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Juphoon Protocol Framework

# Juphoon SIP Phone

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For more information on Juphoon Protocol Framework, see <http://www.juphoon.com>

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## Instructions for Installing and Using of Juphoon SIP Phone Demo Client

Juphoon System Software Corporation.

<http://www.juphoon.com>

Tel: +86-574-87287820

Fax: +86-574-87304379

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## 1. Introduction

This software consists of two simple client applications, one for the use on a Windows PC and one for a Pocket PC or PocketPC PDA. These clients are simple applications with only rudimentary functionality to demonstrate the sound quality and to give an integration example of Juphoon SIP Phone technology. No call setup protocol is provided so the IP addresses of both communicating devices need to be known. For information about the technology demonstrated in this demo please refer to Juphoon's web page [www.juphoon.com](http://www.juphoon.com).

## 2. Installation

Each application consists of a simple executable program that can be placed anywhere on the device. There are no other files needed.

On the PDA, the only installation needed is to copy the PDA application (jwpe\_pda.exe) to a location where it can conveniently be retrieved.

The PC application (jwpe.exe) can be copied to any suitable location on the PC.

The PDA has to be equipped with a wireless card (IEEE 802.11) that can connect to the same network the PC is connected to with no firewall or NAT between the two devices. It could, for example, be the same wireless network or a LAN that the access point is connected to or the PC and PDA could be talking to each other via an Ad-Hoc wireless link. It is of course also possible to call between two PDAs directly (or two PCs). It is recommended to test the connection by pinging between the two devices.

## 3. Usage

### 3.1 Make a phone call

Here we'll take the PC client for example to show you how to make a phone call.

Double click jwpe\_pc.exe to start the PC client and enter the IP address of the callee you want to reach (suppose the callee's IP address is "192.168.0.100"). Then click the "Call" button. See Figure 3-1 below.



Figure 3-1 Make a phone call

The PC client begins to call the callee and displays a new interface named user which shows all the states of the call. In Figure 3-2, the call is in the alerting state meaning the callee’s phone is ringing. And when the callee answers the call, you will be able to talk with him.

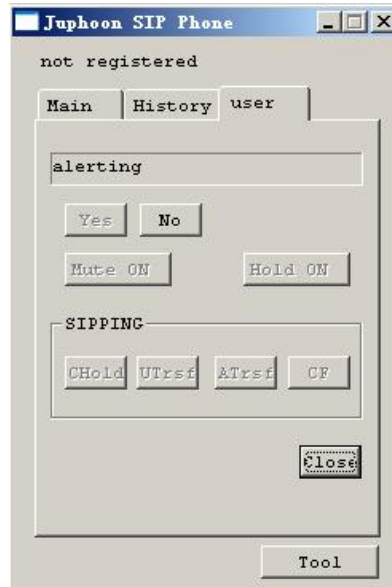


Figure 3-2 Alerting state

If you click the No button the call will be terminated whether it is answered. And if you click the Close button you will have the call terminated and the user interface closed.

### 3.2 Answer a call

If there is a call coming in, the PC client will be ringing and display a new interface showing you all the states of the call. Click the Yes button to answer the call and start talking with the callee or the No button to terminate the call. If you click the Close button you will have the call terminated and the user interface closed. See Figure 3-3.



Figure 3-3 Answer a call

As for the PDA client, you only have to use it in the same way you use the PC client. See more details in [Usage of PC Client](#).

### 3.3 Usage of PC Client

The user interface of the PC client is shown in Figure 3-1. In order to communicate with another device an IP address and a port have to be entered in the blank. The IP address and port of the device which the PC client is to communicate with should be written like this: sip:user@192.168.0.13:5060. “user” is a combination of any 1 to 32 letters or numbers. The port number can be omitted if it is 5060. For example if users enter “sip:user@192.168.0.13”, the PC client will consider the port number to be 5060 as a default.

The PC client will make the settings correct according to the specific environment where it is operating when you start it.

If you want to change these settings, just follow the steps below.

Click *Tool->Setting->General* to fill in the blanks with users’ own information. Enter the user name in the User Name field, display name in the Display Name field, log level in the Log Level field, IP address of the PC on which the PC client is operating in the IP field. An example is shown in Figure 3-2. The port number is omitted for it is 5060.



Figure 3-4 User Interface for the PC Client

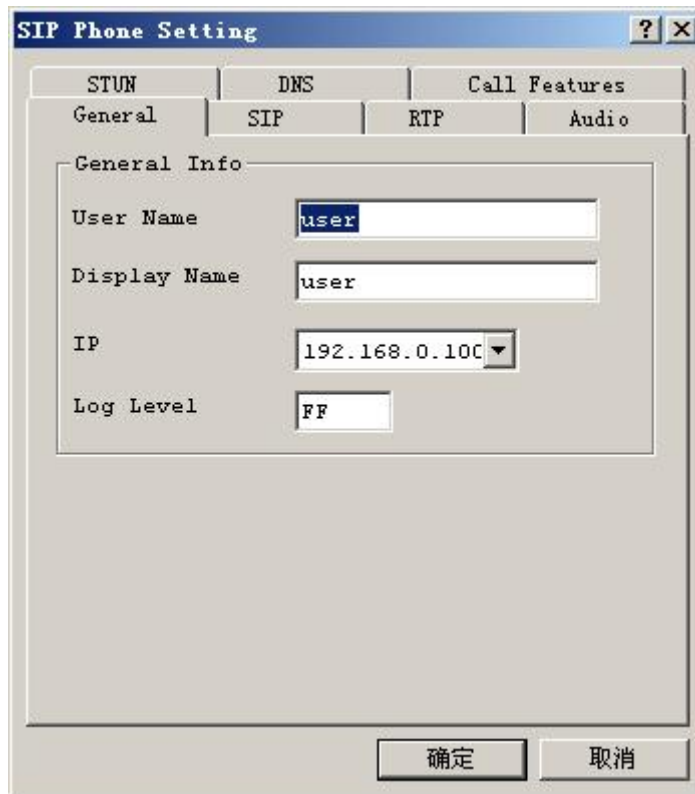


Figure 3-5 General of JUPHOON SIP PHONE SETTING of the PC Client

Click *Tool->Setting->RTP* to set the Audio ports and Video ports. Enter the maximum and minimum Audio ports, and the maximum and minimum Video ports in the corresponding blanks. See the example in Figure 3-6 below.

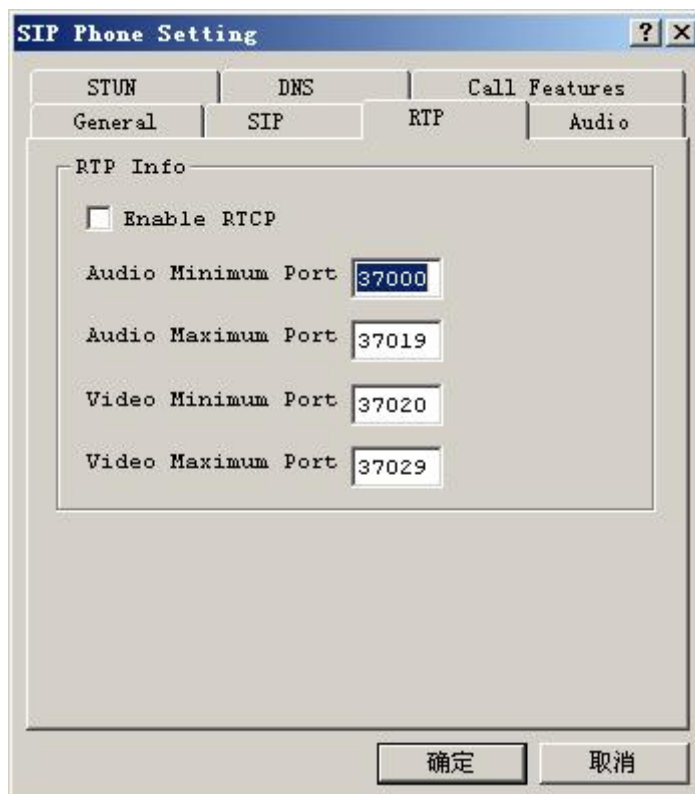


Figure 3-6 RTP of JUPHOON SIP PHONE SETTING of the PC Client

Click *Tool->Setting->STUN* to enter the PC's UDP listen port which is connected to the STUN server in the Local UDP Port field, the IP address and port of the STUN server in the Server Address field. See the example in Figure 3-7 below.

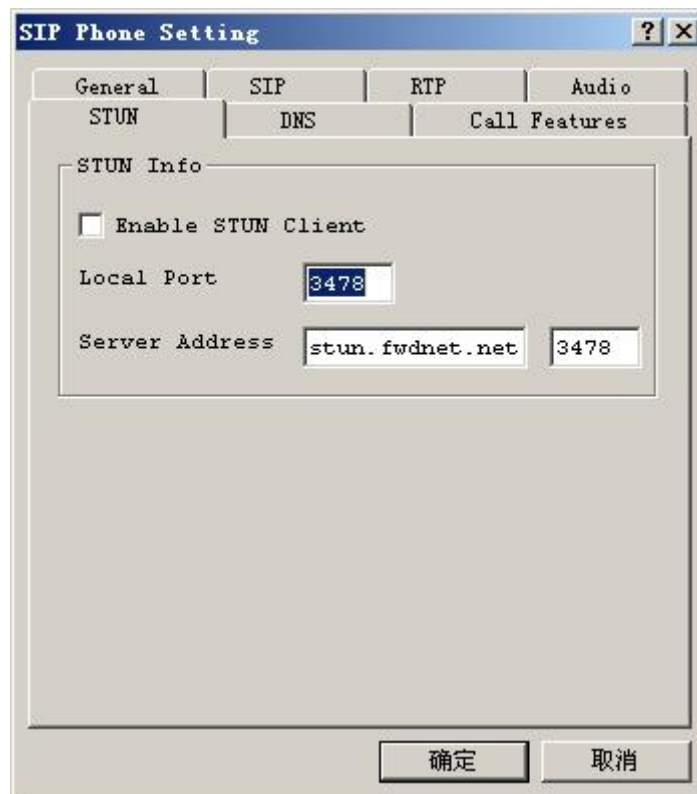


Figure 3-7 Stun of JUPHOON SIP PHONE SETTING of the PC Client

Click *Tool->Setting->DNS* to set the information about DNS. Enter UDP listen port at which the PC will listen in the Local UDP Port field, the IP address and port of the DNS server in the Server Address field. See the example in Figure 3-8 below.

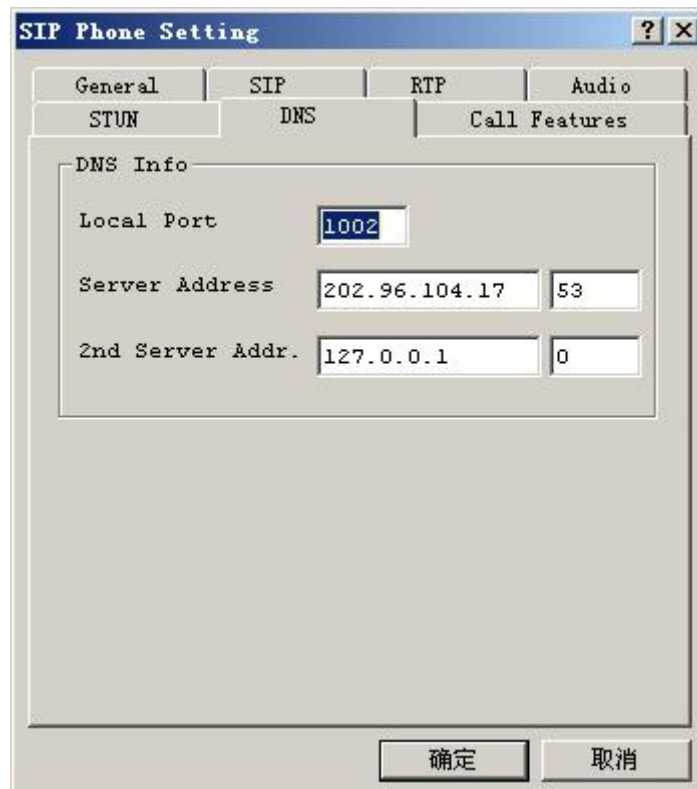




Figure 3-8 Dns of JUPHOON SIP PHONE SETTING of the PC Client

Click *Tool->Setting->Audio* to select protocol formats in which data are encoded or decoded and to choose options of Voice Process. The interface of Media is shown in Figure 3-9. In the Codec field, there is a Supported list of protocol formats which supported by the PC Client. Users can choose which are to be used by selecting them and clicking . Then the protocol formats you choose will be displayed in the list named Used. Also users can click  to remove a protocol format from the Used list. There are now three protocol formats supported by the PC client: GSM, PCMU, and PCMA.

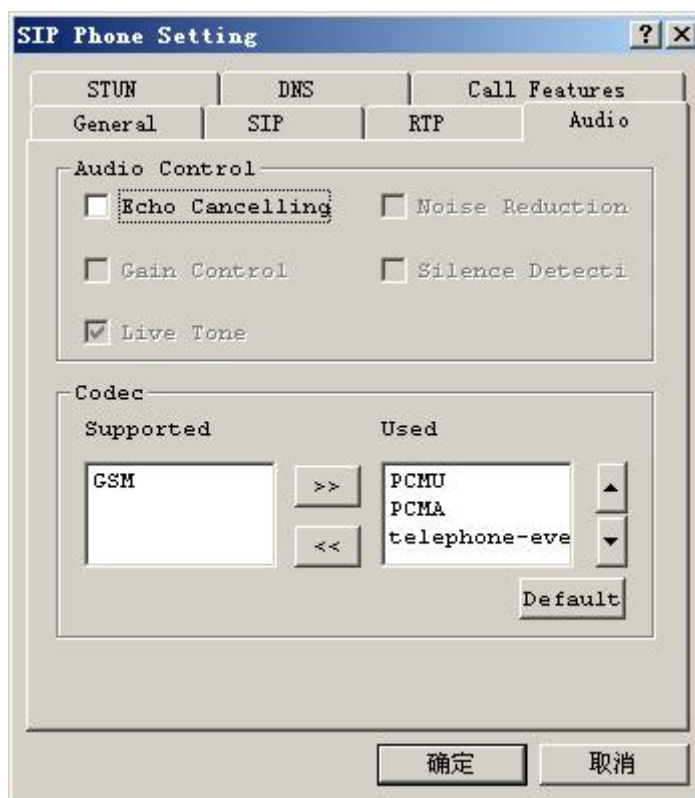


Figure 3-9 Media of JUPHOON SIP PHONE SETTING of the PC Client

The PC client is also able to communicate with a regular telephone or a device (PC or PDA) that is not connected to the same network the PC is connected to. Users have to configure SIP of JUPHOON SIP PHONE SETTING. See Figure 3-10. Enter the proxy IP and its port in the Proxy Address field. The domain name refers to the registrar on which users have registered and gained an account. So enter the IP address of the registrar in the Registrar IP field, the domain name of this registrar in the Domian field, the account number in the Account field, and the password of the account in the Password field. Don't forget to enter the UDP port and TCP port.

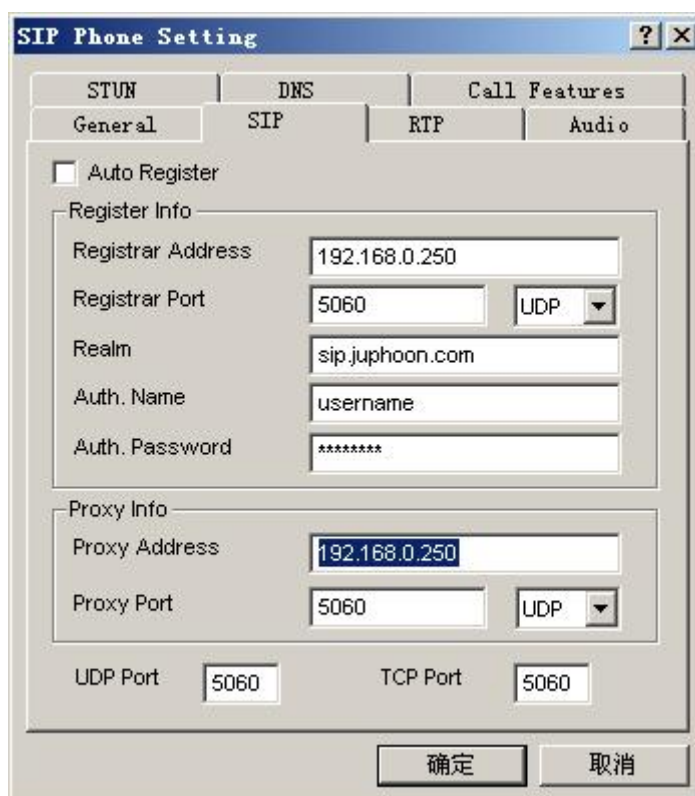


Figure 3-10 SIP of JUPHOON SIP PHONE SETTING of the PC Client

Note that if users want the PC client to communicate with a regular telephone, or make a call through a SIP proxy, select the Register option and the Stun option. Click *Tool->Setting->General* and you will see these options in the Options area (See [Figure 3-2](#)). If users want the PC client to communicate with a device (PC or PDA) using the device's IP address and the device is not connected to the same network the PC client is connected to, select the Stun option and not disable the Register option. If users just want the PC client to communicate with the device (PC or PDA) which is connected to the same network the PC is connected to, do not select the Register option and Stun option.

After all these settings were finished, you have to exit the PC client and restart it before all the settings are valid.

### 3.4 Usage of PDA Client

The user interface of the PDA client is shown in Figure 3-11. In order to communicate with another device an IP address and a port have to be entered in the blank. The IP address and port of the device which the PDA client is to communicate with should be written like this: sip:username@192.168.0.100:5060. "username" is a combination of any 1 to 32 letters or numbers. The port number can be omitted if it is 5060. For example if users enter "sip:username@192.168.0.100", the PC client will consider the port number to be 5060 as a default.

Users have to change settings of the PDA client **in the same way** they change that of the PC client before the PDA client runs correctly.

Click *Tool->Setting->Main* to set the user information. See Figure 3-12.

Click *Tool->Setting->Rtp* to set the information of RTP. See Figure 3-13.

Click *Tool->Setting->Stun* to set the information of STUN. See Figure 3-14.

Click *Tool->Setting->Dns* to set the information of DNS. See Figure 3-15.

Click Tool->Setting->Media to set the information of Media. See Figure 3-16. There are now three protocol formats supported by the PDA client: GSM, PCMU, and PCMA.



Figure 3-11 User Interface for the PDA Client

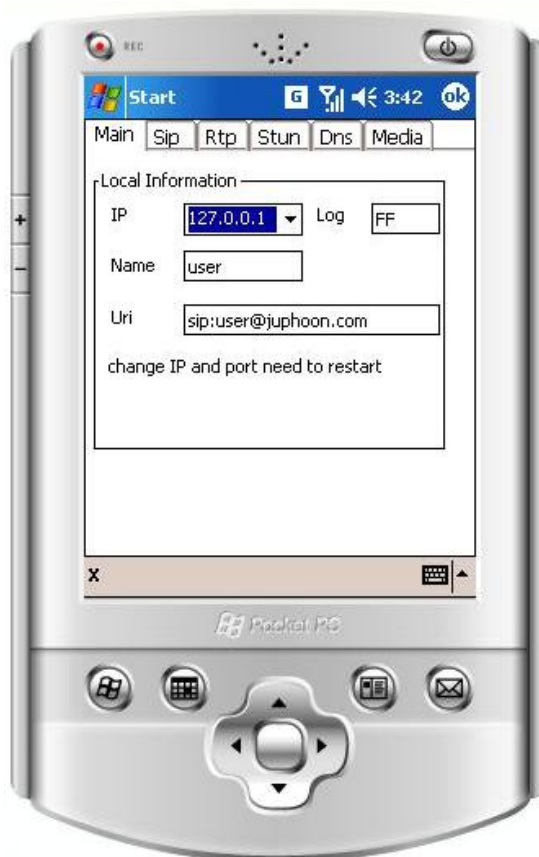


Figure 3-12 User configuration of the PDA Client



Figure 3-13 RTP configuration of the PDA Client



Figure 3-14 STUN configuration of the PDA Client



Figure 3-15 DNS configuration of the PDA Client

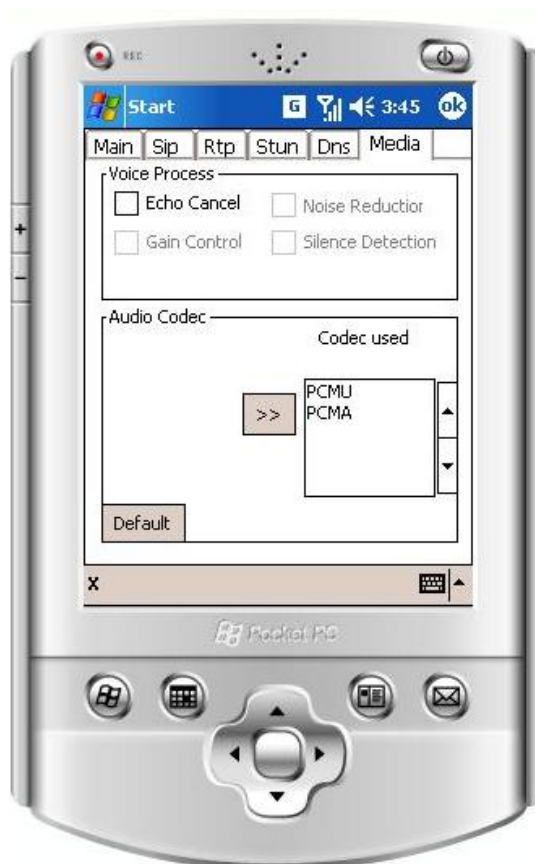


Figure 3-16 Media configuration of the PDA Client

The PDA client is also able to communicate with a regular telephone or a device (PC or PDA) that is not connected to the same network the PDA is connected to. Users have to configure SIP of JUPHOON SIP PHONE SETTING. See Figure 3-17. Enter the proxy IP in the Proxy IP field, proxy port in the Proxy Port field. The domain name refers to the website on which users have registered and gained an account. So enter the domain name of this website in the Domain Name field, the account number in the Account field, and the password of the account in the Password field. Don't forget to enter the UDP port and TCP port. Note that if users want the PDA client to communicate with a regular telephone, or make a call through a SIP proxy, select the Register option and the Stun option. If users want the PDA client to communicate with a device (PC or PDA) using the device's IP address and the device is not connected to the same network the PDA client is connected to, select the Stun option and not disable the Register option. If users just want the PDA client to communicate with the device (PC or PDA) which is connected to the same network the PDA is connected to, do not select the Register option and Stun option.

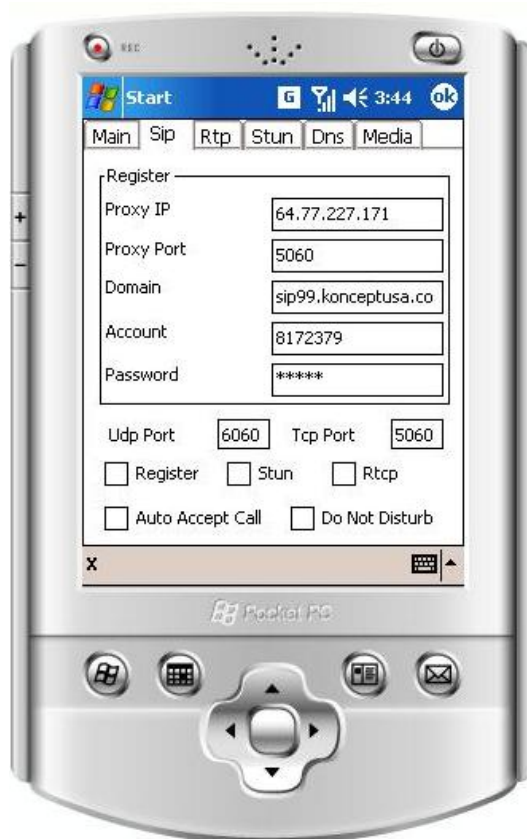


Figure 3-17 SIP configuration of the PDA Client

After all these settings were finished, you have to exit the PDA client and restart it before all the configurations are valid.