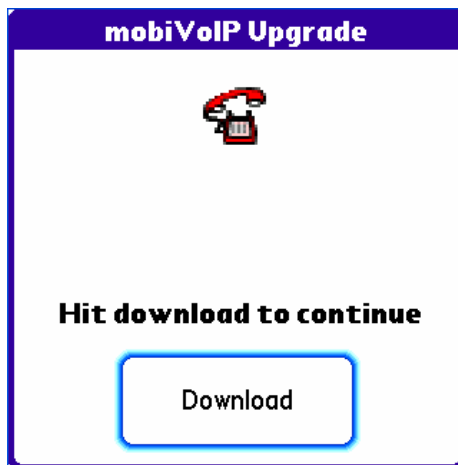


Figure 27: Upgrade Application

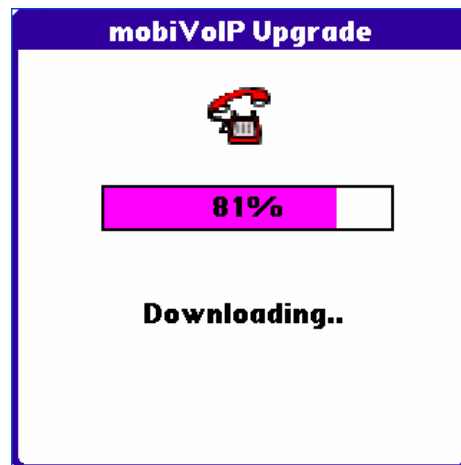


Figure 28: Downloading the new version



Figure 29: Installing the new version

### About mobiVoIP:

mobiVoIP version information can be viewed using the “About mobiVoIP” menu option. Figure 30 shows the snapshot of the dialog.



Figure 30: About mobiVoIP