



User Manual

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Author: Jon Clark

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Introduction

This manual is designed to introduce new users of PhoneBOX Solo to some of the basic concepts and functions within the application. In many cases Solo offers multiple ways of achieving the same thing, but some options may be more appropriate in certain circumstances. This manual aims to present the most straight forward approach to all of the basic functions.

If you experience any problems with the PhoneBOX Solo software please do not hesitate to contact Broadcast Bionics (in the case of UK customers), or your local PhoneBOX representative (for installations outside the UK).

Solo Setup

The following 3 diagrams show the setup options for Solo. As can be seen, they are almost the same, the difference being the type of incoming lines that are being used, SIP, ISDN or Analogue.

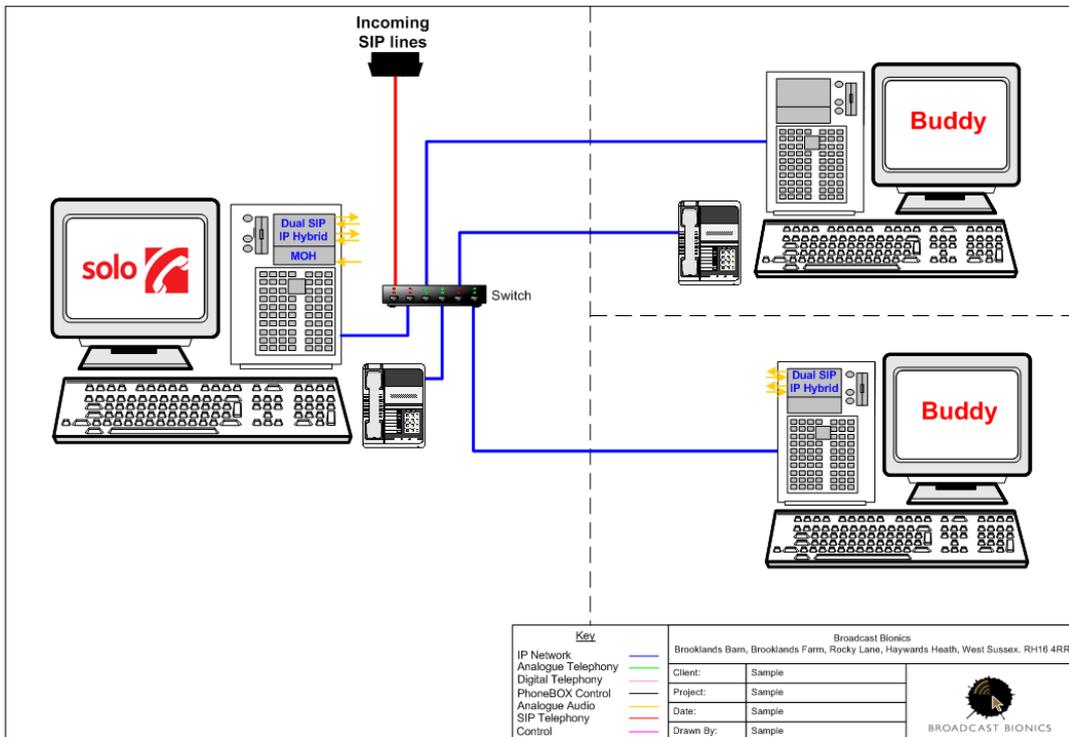


Diagram 1 – Solo using a SIP provider

As can be seen in diagram 1, incoming SIP lines from your SIP provider terminate directly in Solo. Shown here you can see the main Solo PC has a dual SIP IP Hybrid and Music on Hold. There is also the option for up to 2 buddies, both of which can have their own dual SIP hybrid (to be used as a studio machine) or not (to be used only with a handset as a call screener machine).

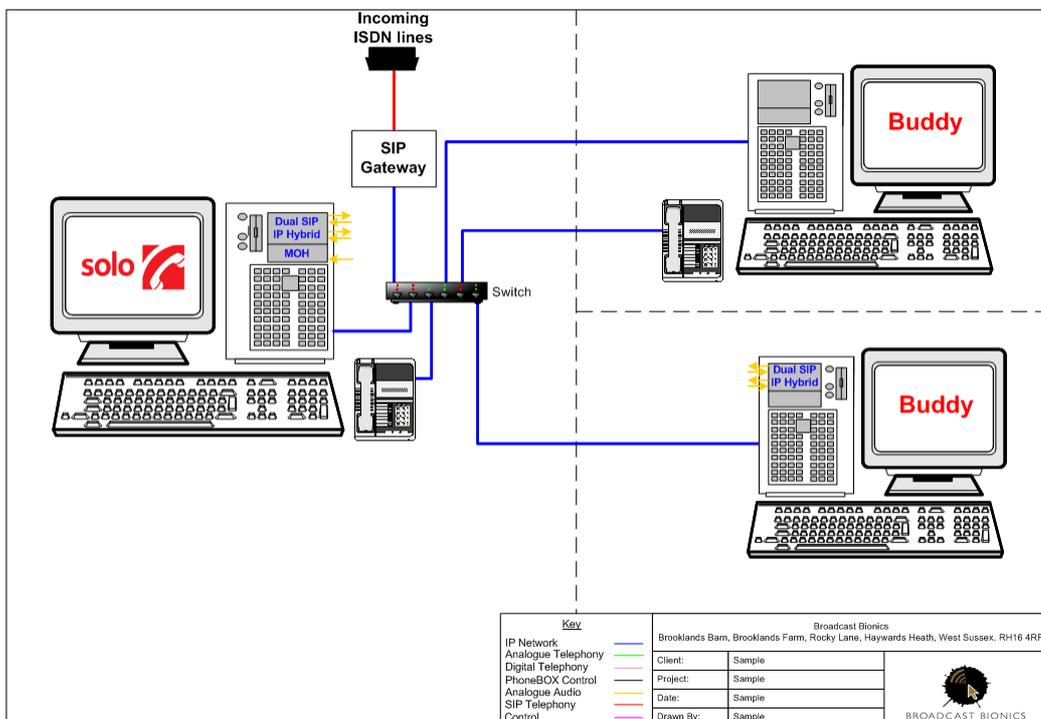


Diagram 2 – Solo using ISDN lines and a SIP gateway

As can be seen in diagram 2 incoming ISDN lines are received into your SIP Gateway, the SIP output from your gateway then terminate directly in Solo. As before, you can see the Solo PC has a dual SIP IP Hybrid and Music on Hold. There is also the option for up to 2 buddies, both of which can have their own dual SIP hybrid (to be used as a studio machine) or not (to be used only with a handset as a call screener machine).

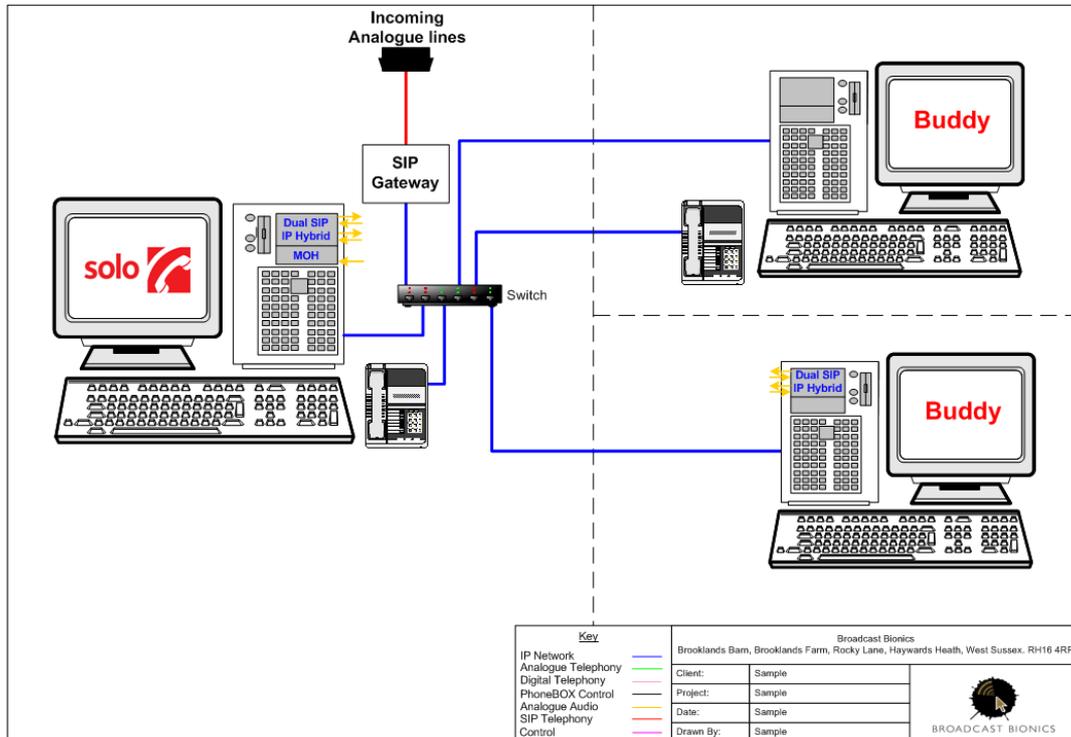


Diagram 3 – Solo using Analogue lines and a SIP gateway

As can be seen in diagram 3, incoming analogue lines are received into your SIP Gateway, the SIP output from your gateway then terminates directly in Solo. As before, you can see the Solo PC has a dual SIP IP Hybrid and Music on Hold. There is also the option for up to 2 buddies, both of which can have their own dual SIP hybrid (to be used as a studio machine) or not (to be used only with a handset as a call screener machine).

Ongoing connections to your sound desk are via the soundcard outputs from your PC.

As telephone calls are always mono, Solo treats all stereo inputs or outputs as two mono inputs or outputs. Therefore each stereo input and output on a soundcard can be used for 2 callers. For example, using a standard stereo soundcard, hybrid 1 will appear on the left stereo leg of the soundcard and Hybrid 2 will appear on the right stereo leg of the soundcard. These can then be fed independently to your mixer.

Equally the mixer will then need to produce two clean feeds (mix minus), one per hybrid – all sources except the hybrid. This should be fed back to the soundcard stereo line input (hybrid 1 on the left stereo leg and hybrid 2 on the right stereo leg). Music on hold will also need to be fed to Solo via another soundcard input. This again is a mono input (usually a secondary soundcard). This should be the programme feed from the mixer.

Soundcards

It should be noted that any soundcard intended for use with Solo must have a 'Windows Driver Model' (WDM) driver installed (also sometimes referred to as DirectSound compatible). If this is not the case, then the soundcard will appear installed in Windows, but will not appear as an available input or output for Solo.

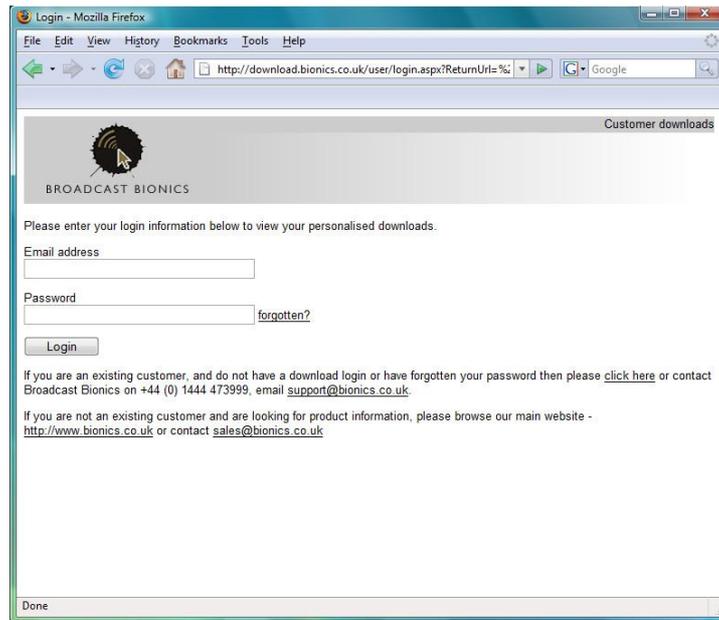
To obtain optimum performance within Solo, the soundcard should be able to operate as a 'Bus Master'.

For a list of tested soundcards please go to <http://www.bionics.co.uk/devblog/> and select the category "Solo Tips".

Downloading your software

Solo software

Once you have your hardware in place and setup correctly you are ready to download your Solo software. Once Broadcast Bionics have received your order, you will be emailed a login for our download site. Simply go to <http://download.bionics.co.uk> which will take you to the screen shown below. Log on using the details provided and you will be able to download your PhoneBOX Solo software and accompanying manual.



SQL Server

Solo requires a Microsoft SQL server (2005 or greater) to be available. If one is already installed, details informing Solo how to access it can be entered during installation. If not, Microsoft SQL Express 2005 will be installed. In this case, there is no need to change any of the default settings that will be presented during the installation process.

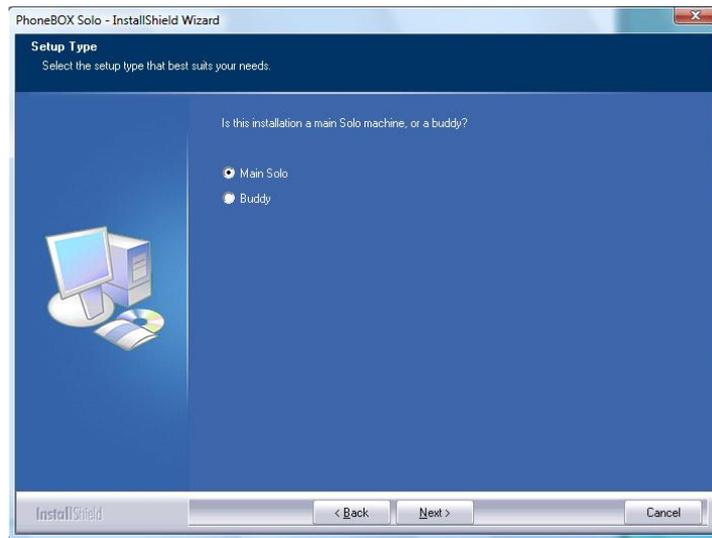
Installing Solo

If you selected to save the Solo setup file from the website, double click it to start installation. If you selected 'open/run' when downloading the file from the website you will be ready to install.

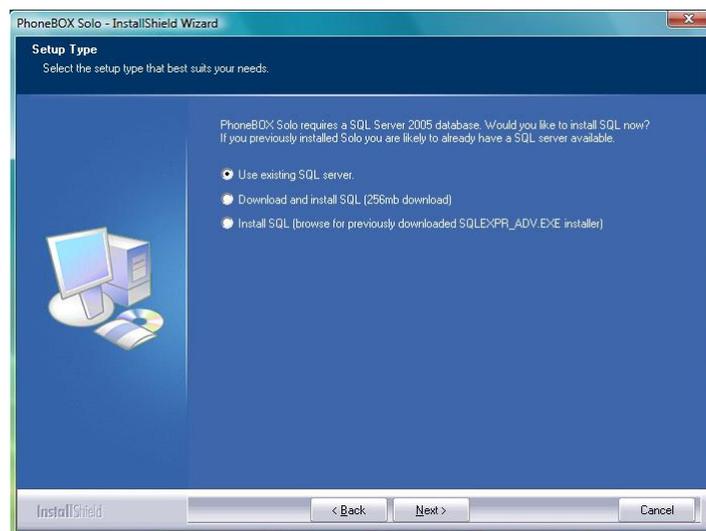
Installing a main Solo machine

Continue through the installation, answering any options as advised. In most cases there is no need to modify any settings during installation and the defaults will be the most appropriate.

Part way through installation, you will be asked if the installation is for a Main Solo machine or a Buddy. Please refer to the diagrams in the Solo Setup section of this manual if you are unsure.

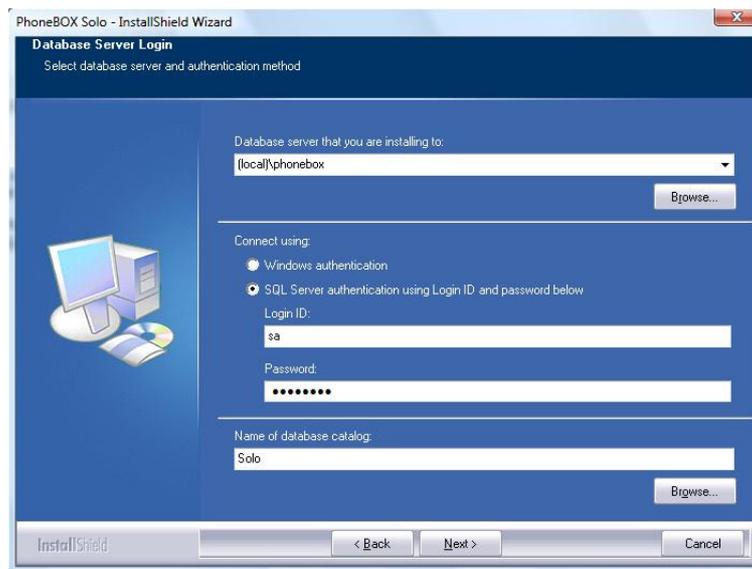


When installing the main Solo machine, you will be prompted with the following options regarding the SQL server that you intend to use with Solo.



If you are installing Solo for the first time (ie you are not merely updating an existing installation) and are unsure which option to choose, select *Download and install SQL (256mb download)*. This option uses the machine's internet connection to download and install Microsoft's SQL Express.

You will now be asked for database server login details.



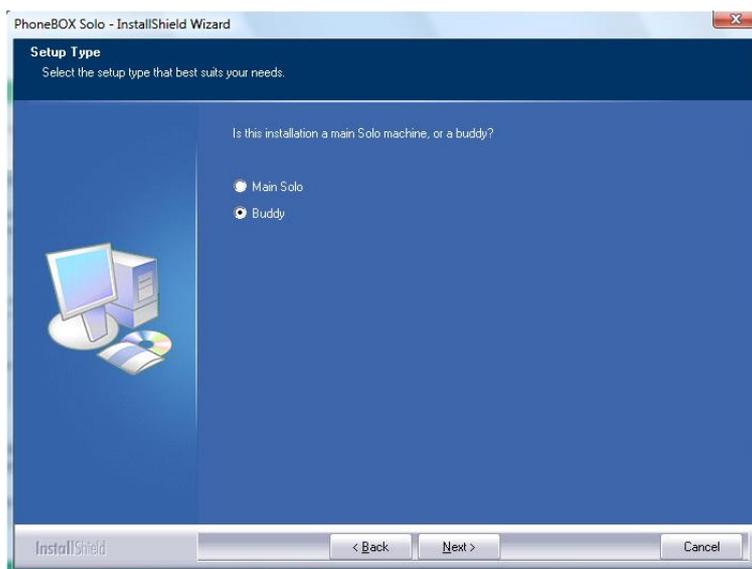
In most cases, the default values are the most appropriate, so push Next to continue. If you are using an existing SQL server, you should enter the SQL server name and authentication details as provided by your SQL server administrator. The 'database catalog' refers to the database name to use or create on the server. If the database does not already exist, ensure the user you are connecting as has sufficient permission to create a database.

Continue through the remaining menus and your Solo main machine will be installed.

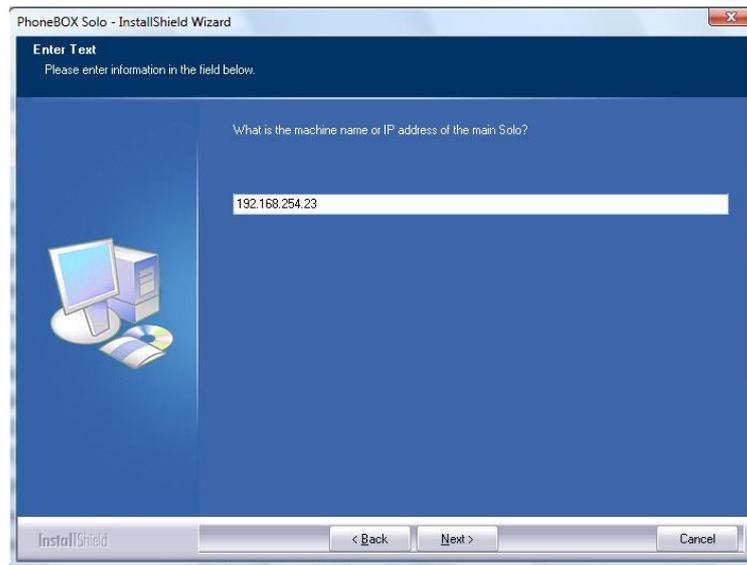
Installing a Buddy machine

Continue through the installation, answering any options as advised. In most cases there is no need to modify any settings during installation and the defaults will be the most appropriate.

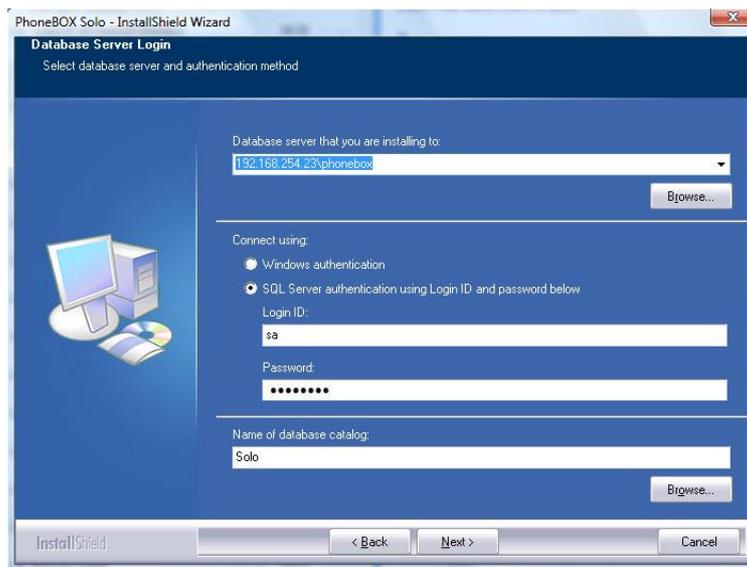
Part way through installation, you will be asked if the installation is for a main Solo machine or a Buddy. Select Buddy as shown below.



You will then be prompted to enter the IP address or machine name of your main Solo machine.



The Buddy machine shares the SQL database with main machine. The details of this are therefore required to be entered. Unless you selected settings other than the defaults for your main Solo machine, the installer should present the correct information and you can simply hit Next.



Continue through by pressing Next and the installation will be complete.

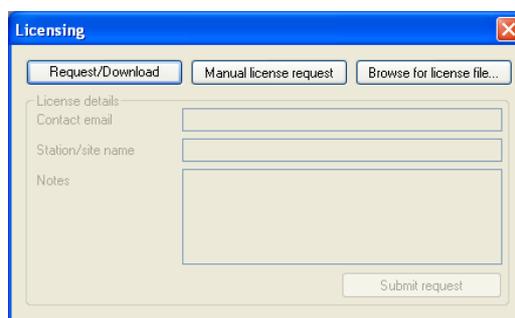
Starting Solo for the first time

Now you have installed your software, to start Solo, simply click on the start menu icon as you would to start any other application. Note that your machine must have a working internet connection in order to carry out the licensing request.

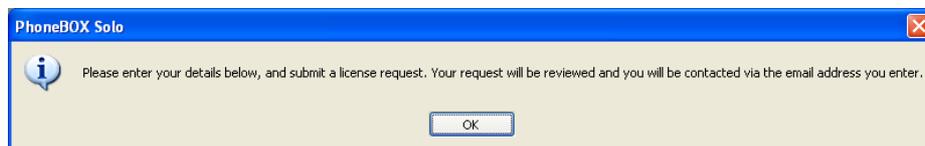
The Solo software will load and you will see the following dialogue box



Click OK to begin requesting your licence information. You will now see the *Licensing* dialogue box.



Click "Request/Download", you will see;



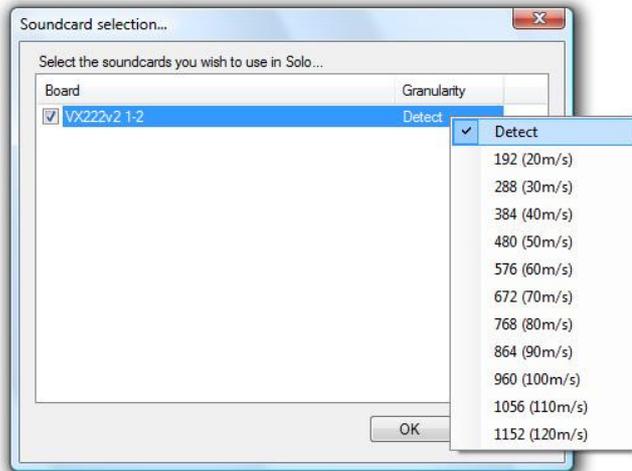
Click ok, enter your details and submit your request, this will be acknowledged with the following dialogue box, simply click OK and Solo will close down.



Following this you will receive an email from support@bionics.co.uk informing you that your licence request has been approved (this should be within 1 working day). Upon receipt of this email you will now be able to use Solo as a licensed user. Restart Solo with a working internet connection and you will see the following.



You will now be prompted to select the soundcards you wish to use within Solo. Simply tick the box of your chosen soundcard(s), then set the required granularity value from the popup menu (see below).



Granularity Explained

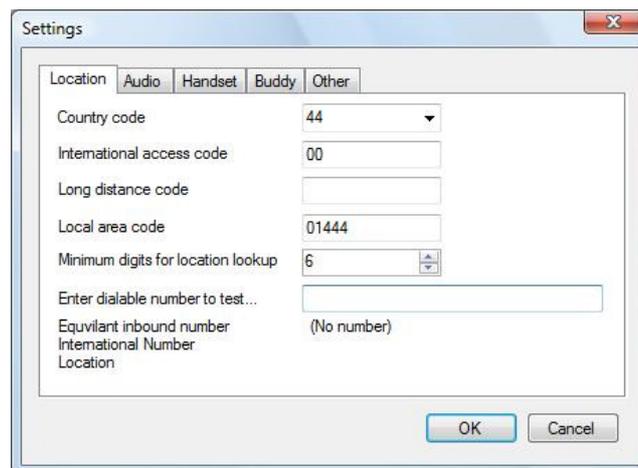
The granularity setting is used to set the size of the input and output buffers of your selected soundcard. Each model of soundcard will process audio data with varying efficiency and so it is necessary to provide a buffer to ensure that no data is lost. The larger the granularity setting, the more delay that is introduced, but if it is set too low, audio glitches will occur. The setting actually represents the number of samples in the buffer but Solo translates this into a delay figure, as shown in the brackets. The simplest way to set granularity is to use Solo's auto-detect feature by selecting the Detect option at the top of the list. This will run a test, gradually increasing the granularity setting and stopping once the audio data is being processed correctly. This test may take a couple of minutes but will only need to be done once.

Please note that some soundcards present their inputs and outputs as multiple devices and since the Detect option uses loopback, it will fail. In these cases, granularity must be set manually.

You will now be prompted to set up your General Settings. Should you need to edit these at a later date you can find them in the *Tools > Admin > General Settings* menu.

General Settings...

You will be prompted to set up your general settings using the following dialogue box. As you can see this dialogue box has multiple tabs, all of which are allow you to enter generic settings for you Solo installation.



Location

The location Tab allows you to set your Phone Number STD code settings:

Audio

The Audio tab is used to set generic Audio settings, we will set up your specific audio devices in the Audio setting dialogue (see below).

If in the USA or Japan your “default audio format” should be uLaw, elsewhere you should select aLaw.

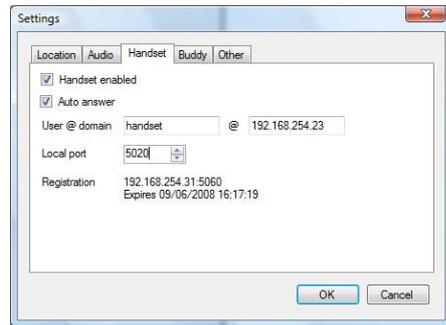
Packet size will default to 20.

Audio port range will default to 5070 to 5099 (as above)

Handset

A screener handset can be added to each Solo machine (including Buddys) and this is setup under the Handset tab. Currently, the Linksys SPA921 and SPA922 models are supported. To set up a handset (starting with the default configuration ie out of the box or reset), do the following:

- Check the *Handset enabled* and *Auto answer* checkboxes.
- In the *user @ domain* field, enter *handset* as the user and the IP address of your Solo PC as the domain (eg *handset @ 192.168.254.23*)
- Set the *local port* setting to a port that is not already in use by another application on the Solo machine. Port 5020 is recommended.



You will now need to configure the handset itself. It is first recommended that you statically set its IP address, as detailed in the user guide. Once this is done, type the IP address into a web browser on the Solo machine and you will access the handset’s built in user interface:

- If you do not see an *Ext 1* tab at the top of the menu, click *Admin Login* on the right hand side and this should then appear.
- Under the *Proxy and Registration* heading, set the proxy as the IP address of the Solo PC followed by a colon and then the port as set above (5020 recommended). eg *192.168.254.23:5020*. Then, set *Register Expires*: to 30
- Under the *Subscriber Information* heading, set the User ID: as *handset*



Once you have submitted the above changes by pressing the *Submit All Changes* button at the bottom of the page, click the *User* tab and under the *Supplementary Services* heading, set *Auto Answer Page*: to *yes* and *Preferred Audio Device*: to *speaker* (or *headset* if you intend to use a headset plugged into the SPA421’s headset port).

Buddy

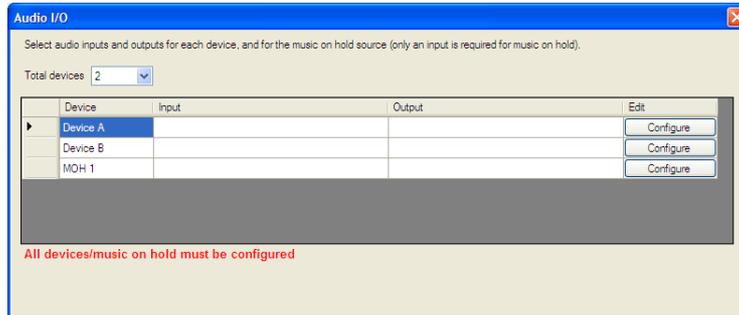
The Buddy tab allows you to enter generic settings relating to the “Buddies” installed as part of your system.

The other tab allows you to input settings relating to data groups and to switch your Solo into “demo” mode.

Once complete simply click ok.

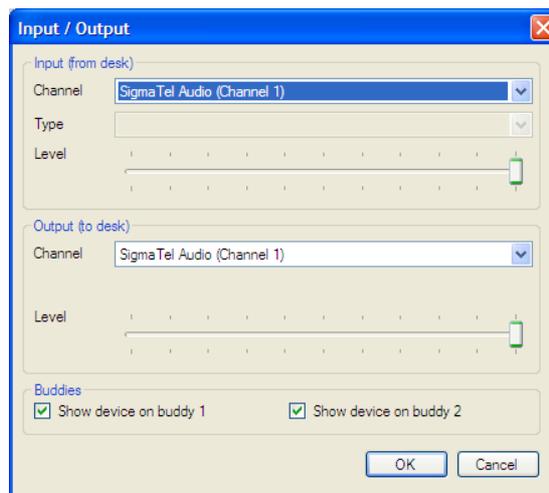
Audio Settings

You will now be prompted to set up your Audio settings. Should you need to edit these at a later date, you can find them in the *Tools > Admin > Audio Settings...* menu.



Here you can start by setting the number of devices available from the drop down menu *Total devices*.

Click *Configure* for each device and you will be presented with the following to make you selections.

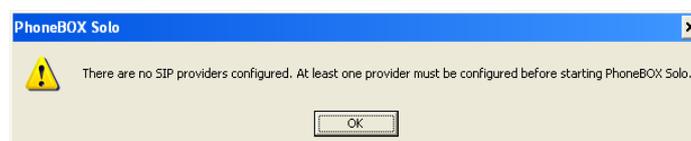


Select your input and output channel devices from the drop down boxes and click OK. Simply repeat this process for each device and for your Music on Hold (MOH). Your MOH will only require an input channel.

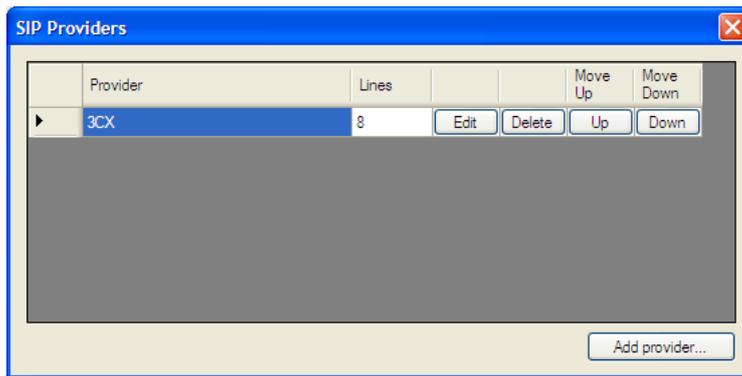
Once completed simply close the Audio I/O dialogue.

SIP Account Settings...

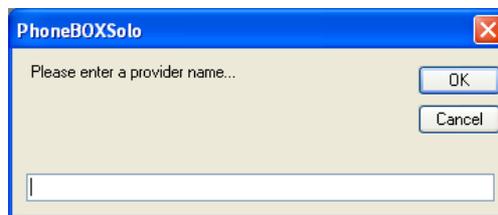
You will now be prompted to set up your SIP account settings. Should you need to edit these at a later date, you can find them in the *Tools > Admin > SIP Account Settings...* menu. The first time you run Solo, you will be presented with the following:



Click OK and proceed to setup your SIP configuration details.



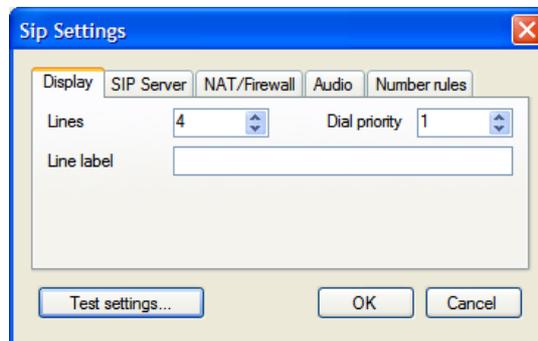
Click add provider



Enter the name of your provider or what you would like this set of lines to be called and click OK. If your provider is a recognised source, many of the configuration fields will be pre-filled.

You now need to enter your configuration for this SIP account as follows.

Display



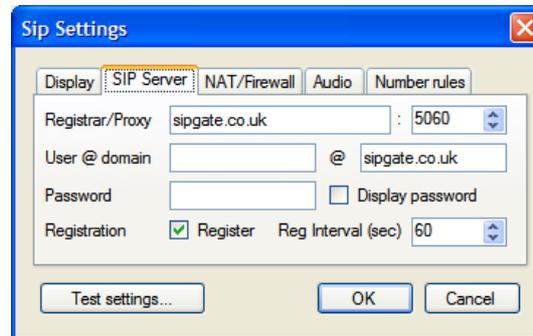
Lines - Number of lines depending on what you have bought.

Line label - This will be visible when the line is ringing (we suggest you enter your phone number here).

Dial Priority - A priority of 1 means the set of lines will be used (if available) for dialling from the directory or when pressing the dial button (i.e. any time a specific line is not selected by clicking it). Solo will then search any lines with a priority of 2 etc until it finds an available line. A priority of 0 means the lines will not be tried. Therefore if you have an ex directory line you do not wish to dial out on its Dial Priority should be set to 0.

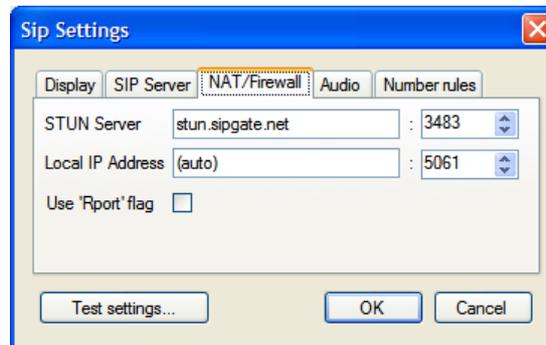
SIP Server

This information should be provided by your external SIP provider if using external SIP lines or your network administrator if using Analogue/ISDN lines and a SIP gateway.



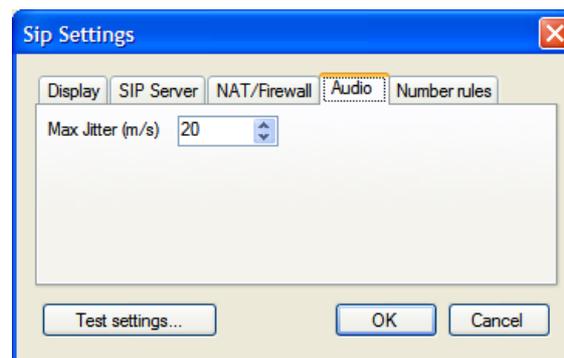
NAT/Firewall

This information should be provided by your SIP provider if required.



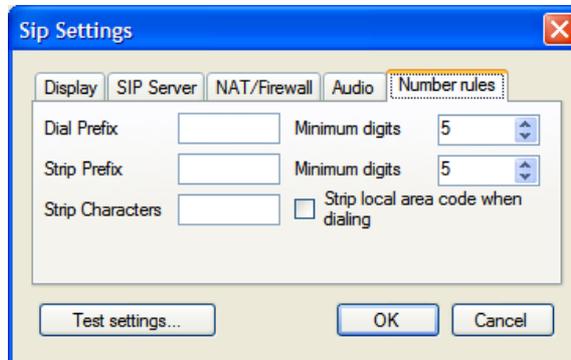
Audio

This allows you to set your maximum jitter setting.



Number Rules

This allows you to Strip number and prefix number settings added to SIP provider. It also allows numbers to be automatically prefixed or stripped from phone numbers (e.g. to add a 9 before all numbers, or remove a preceding 0 on all numbers with more than 5 digits).



Solo will now restart to register all settings.

Tools Menu

The Tools menu includes the SIP, general and audio setting setup as already mentioned above along with a number of other diagnostic features that can be helpful when requesting support.

Visblu

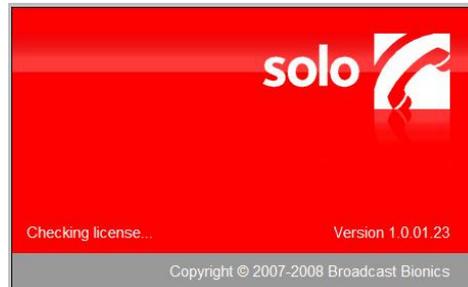
Visblu is the name of the third party audio engine that underpins Solo. In most cases, it will not be necessary to access the Visblu control panel but there may be occasions when requesting support, that it will be useful to do so.

The *Reselect Devices Available to Visblu* menu can be used to reselect the audio card used by Solo as described earlier in this manual.

Starting Solo

You are now ready to begin using Solo. Simply double click on the start menu icon as you would to start any other application.

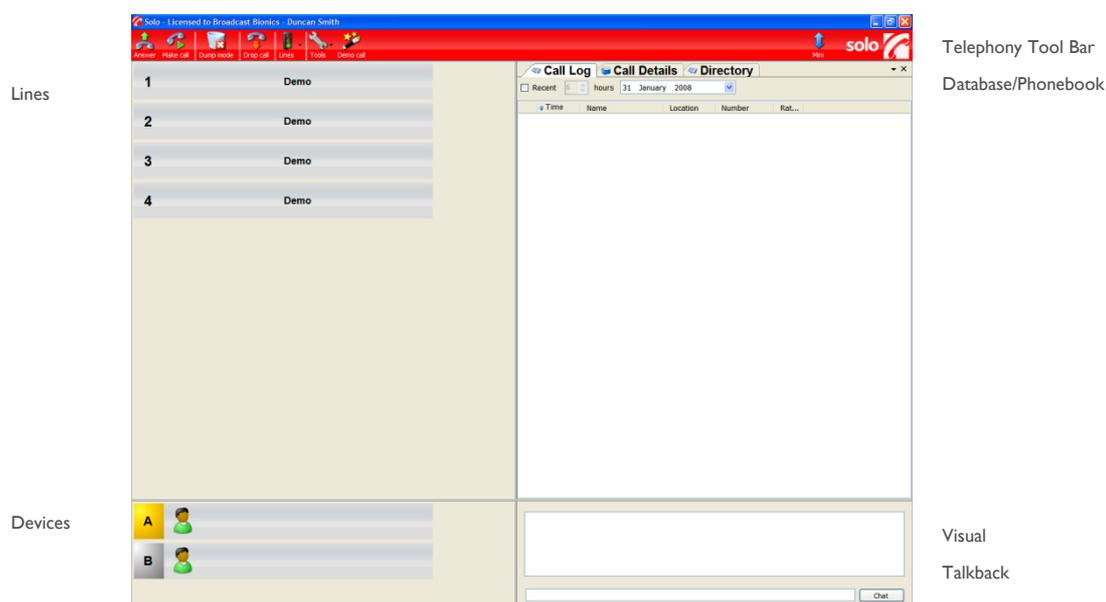
The splash screen shown below will appear as the software connects:



Once Solo has connected the splash screen will disappear.

Screen Layout

Shown below is the screen layout for Solo.



Each installation will vary slightly, depending on the number of lines displayed, and also on the number of devices shown. Additionally it is possible to undock each element of the screen (Lines, Devices, Call log, Directory, Call details & Chat) to create and save your own screen layout.

Devices

Devices in Solo include the handset (if used) and the virtual hybrids, which are each represented with a letter. It is also possible to configure Buddies such that devices from other workstations are visible.

The Active Device

The yellow block behind the device indicates that that is currently the 'active' device. In simple terms this means that any dialling or routing actions that are carried out will, until another device is made active, be actioned on the this device.

To change the Active Device

To change the active device, simply click on another device. The yellow hi-lighting block will move to the device you have just clicked on and that device will now become the Active Device.

Phonebook

Running behind Solo is a powerful SQL database. This database holds the details of all previous callers as a Phonebook (as shown in the diagram above). By selecting a single caller you can view and edit their details as appropriate.

When you receive a call, with it is delivered "Caller Line Identification" (CLI), if the caller has called before and is in your Phonebook, the CLI will be recognised and the caller's database record will be recalled from the Phonebook so you can intelligently handle the call.

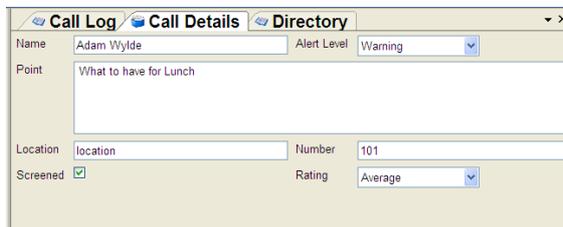
Call log

The Phonebook also allows you to see a “call log” showing Time, Name, Location, Number and rating of the caller. Additionally if the caller has any Alerts associated with them these will be visible in this view.



Call details

By selecting a call in the call log you can access the caller’s database record “call details”. This allows you to enter the callers “point”, rate the caller with a value, mark the caller as screened and associate any alerts with the caller.



Alerts

The Alerts levels are “Warning” (maybe the caller is a persistent prize winner) and “Banned” (maybe the caller uses inappropriate language on air). Alert symbols appear on both the line and in the call log for easy recognition.

-  Warning
-  Banned

Directory

The directory is a database of pre-selected callers and manually entered people you wish to make available for shows. You may choose to use this to hold details of specialists. You can dial out directly from the directory.

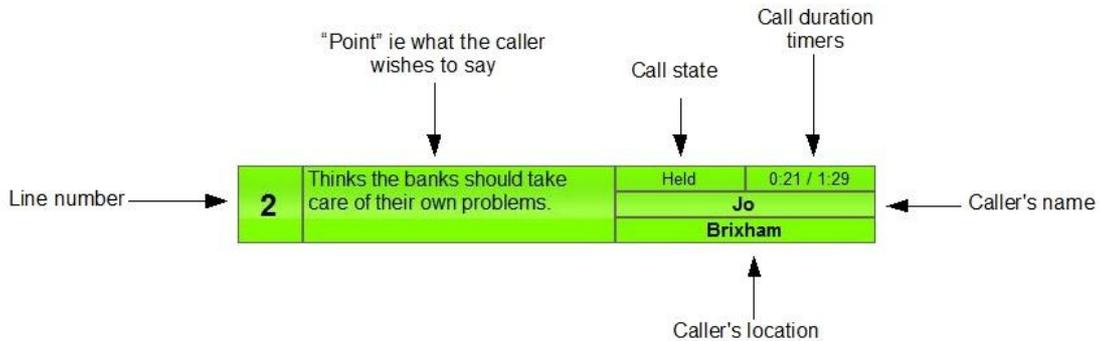


Visual Talkback/Chat

The visual Talkback function allows you to “chat” between Solo and Buddy whilst on air.

LineBox Layout

Shown below is an example of a typical LineBox on a Solo screen, an explanation of the basic elements is given below.



Call State

The Call State information tells us what state the call is currently in. In the example above, the call is 'Held'. It is not routed to a device and the caller would probably be waiting to go on air. They would probably be hearing the station output on their telephone.

Other common states are Ringing (meaning that an inbound or outbound call is yet to be answered), and Connected (meaning that the call is on a device).

Name

Solo has comprehensive databases built into the system. This means that when a call arrives in the system, if it is from a known phone number (using Caller ID) then Solo will present on screen the caller name associated with that number if one is known. If not, the system will display the phone number of the calling entity. If no CLI information is given by the caller then "Not Available" will be displayed.

In cases where the caller is not known to the Solo system a name may be entered manually.

Location

In a similar way to the Name information presentation, Solo will also display a Location for the caller if one is known. If one is not known but CLI is present, then Solo will use its look-up database of area codes and will display the nearest locality it can match to the telephone number. Again, Location information can be entered manually.

Point

The Point field is used to provide a brief description of what the caller wants to say so that producers and presenters are aware of each caller's point/opinion before they take the call.

Call Duration Timers

The call duration timers shows both the time relating to the call's current call state (Ringing, Active, held) and the total time that the call has been present in the Solo system.

Telephony Tool Bar

Shown below is the Telephony Tool Bar. Many of the functions which follow can be achieved using either the telephony tool bar icons or as described below;



Dialling a Call

To “dial a call” in Solo simply do as follows:

- Highlight the device on which you wish to dial from. The yellow block will confirm you have made it the Active Device.
- Click on an empty line
- The Dial dialogue box appears. Enter the number you wish to dial



- Click the ‘Dial’ button at the bottom of the Dial dialogue box
- Solo will make the call on the line you chose

Alternatively you can select a caller from the Phonebook and click the dial button.

Placing a Call on Hold

To take a call that is already on a device, and place that call on hold, simply click on the LineBox of the line in question. The Line Box will turn light green.

The example below shows Line 1 is ringing, Line 5 is routed to a device and Line 6 is on hold.

1		Ringing	0:01:23
		5550547	
		Portland, Oregon	
2	Phone In		
3	Phone In		
4	Phone In		
5	Thinks the answer is Chrysler Building	Active	0:09:17
		Jim	
		Jacksonville, Florida	
6		Held	0:10:03
		Janice	
		Ramsey, New Jersey	
7	Phone In		
8	Phone In		
A	Jim		
	Jacksonville, Florida		
B			

Answering a Call

A ringing call in the PhoneBOX2 system will flash yellow on screen as shown below.

1		Ringing	0:01:23
		5550547	
		Portland, Oregon	

In situations where the caller is sending CLI information, the caller's phone number be displayed as shown above. If the caller is already known to the Solo database then the caller's name will be shown in place of the phone number.

To answer a ringing call:

- Choose the device on which you wish to answer the call by clicking the appropriate device. The yellow hi-light block will move to the device you have clicked on.
- Now, click on the Line Box of the ringing line
- That call will now be routed to your chosen device and you can answer the call.

Alternatively:

- Simply click on the ringing line and it will answer on the currently active device. If you already have a caller on this device it will automatically hang up (if in "Dump Mode") or automatically park the first caller.

Terminating a Call

Should a caller hangup at the remote end then the call will automatically disappear from the Solo screen (you may experience a slight delay if using analogue lines).

If you wish to terminate a call from Solo, do the following:

- Click on the Drop Call button on the Telephony tool bar
- This will turn your mouse pointer into an icon similar to the Drop Call button itself
- Move the mouse to the LineBox of the line you wish to Drop the call from
- Click that line. The call will drop.

Dump mode

When “Dump Mode” is selected on the Telephony Tool bar Active calls will automatically be dropped when a new call is taken on the same device.

Routing a Call

Routing describes the sending of a call that is on hold, and placing it on a device.

To route a call that is holding, simply click on a device to make it active, then click the Line Box for the line you wish to route. Both the Line Box and the active device will then display the same colour, that of the active device.

Call Conferencing

Call Conferencing allows the routing of multiple calls to a single device (hybrid).. This means that multiple callers can be heard on the air at the same time, even if the studio only has a single hybrid installed.

Building a conference

Click on the Conference icon on the device (hybrid) on which you wish to build the conference



The Conference icon will change from a single caller to a group



Now, click on the first call to be added to the conference

The first call is routed automatically to the active device

Now, click on the second call to be added to the conference

Both the first and second call line boxes are now active and the device appears active with 2 active calls. You can conference up to 4 callers on a single device.

Removing call from a conference

To remove a call from the conference, while maintaining the conference, simply click on the line box of the call you wish to remove. The removed call will go back to hold mode. The hangup feature can be used to terminate individual calls that are still in the conference. Alternatively you can directly hangup the call from device by using the hangup feature and clicking on relevant portion of the device (hybrid).

To end the entire conference, click on hangup and then click on the letter of the device (hybrid), it will have a yellow background, that the conference is running on. *Note: Call quality may be adversely affected in conferences as you don't have individual control of the audio level of each caller.*

A conference with 2 callers will look as follows;



Editing function

As each call is completed and dropped a temporary recorded audio file is kept, indicated by a record icon on the device on which it was routed.



Selecting the record icon opens the record window (which follows) which gives you the opportunity to edit the call and save it to file for future use. Additionally you are able to isolate each side of the call if required. If you do not wish to save the call the next call routed to this device will overwrite this file.



Minimizing the screen

Whilst Solo is running you have the ability to minimize the screen to a docked tool bar, allowing you to use the same computer to say, browse the internet, whilst still answering and routing calls. The following image shows the docked tool bar.



Did you know?

The PhoneBOX Product Family

The PhoneBOX family of products provides software based studio call handling solutions for all sectors of the Radio & Television markets. Our suite of products, all based around the original PhoneBOX system, have varying feature sets based on the size and proposed usage of the system. We offer studio solutions ranging from cost effective hospital, community and local radio platforms right through to highly advanced networked systems for regional and national broadcasters.



Uniquely flexible, easy to use and simple to install PhoneBOX Solo is a breakthrough feature rich call routing solution. Solo uses revolutionary SIP technology to route VoIP and ISDN calls digitally to air via a standard Windows PC and soundcard.



PhoneBOX is the original call handling solution and is targeted at the medium size installation serving sites from a single studio to sites with multiple studios. With a feature set including much of that in Solo plus more, PhoneBOX is an entirely scaleable product.



Enterprise is a networked solution utilising the power of IP telephony. Enterprise allows for you to share services across your entire network of stations (IT infrastructure permitting).

Other products from Broadcast Bionics include;



A modular broadcast information management system, providing, Sales, Commercial Production, Technical Helpdesk and Project management tools.



As a company with over 15 years in the Broadcast industry, we are regularly approached to create software solutions for many of our clients.

Broadcast Bionics also distributes in the United Kingdom;

Genesys – An audio Playout system

Newsroom – from KLZ

Axia Audio consoles