

*Ready,  
get set*

*Vox!*

## *System Manual*

*Vox PBX*

*Series 3*

*Series 3 Advanced*

*Document Issue: 1.0*



*Be heard*





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# 1

## Introduction

Welcome to your Vox PBX office communications system.

You will now be able to share your phone connection between fixed & cordless handsets, benefit from the latest Voice Over Internet (VoIP) technology and access the Internet using your high-speed DSL broadband connection.

This User Manual will show you how to connect your Vox PBX and how to customise the configuration to get the most out of your product.

### Conformance

**This equipment is designed for use in the Republic of South Africa**

This equipment complies with the following standards:

TBR 10  
EN 60950  
EN 300 175, Parts 1 to 9  
EN 300 328, Parts 1 & 2  
EN 300 444 (TBR22)  
EN 301 406 (TBR6)  
EN 301 489, Parts 1, 6 & 17  
ICASA -SWS-001

Analogue Station ports:	TNV3
PSTN port:	TNV3
ADSL port:	TNV3
Power fail port	TNV3
LAN/WAN ports	SELV
Door strike Port	SELV

A Certificate of Conformity is available on request.

### **Important Safety Instructions**

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When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons:

- Phone electrical safety:
- Use only approved accessories.
- Do not connect with incompatible products or accessories.
- Take care not to touch or allow metal objects, such as coins or key rings, to contact or short-circuit the battery terminals.
- Do not attempt to disassemble a phone.
- Only qualified personnel must service or repair a phone.
- If a phone has been submerged in water, punctured, or subjected to a severe fall, do not use it until you have had it checked by a qualified service person.

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## Important Information on RF Exposure

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### General Statement on RF energy

- Your system unit and cordless phones contain a transmitter and a receiver. When they are ON, they receive and transmit RF energy.

### Specific Absorption Rate (SAR)

- Your cordless phone is a radio transmitter and receiver. It is designed not to exceed the limits for exposure to radio waves recommended by international guidelines. These guidelines were developed by the independent scientific organisation ICNIRP and include safety margins designed to assure the protection of all persons, regardless of age and health.
- The guidelines use a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit for mobile devices is 2 W/kg and the highest SAR value for your system when tested was 0.2 W/kg. The tests are carried out in accordance with IEC standard PT62209-1.

### Limiting exposure to radio frequency (RF) fields

- For individuals concerned about limiting their exposure to RF fields, the World Health Organisation (WHO) provides the following advice:
- Precautionary measures: Present scientific information does not indicate the need for any special precautions for the use of mobile phones. If individuals are concerned, they might choose to limit their own or their children's RF exposure by limiting the length of calls, or using 'hands-free' devices to keep mobile phones away from the head and body.
- Further information on this subject can be obtained from the WHO home page <http://www.who.int/peh-emf> WHO, Fact sheet 193: June 2000.

### Regulatory information

- The wireless device is approved to be used in the Republic of South Africa. Vox declares that the wireless device is in compliance with the essential requirements and other relevant provisions of the Radio and Telecommunications Terminal Equipment Directive 1999/5/EC (R&TTE Directive).

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## Distraction

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### Operating machinery

Full attention must be given to operating the machinery in order to reduce the risk of an accident.

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## Product Handling

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### General Statement on handling and use

- You alone are responsible for how you use your phone and any consequences of its use.
- You must always switch off your phone wherever the use of a phone is prohibited. Use of your phone is subject to safety measures designed to protect users and their environment.
- Always treat your phone and its accessories with care and keep it in a clean and dust-free place.
- Do not expose your phone or its accessories to open flames or lit tobacco products.
- Do not expose your phone or its accessories to liquid, moisture or high humidity.
- Do not drop, throw or try to bend your phone or its accessories.
- Do not use harsh chemicals, cleaning solvents, or aerosols to clean the device or its accessories.
- Do not paint your phone or its accessories.
- Do not attempt to disassemble your phone or its accessories, only authorised personnel must do so.
- Do not expose your phone or its accessories to extreme temperatures, minimum –5 and maximum +40 degrees Celsius.
- Please check local regulations for disposal of electronic products.
- Do not carry your phone in your back pocket as it could break when you sit down.

### **Demagnetisation**

To avoid the risk of demagnetisation, do not allow electronic devices or magnetic media close to your phone for a long time.

## **Save These Instructions**

## Features

The list below contains the main features of the Vox PBX and may be useful to those users who possess a knowledge of networking protocols.

If you are not an experienced user, the chapters throughout this guide will provide you with the information required to get the most out of your Vox PBX.

### **Vox PBX features include:**

- Support for 2 external Analogue line & 4 VoIP channels
- Connection of up to 4 wired phone sets
- DECT base station supporting 4 Vox PBX DECT Stations
- Advanced phone system features
- Internal DSL modem for high-speed Internet access
- 10/100Base-T Ethernet router to provide Internet connectivity to all computers on your LAN (Local Area Network)
- Wireless access via wireless network card and wireless security features
- Network address translation (NAT) functions to provide security for your LAN
- Network configuration through DHCP Server and DHCP Client
- Services including IP route and DNS configuration, RIP, and IP and DSL performance monitoring
- User-friendly configuration program accessed via a web browser

### **Basic Requirements**

In order to benefit from all the features of your Vox PBX system, you will need the following:

- Vox DSL service up and running on your telephone line.
- One or more computers each containing an Ethernet card (10Base-T/100Base-T network interface card (NIC)).
- For system configuration using the supplied web-based program: a web browser such as Internet Explorer v4 or later, or Netscape v4 or later. Note that version 4 of each browser is the minimum version requirement – for optimum display quality, use Internet Explorer v5, or Netscape v6.1.



Note

You do not need to use a hub or switch in order to connect more than one PC to your Vox PBX. Instead, you can connect up to four PCs directly to your Vox PBX using the ports labeled on the rear panel.

## Using this Document

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### Notational conventions

Acronyms are defined the first time they appear in the text and also in the glossary.

The term "LAN" refers to a group of Ethernet-connected computers at one site.

The term "WLAN" refers to a group of Wireless-connected computers at one site.

### Typographical conventions

*Italic* text is used for items you select from menus and drop-down list and the names of displayed web pages.

**Bold** text is used for text strings that you type when prompted by the program, and to emphasise important points.

### Special messages

The following icons are used to draw your attention to specific instructions or explanations.



*Provides clarifying or non-essential information on the current topic.*



*Explains terms or acronyms that may be unfamiliar to many readers. These terms are also included in the Glossary.*



*Provides messages of high importance, including messages relating to personal safety or system integrity.*

## 2 Getting to know your Vox PBX

### Parts Check

In addition to this document on CD, your package should arrive containing the following:



1 Power Supply Vox PBX (PSU)



1 Documentation Pack



1 Blue (Ethernet WAN) cable RJ-45



1 Vox PBX DECT & charger



1 Yellow (Ethernet LAN) cable RJ-45



1 Grey line cable (RJ-11 to RJ11)



1 Main distributor frame cover (MDF) Optional



1 Violet ADSL cable (RJ-11 to RJ-11)



1 ADSL Splitter



## Front Panel

The Vox PBX front panel contains a 'Page' button and coloured indicators that show the status of your Vox PBX. Pressing the 'Page' button rings all the Vox PBX DECT handsets registered.



Label	Colour	Function
Power	Off	Power not connected to the Vox PBX
	Red	Powering up or Vox PBX malfunction
	Flashing Red/Green	DECT registration mode
	Green	Power ON
Ethernet	Off	No device connected to the LAN.
	Solid Green	Powered device connected to the LAN
DSL	Green Flashing slowly	DSL Line not connected or not synchronised
	Green fast flashing	DSL line connected and synchronising
	Green. (Occasional flicker)	DSL line connected and synchronised
Internet	Off	DSL line not connected
	Red	Vox PBX attempted to make an IP connection and failed. Usually indicates that the Internet User Name or password is incorrect.
	Solid Green	Vox PBX is connected and no traffic is detected
	Flashing Green	Vox PBX is connected and traffic is detected
Wireless	Off	Wireless LAN is disabled
	Solid Green	Wireless LAN Enabled
	Flashing Green	Wireless LAN is active with traffic in either direction

## 3 Connecting your Vox PBX

These instructions are a guide to the installation and basic configuration of your Vox PBX.

### **Locating the system unit for satisfactory wireless coverage**

The Vox PBX is equipped with one transmitter for the Vox PBX DECT cordless handsets and one for a wireless LAN that allows PCs to communicate over a wireless connection.

The operating range of the cordless phones and wireless LAN is affected by the positioning of your Vox PBX, the number of solid walls between the system unit and the cordless phones or wireless PCs and / or other interfering signals in the environment.

For best results locate the Vox PBX on the ground floor with the front of the system unit facing towards the desired working area.

The range of the wireless LAN is shorter than the cordless phones so the areas where wireless PCs are used will, in most cases, determine the optimum location for the system unit.

### **Vox PBX DECT handset range**

The Vox PBX DECT handsets have a range of approximately 300m outdoors when there is a clear line of sight between the Vox PBX and the handset. When there is no clear line of sight between the handset and the Vox PBX, as is typically the case in most installations, the range will be reduced.

### **Wireless LAN Range**

The wireless LAN data throughput speed drops when the wireless device is moved away from the Vox PBX. If there is a clear line of sight between the Vox PBX and the wireless device it can operate at reduced speeds at up to 200m, however range is reduced if there is no clear line of sight between the Vox PBX and the wireless device.

### Step 1. Connect the wired telephones to the Vox PBX

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1. If your Vox PBX is supplied with an Operator Console plug this into the socket labelled 'Extn. 20' these connections are found on the back of the Vox PBX. If you do not have an Operator Console, plug your standard phone into the 'Extn. 20' socket

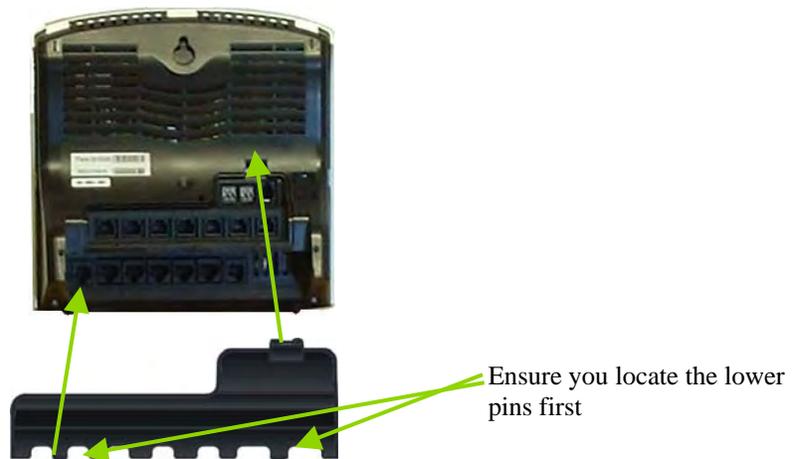


2. If you are installing additional wired telephones connect them to the 'Extn. 21 – Extn. 23' sockets.

#### Plug in your telephone line(s)

1. Plug the grey phone line cable into to the Line 1 socket at the back of the Vox PBX. The other end of the grey cord is plugged in to the phone socket on the wall or the ADSL filter.
2. If you have a second telephone line enabled plug the remaining grey line cable into the Line 2 socket.

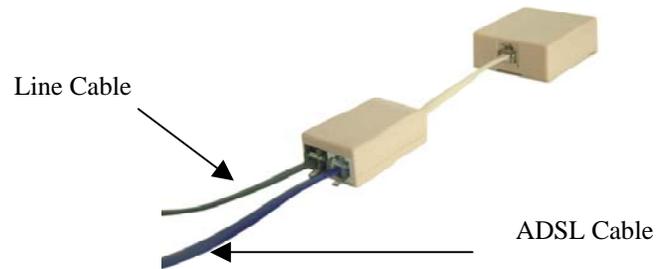
#### Fit the cable cover over the phone connections.



## Step 2: Internet access connections

### Connecting a DSL line

1. Plug one end of the violet ADSL cable into the ADSL socket on the splitter.
2. Plug the ADSL filter into the telephone socket on the wall.



3. Plug the other end of the violet DSL cable into the socket labelled 'DSL' at the back of the Vox PBX.



## Step 3: Connect the Power

1. Connect the AC power adapter to the Vox PBX; connect the adapter to the power point.
2. Turn on the AC power.



**Note**

The power cable is designed so that it will only fit into one socket on the back of the system unit. Do not force the plug into the socket.

It takes approximately 1 minute for the Vox PBX to initialise. Wait until the power LED on the front of the Vox PBX unit is a steady green light.

***You can make telephone calls now***



If you have one analogue line only you need to change the system programming so that the unequipped line position is not used. If this is not done, every second time you dial 0 for a line the call will fail. Please see below for instructions

Programming instructions for Vox PBX with one Analogue line.

From the programming station (by default, it is station 20), press the  **PROGRAM** button, located on the top right-hand side of the display of the Operator Console.

Press the Scroll Down Key () until 'System programming' is displayed. Select 'System programming'.

Enter the System Programming Password and select 'Lines'.

Press the Scroll Down Key () until 'Equipped lines' is displayed.

Select 'Line 2'. The symbol beside line 2 changes from '◆' to '◇' indicating the line is not equipped.



If you do not have a Operator Console see the 'PABX Configuration using the web interface' section in the Owner's manual for instructions on programming the number of equipped lines – see [Line settings - equipped Lines](#)

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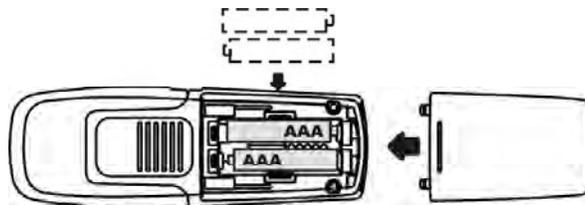
#### Step 4 Vox PBX DECT Phones

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Assemble your DECT Phone

Place the 2 rechargeable NiMH batteries size AAA 1.2V 750mAh (included), observing their polarities, into the battery compartment of the handset.

Slide the battery door firmly into place.



Place the handset on the charger unit and let the batteries charge for a full 14 hours before using it for the first time. The handset may get warm during initial charge.

Register the Vox PBX DECT phones.

Press the 'Page' button for **4 seconds**. This button is located on the front of the Vox PBX. This places the Vox PBX in registration mode for 30 seconds.



You will know that the Vox PBX is in registration mode when the power led flashes red and green

On the DECT handset, press 'REG' on the DECT phone

Press 'OK' for 'REGISTER'  
Enter the PIN number of 1234  
Press 'OK'  
The DECT handset is now registered to the Vox PBX

**Note**

Pressing the 'Page' button normally (for less than 2 seconds) rings all DECT phones registered to the Vox PBX. This can be used to locate misplaced DECT phones.

**Safety precautions Vox PBX DECT Handsets:**

- Do not allow the DECT handset to be exposed to liquids or moisture.
- Do not allow the charging contacts or the battery to be exposed to conductive materials.
- Do not use the handset in an explosive hazard area such as where there is gas leaking.
- The DECT handset works by sending radio signals between the base unit and the handset, wearers of hearing aids may experience interference in the form of a humming noise.
- We advise that persons should not use near intensive care medical equipment or the DECT handsets with pacemakers.
- Your DECT handset can interfere with electrical equipment such as answering machines, TV and radio sets, clock radios and computers if placed too close. It is recommended that you position the Vox PBX at least one meter from such appliance

**WARNING**

*Use only the mains adapter supplied with the DECT handset. Incorrect adapter polarity or voltage can seriously damage the DECT Handset. Input: 230 VAC 50 Hz Output: 9 VDC 300 mA.*

**WARNING**

*THERE IS A RISK OF EXPLOSION IF THE BATTERY IS REPLACED BY AN INCORRECT TYPE. Never use non-rechargeable batteries. Use two rechargeable NiMH batteries, size AAA 1.2V 750mAh (HR10/44) only. NiMH batteries must be disposed of in accordance with the applicable waste disposal regulations.*

Step 5: Connecting PC(s) and configuring the Vox PBX for web browsing



1. Connect one end of the yellow LAN cable to the LAN port on your PC
2. Connect the other end of the yellow LAN cable to one of the LAN ports on the Vox PBX. These ports are marked in yellow.



3. Open a Web Browser such as Internet Explorer or similar on the PC.



Address <http://192.168.1.1/>  
Enter in the address bar :<http://192.168.1.1>

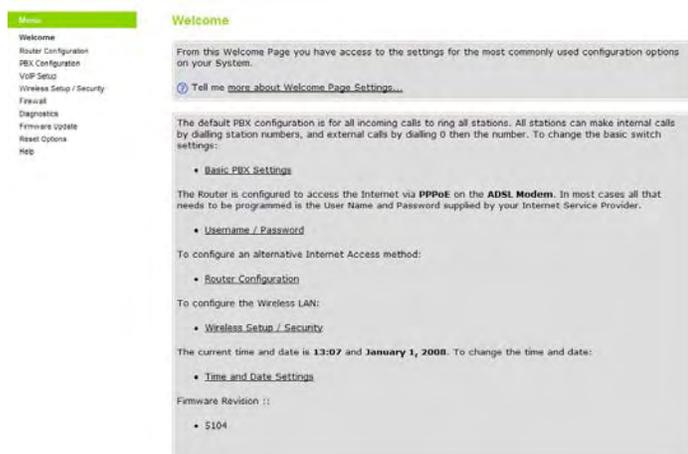
The following log in screen is displayed

**Note**

If the Log-in screen is not displayed, go to Appendix E - PC Configuration, and check the following settings:

- Your PC is set up to automatically obtain an IP address on page 185.
- Your Browser is set up not to use a proxy server on page 189.

The user name is **admin** and the password is **admin**. The welcome page is displayed.



4. Click on 'Router Configuration' on the left-hand side menu

### Router Configuration

From this page you have access to the settings for the most commonly used Router Configuration options on your system.

[Tell me more about Router Configuration...](#)

To setup access to the Internet if you are using the internal ADSL Modem:

- [ADSL Modem](#)

To configure the router if you are connected to a LAN or if you are using an external router or external ADSL modem:

- [WAN/DMZ Port](#)

#### 5. Select ADSL Modem'

- The current ADSL modem settings are shown.
- The default settings are PPPoE with a VPI of 8 and VCI of 35.
- No Username or Password is set. Check the settings supplied by Vox Telecom. These may not be the same as the default settings and may need to be changed.

### ADSL Modem: Types of Access

There are five types of Internet Access available. Choose a type that is suitable for your Internet connection from the options below:

[Tell me more about ADSL Modem settings...](#)

- PPPoA - use this if you have a PPPoA DSL connection
- PPPoE - use this if you have a PPPoE DSL connection
- DHCP - use this if you have a DHCP DSL connection
- Manual - use this to configure your connection's gateway and DNS servers directly

Next >

Cancel

Select 'Change the ADSL Modem settings here'. The following page is displayed: -

Select the type of connection from the list supplied. The selection of PPPoA or PPPoE is described here.

If the Access method is DHCP (RFC 1483) please go to page. If the Access method is Manual, please go to page 84.

When PPPoE is selected, the following screen is displayed

### ADSL Modem: PPPoA

In order to use a PPPoA connection to the Internet, you must supply a username and password to logon to your Internet Service Provider (ISP). Your ISP should provide you with a username and password when you sign up for their service.

[Tell me more about the PPP username and password...](#)

PPP Username

PPP Password

Retype the PPP Password

Next >

Cancel

Enter the Username and Password as supplied by Vox Telecom for Internet Access. Select 'Next'.

### Internet Access: Manual VPI and VCI Setup

VOX PBX needs to know which VPI and VCI it should use for Internet Access. Enter the VPI and VCI values that your ISP has provided in the boxes below:

[? Tell me more about choosing VPI and VCI values...](#)

VPI

VCI

Enter the VPI and VCI settings supplied by Vox Telecom.  
Confirm the configuration by selecting 'Confirm Changes'.  
Your Broadband service is now setup. However, it may take several minutes for the service to synchronise before you can start browsing. Once the DSL LED has gone solid green with an occasional flicker and the Internet LED is solid or flashing green your Vox PBX is ready to browse the Internet.  
If the Internet LED is Red, check the Username and Password.

Continue with programming as described on Page 81.

### Cabling Operator Consoles

---



Prior to cabling the system unit and fixing its location it is recommended that you check that you have located the system unit in an area that gives satisfactory coverage for the DECT phones and the Wireless LAN.

Operator Consoles can be connected directly to the Vox PBX using the telephone cord. If you wish to locate the phone further away from the Vox PBX you can do so by running telephone cable and using telephone sockets.

Four wires are needed to connect the Operator Consoles

Socket Pin Out	Function	RJ11 pinout
A	Speech	Pin 3
B	Speech	Pin 4
C	Data	Pin 2
D	Data	Pin 5

### Cabling Standard Telephones

---

Standard telephones can be connected directly to the system using the telephone cord. If you wish to locate the phone further away from the Vox PBX you can do so by running telephone cable and using telephone sockets. It is recommended that two-pair cable be used with the same connections as for an Operator Console. You can however use a single pair.

Socket Pin Out	Function	RJ11 pinout
A	Speech	Pin 3
B	Speech	Pin 4

---

### Wall Mounting the Vox PBX

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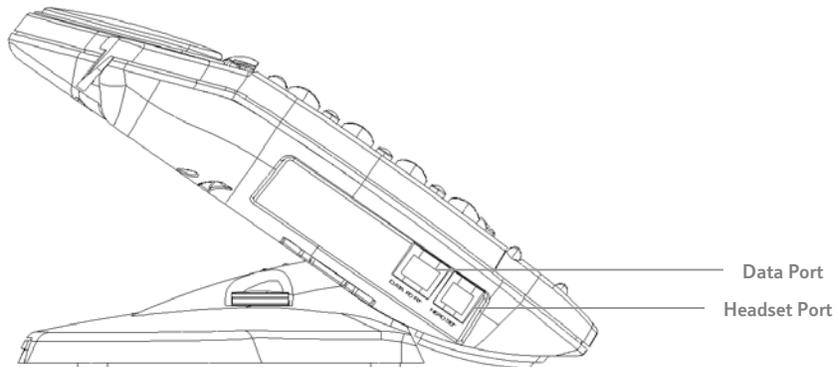
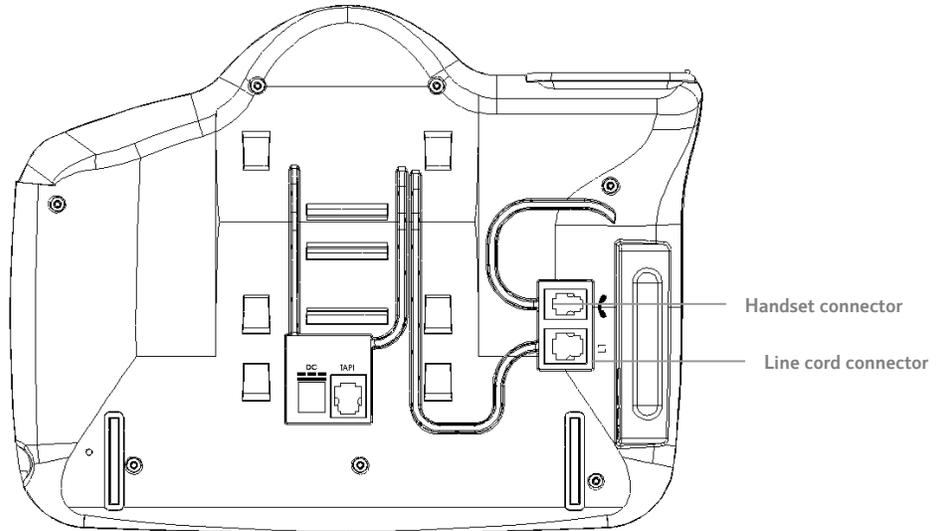
The Vox PBX operator console can be wall mounted. You can print this page and use it as a template for locating the wall mounting screws supplied

*1 to 1 Template (A4 size paper)*



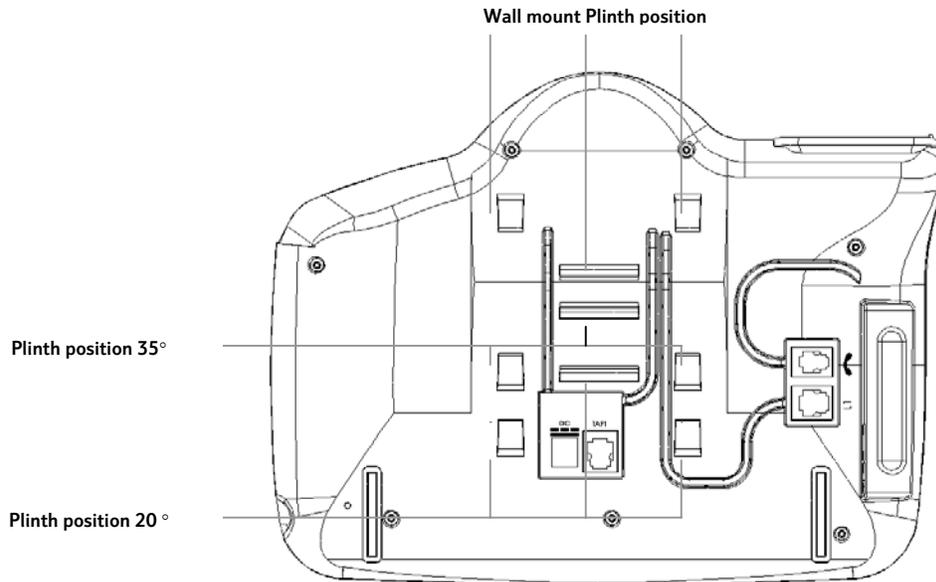
Operator Console connections (underside of phone)

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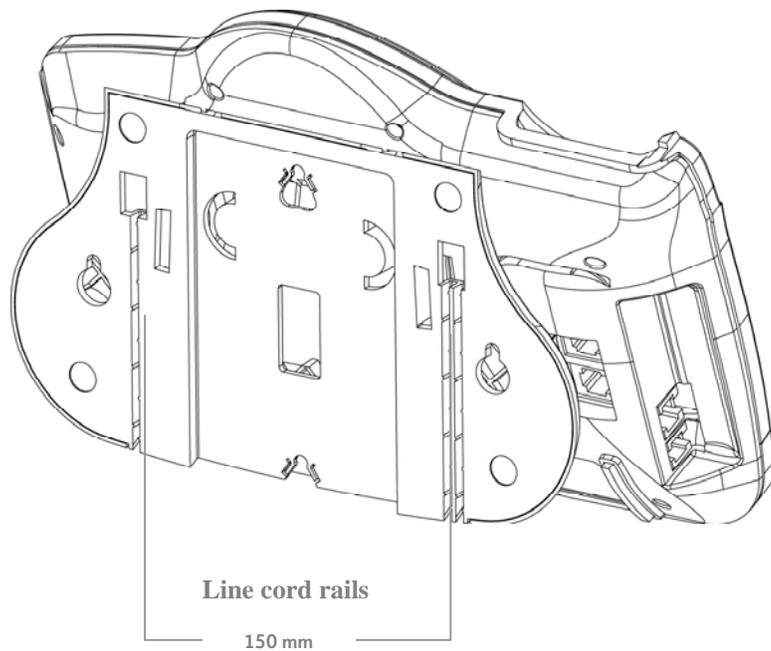
### Attaching the Operator Console desk plinth

The desk plinth allows you to mount the Operator Console at two angles.

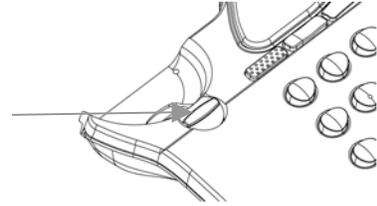


### Wall-mounting a Operator Console

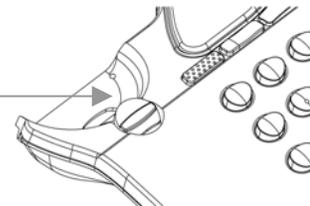
1. The phone plinth is inverted on the base to wall mount the phone.
2. Locate, drill and plug the 2 screw locations as shown below. The holes should be deep enough to accept a 2.5 cm screw.
3. Insert the two screws leaving sufficient space to clip the base over them. Locate the phone and base over the screws.



Wall hook when the Operator Console is desk mounted



Wall hook when the Operator Console is wall mounted.

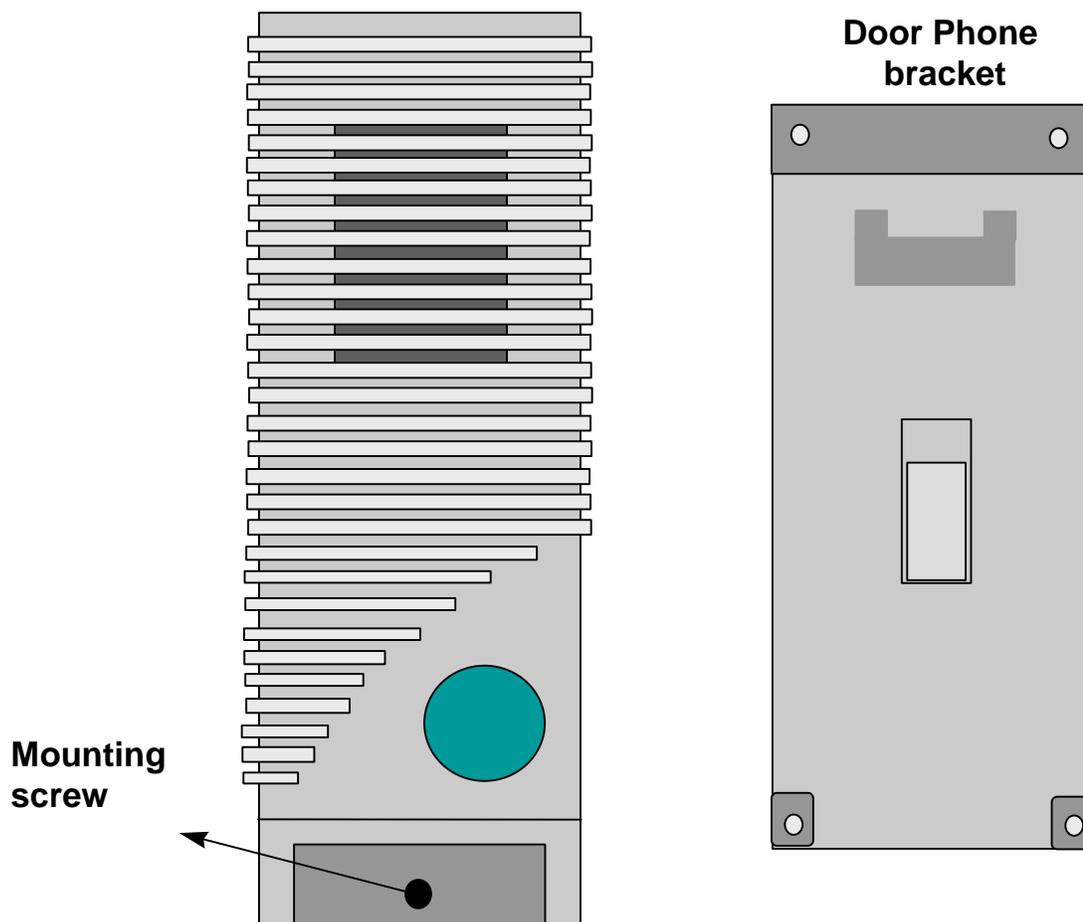


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### Door phone

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The door station should be connected to station 23.



Connect the single pair from the door station to the AB connections on station 23.

The system must be programmed to recognise the door station. See page 79 for programming via an Operator Console and page for configuration via the Web Management application.

---

### Power fail telephone

---

In the instance of power failure the Vox PBX can still operate using analogue phones. Connect a standard analogue telephone to the Power Fail connector. When the Vox PBX is switched off the analogue line (Line 1 Port ) is switched through to this phone and you can make and receive calls on it until the power is restored.

## 4 Basic programming using the Management Application

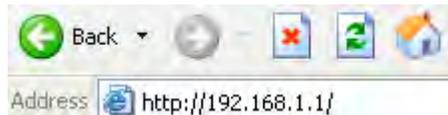
The Vox PBX includes a system management interface that enables you to configure your Vox PBX. The management interface is accessible through a web browser from any PC connected to the Vox PBX via the wired or wireless LAN.



**Note**

*By default the Wireless network card in the Vox PBX is disabled. This is as a security measure to prevent unauthorised access to the Vox PBX. To turn on the Wireless network please refer to page 119*

1. Open a Web Browser such as Internet Explorer or similar on the PC.
2. Go to the Management Application of your Vox PBX by entering **http://192.168.1.1** into the web browser.



The following Log In page is displayed



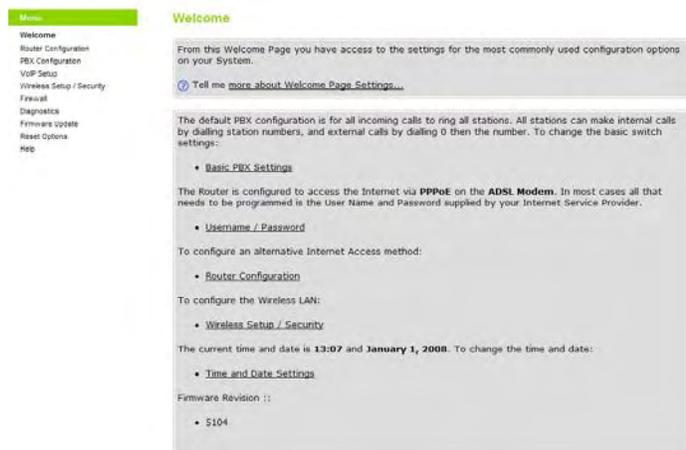
3. Enter your user name and password.
4. The first time you log into the program, use these defaults:
5. Click OK

**User Name:** admin  
**Password:** admin



**Note**

You can change the password at any time or you can configure your Vox PBX so that you do not need to enter a password. See Password on page 94



**Note**

If you receive an error message or the Welcome page is not displayed check the PC settings as shown in Appendix E on page 185.

This is the first page displayed each time you log in to the Web Management Tool.

It provides links to the programming pages that are most commonly used. This page contains links to the following pages:

- Basic PABX Settings (the most common settings for the telephone system)
- Username and Password (In most cases entering the Internet user name and password is all that is required to allow Internet Access)
- Router Configuration (This is only required if you are using a Cable modem or private network).
- Wireless Security / Setup (to set up a wireless connection to your PC(s))
- Time and Date Settings (to set the Time and Date on the phone system)

### Basic PABX Settings

From this page, you can configure the most commonly used telephone system functions, which are:

- Incoming Ringing - selecting the phones that ring for incoming calls

- Station Names - programming Station names so that the names rather than station numbers used on the Operator Console
- Outgoing Restriction - you can restrict Stations from making calls on particular lines.
- Station Class of Service - restricting phones from making particular types of call e.g. International calls
- DECT Registration - DECT Cordless phones must be registered on the system before they can be used to make telephone calls

### Incoming Ringing

You can determine which phones ring for incoming calls. Calls on each line can be set to ring different phones. You can also have different phones ringing when the system is in night mode. For example, in DAY mode, all calls on Line1 might ring all phones, but in NIGHT mode, all calls on Line 1 might be set to only ring Station 20.

For example:

In both DAY & NIGHT modes, all calls on VoIP Line 1 might be set to ring on Station 23 only.

To change the settings, select ON or OFF from the relevant drop down box for the line/Station configuration you require.

[Edit Incoming Ringing](#)

Turn off the stations that are not to ring for incoming calls on each line.

[Tell me more about Incoming Ringing...](#)

Pages: 1 2

	Stn. 20	Stn. 21	Stn. 22	Stn. 23	Stn. 31	Stn. 32	Stn. 33	Stn. 34
Line 1 day	On							
Line 2 day	On							
IP Trunk 1 day	On							
IP Trunk 2 day	On							
IP Trunk 3 day	On							
IP Trunk 4 day	On							
Door Station day	On							
Line 1 night	On							
Line 2 night	On							
IP Trunk 1 night	On							

Apply

[Back to PBX Configuration](#)

The default is that **ALL lines** ring **ALL Stations** in both Day and Night Modes.



The Apply button must be clicked before the page is exited for the changes to take effect. The settings will be lost if this is not done.



**Note**

To set Night mode see page 72.

## Station Settings

This option allows you to programme features for individual Stations. You can assign names to Stations. When a Station receives an internal call, its display will show the calling Station name instead of the calling Station number.

To set the Station name, left mouse click on the field and enter the name associated with the Station.

### Edit Stations

This page allows you to program station features of the PBX.

The settings on this page have an effect on an station by station basis. Individual features can be turned on or off for particular stations on the system.

[Tell me more about Station Settings...](#)

	Name	Voicemail	
Stn. 20	<input type="text"/>	Off <input type="button" value="v"/>	Advanced Options... Personal Speed Dial... Program Keys...
Stn. 21	<input type="text"/>	Off <input type="button" value="v"/>	Advanced Options... Personal Speed Dial... Program Keys...
Stn. 22	<input type="text"/>	Off <input type="button" value="v"/>	Advanced Options... Personal Speed Dial... Program Keys...
Stn. 23	<input type="text"/>	Off <input type="button" value="v"/>	Advanced Options... Personal Speed Dial... Program Keys...
Stn. 31	<input type="text"/>	Off <input type="button" value="v"/>	Advanced Options... Not registered
Stn. 32	<input type="text"/>	Off <input type="button" value="v"/>	Advanced Options... Not registered
Stn. 33	<input type="text"/>	Off <input type="button" value="v"/>	Advanced Options... Not registered
Stn. 34	<input type="text"/>	Off <input type="button" value="v"/>	Advanced Options... Not registered <a href="#">Register a handset...</a>

[Back to PBX Configuration](#)

A maximum of 10 characters per name can be entered.

### Voicemail

Use this setting to turn ON/OFF individual voicemail boxes for each Station.



**WARNING**

The Apply button must be clicked when the names are entered and voice mail selected. Do not select any of the other options on the page until the Apply has been clicked or the settings for the names and voice mail will be lost.

## Outgoing Restriction

You can use this feature to restrict a Station from being able to make outgoing (external) calls on particular lines.

- Configure the restriction for each line separately, i.e. turn OFF for those Stations that are not allowed to select the particular line to make outgoing calls.

### Edit Outgoing Restrictions

This feature is used to restrict individual stations from being able to make outgoing (external) calls on particular lines.

[Tell me more about Outgoing Restrictions...](#)

	Stn. 20	Stn. 21	Stn. 22	Stn. 23	Stn. 31	Stn. 32	Stn. 33	Stn. 34
Line 1	Off							
Line 2	Off							
IP Trunk 1	Off							
IP Trunk 2	Off							
IP Trunk 3	Off							
IP Trunk 4	Off							

[Back to PBX Configuration](#)

## Station Class of Service

The Class of Service feature allows the user to define barring settings for each Station connected to the system restricting that Station from making certain types of calls from the system.

### Edit Class of Service Stations

Stations can be allowed to dial all calls, dial local and national calls, dial local calls, or be restricted from dialing all calls with the exception of emergency calls. There can be a different setting for Day Mode and Night Mode. If Emergency Only is set, allowed and restricted codes must be off.

[Tell me more about Class Of Service...](#)

To change the Allowed, Restricted, National and International codes, [click here](#).

Day	Class of Service	Allowed Codes	Restricted Codes
Stn. 20	No Restrictions	Off	Off
Stn. 21	No Restrictions	Off	Off
Stn. 22	No Restrictions	Off	Off
Stn. 33	No Restrictions	Off	Off
Stn. 31	No Restrictions	Off	Off
Stn. 32	No Restrictions	Off	Off
Stn. 33	No Restrictions	Off	Off
Stn. 34	No Restrictions	Off	Off
Night	Class of Service	Allowed Codes	Restricted Codes
Stn. 20	No Restrictions	Off	Off
Stn. 21	No Restrictions	Off	Off
Stn. 22	No Restrictions	Off	Off
Stn. 23	No Restrictions	Off	Off
Stn. 31	No Restrictions	Off	Off
Stn. 32	No Restrictions	Off	Off
Stn. 33	No Restrictions	Off	Off
Stn. 34	No Restrictions	Off	Off

The following restrictions can be defined on a per Station basis:

- No restrictions
- Restrict international
- Local only
- Emergency calls only
- By default, ALL Stations can dial ALL destinations.



The Apply button, at the end of the page, must be clicked before the page is exited or any other link is selected for the changes to take effect. The settings will be lost if this is not done.

### The Allowed and Restricted Codes

---

The Allowed & Restricted codes can be used to add greater flexibility as to how you can configure the settings. For example, say one wanted to restrict all International, except to France (Country code 0033...). In this case, one would enable Restrict International in the Class of Service settings, and then set Allowed Codes to ON for the Station in question.

In the Allowed Codes list, one would enter the dialling prefix for France (0033), thus giving the required settings.



If 'Emergency Only' is set, Allowed and Restricted codes must be OFF.

### Day and Night Mode

---

There are different settings for Day Mode and Night Mode. To configure Day/Night mode see page 72

### Setting Class of Service Codes

The leading digits of the dialled number determine the definition of what constitutes Restricted, Allowed, and National & International calls.

**Edit Class of Service**

[Tell me more about Class Of Service...](#)

Pages: 1 2 3 4 5

	International	National	Allowed	Restricted
Index 1	00	0		
Index 2	001	01		
Index 3				
Index 4				
Index 5				
Index 6				
Index 7				
Index 8				
Index 9				
Index 10				

[Back to Edit Class of Service Stations](#)

[Back to PBX Configuration](#)

For example, numbers beginning with '00xx' normally are international calls. Numbers beginning with just a single zero '0xx' are normally considered national calls. The definition of Allowed and Restricted codes is at the user's discretion.

50 entries can be configured in the dialling codes for International, National, Allowed and Restricted numbers. These dialling rules can be configured manually. See *'To change the Allowed, Restricted, National and International codes, [click here](#)'* on the **'Edit Class of Service Stations'** page.



The Apply button must be clicked before the page is exited for the changes to take effect. The settings will be lost if this is not done.

## DECT Registration

In the Edit Extensions screen, you can see the status of the cordless DECT Stations (registered or not registered). When *Register a handset* is selected, a prompt is displayed indicating that the 'Reg' key on the cordless phone should be selected and that the PIN is 1234. The system is then set to registration mode for 30 seconds.

### Edit Stations

This page allows you to program station features of the PBX.

The settings on this page have an effect on a station by station basis. Individual features can be turned on or off for particular stations on the system.

[Tell me more about Station Settings...](#)

Name	Voicemail			
Stn. 20	Off	<a href="#">Advanced Options...</a>	<a href="#">Personal Speed Dials...</a>	<a href="#">Program Keys...</a>
Stn. 21	Off	<a href="#">Advanced Options...</a>	<a href="#">Personal Speed Dials...</a>	<a href="#">Program Keys...</a>
Stn. 22	Off	<a href="#">Advanced Options...</a>	<a href="#">Personal Speed Dials...</a>	<a href="#">Program Keys...</a>
Stn. 23	Off	<a href="#">Advanced Options...</a>	<a href="#">Personal Speed Dials...</a>	<a href="#">Program Keys...</a>
Stn. 31	Off	<a href="#">Advanced Options...</a>	Not registered	
Stn. 32	Off	<a href="#">Advanced Options...</a>	Not registered	
Stn. 33	Off	<a href="#">Advanced Options...</a>	Not registered	
Stn. 34	Off	<a href="#">Advanced Options...</a>	Not registered	

[Register a handset...](#)

[Back to PBX Configuration](#)

To un-register a Station select *Unregister*. The page should then be refreshed after registering or un-registering so that the correct setting is displayed.

## Incoming call Diverts

This feature allows you to divert calls received on each of the lines. You can use this feature to divert all calls, unanswered calls or calls received when the Station(s) ringing for the call is busy. The calls can be diverted to another Station, the answering machine or an external number.

### Edit Incoming Call Diverts

This feature can be used to Divert calls received on a particular line to an station, the answering machine or an external number.

[Tell me more about Incoming Call Diverts...](#)

	All Calls	Stations Busy	On No Answer
Line 1	<input type="text"/>	<input type="text"/>	<input type="text"/>
Line 2	<input type="text"/>	<input type="text"/>	<input type="text"/>
IP Trunk 1	<input type="text"/>	<input type="text"/>	<input type="text"/>
IP Trunk 2	<input type="text"/>	<input type="text"/>	<input type="text"/>
IP Trunk 3	<input type="text"/>	<input type="text"/>	<input type="text"/>
IP Trunk 4	<input type="text"/>	<input type="text"/>	<input type="text"/>

[Back to PBX Configuration](#)

For each incoming line (Analogue Line 1&2 VoIP 3-6,) you can define a number to divert the call.

To divert to another Station enter the Station number (20-23 or 31-34).

To divert to the Answering machine enter the code 710.

To divert to an external number enter the line access code (For Analogue Line 1 &2, for VoIP 3,6) followed by the number. The line access code for Analogue line is 0 and for the VoIP lines is 8.



The Apply button must be clicked **before** the page is exited for the changes to take effect. The settings will be lost if this is not done.

---

### Enabling the wireless network.

The Vox PBX is supplied with the Wireless Network disabled.

To Enable the Wireless Network

1. In the *General Settings* section, select '*Enable or disable the wireless network here*'.

The following page is displayed: -

#### Wireless Network: Enable / Disable

Enabling wireless networking will allow PCs with wireless network capabilities to connect to the Internet through VOX PBX.  
[? Tell me more about the wireless networks...](#)

Select whether you want wireless PCs to connect to your device:

Disable - Wireless PCs will not be able to connect to your device  
 Enable - Wireless PCs will be able to connect to your device

Next >    Cancel

2. To enable the network, click on the '*enable*' radio button and then click Next> and confirm the change.

To set the Wireless Network name

1. In the *General Settings* section Select '*Change your wireless network name here*'.

The following page allows you to set the name of your wireless network:

### Wireless Network: Basic

2. Your Vox PBX and all of the wireless PCs in your wireless LAN share the same wireless network name. This name, commonly known as the *Service Set Identifier (SSID)*, distinguishes your Wireless network from any other(s) that may be in use nearby. Enter the name for your network and then click *Next>* and confirm the change.

### Additional wireless network security settings

You can provide additional security by changing the WPA key, restricting PCs that can access the Wireless LAN and by inhibiting the transmission of the Wireless Network SSID. Inhibiting the transmission of the SSID means that the wireless utility on PCs will not display the wireless network so the network is not generally visible.

1. In the *General Settings* section, select '*Change wireless security settings here*'.

### Wireless Network: Security

2. The encrypted data can only be sent and received by users with access to a private network key. Each PC on your wireless network must be manually configured with the same key as your Vox PBX in order to allow wireless encrypted data transmissions. WPA data encryption is based on a WPA master key. The master key is derived from the pass phrase and the network name (SSID) of the Vox PBX.

To configure security, choose one of the following options:

If you do not want to use Wireless Network security, click the off radio button and then click *Next>*. You are **strongly recommended** to use wireless network security on your Vox PBX.



It is strongly recommended that you enable Wireless Security to help protect your wireless network from unauthorised access.

Two options of security are provided, WPA and WPA2.

#### Wi Fi Protected Access (WPA)

WPA uses an encryption method called Temporal Key Integrity Protocol (TKIP). A passphrase is configured manually on all the devices on the wireless network, and keys are automatically generated for use between the Vox PBX and each wireless PC.

1. If you want to use WPA, click on the *Wi-Fi Protected Access (WPA) on the wireless network* radio button and then click *Next>*. The following page is displayed:

#### Wireless Network: Wi-Fi Protected Access

You must provide a pass phrase for Wi-Fi Protected Access. This should consist of between 8 and 63 characters.  
Tell me [more about Wireless network pass phrases...](#)  
Pass phrase   
Next > Cancel

2. Type a unique pass phrase in the *Pass phrase* text box. Your pass phrase should be at least 20 characters long in order to deter potential intruders. The pass phrase can be words, letters, numbers, or a combination of all of these.
3. Once you have typed a pass phrase, click *Next>* and confirm the setting.

#### Wi Fi Protected Access 2 (WPA2)

This WPA security option has an improved data encryption method called AES (Advanced Encryption Standard). The AES method is the default but TKIP can be selected. As with WPA a passphrase is used and configured manually.

1. If you want to use WPA2, click on the *Wi-Fi Protected Access 2 (WPA2) on the wireless network* radio button and then click *Next>*.

The following page is displayed

**Wireless Network: WPA2 Encryption**

You can change the method that is used by WPA2 for encryption. Select an encryption method from the list below.

[Tell me more about wireless network security...](#)

TKIP(Temporal Key Integrity Protocol)

AES-CCMP protocol

2. Select either TKIP or AES-COMP and then click *Next>*.

The following page is displayed:

**Wireless Network: Wi-Fi Protected Access**

You must provide a pass phrase for Wi-Fi Protected Access. This should consist of between 8 and 63 characters.

[Tell me more about Wireless network pass phrases...](#)

Pass phrase

3. Type a unique pass phrase in the *Pass phrase* text box. Your pass phrase should be at least 20 characters long in order to deter potential intruders. The pass phrase can be words, letters, numbers, or a combination of all of these.
4. Once you have typed a pass phrase, click *Next>* and confirm the setting.

**Disabling the Broadcast of the SSID Network Identifier**

For additional security, you can disable the broadcast of the Network Identifier, SSID. Unticking the *'Enable SSID Broadcast'* button on the Wireless security page does this. To connect to a network that is not broadcasting the SSID it is necessary to enter the SSID manually in the network connection properties in the Control panel of your PC.

**Configure Wireless PCs that can connect to the Wireless LAN**

1. Select *'Change which wireless PCs are allowed to connect here'* on the Wireless General settings page.

The following page allows you to configure which wireless PCs can access the Vox PBX:

**Wireless Network: Address Authentication**

You can restrict which wireless PCs can connect to your device. Select how you want to restrict PCs below.

[Tell me more about restricting wireless access...](#)

Allow any wireless PCs to connect

Allow all wireless PCs to connect except those I specify

Only allow the wireless PCs I specify to connect

By default, any wireless PC that is configured with your network's SSID and channel number can connect to your Vox PBX. You may want to increase the security of your wireless network by creating one of the following lists of wireless PCs:

- A wireless PC blacklist; PCs on this list **cannot** access the Vox PBX, but all other wireless PCs **can**.
- A wireless PC whitelist; PCs on this list **can** access the Vox PBX, but all other wireless PCs **cannot**.
- The Wireless PCs added to either list are identified by their unique MAC address. This is made up of six pairs of characters, with each character either a number between 0 and 9, or a letter between A and F. For example, *00:20:2b:80:2f:30*.

To configure which wireless PCs can access your Vox PBX; choose one of the following options:

1. If you want any wireless PCs to have access to your Vox PBX, click on the *Allow any wireless PCs to connect* radio button. Click *Next>*.
2. If you want to create a blacklist of PCs that cannot access your Vox PBX, click on the *Allow all wireless PCs to connect except those I specify* radio button and then click *Next>*.
3. If you want to create a whitelist of PCs that can access your Vox PBX, click on the *only allow the wireless PCs I specify to connect* radio button and then click *Next>*.

#### Configuring the wireless PC blacklist

1. Once you have selected *Allow all wireless PCs to connect except those I specify* radio button and then clicked *Next>*, the following page is displayed:

#### Wireless Network: Address Authentication

You can configure the list of addresses to **allow** access to your device below.  
Tell me [more about restricting wireless access...](#)

No addresses have been set.

[Add an address here...](#)

Next> Cancel

2. To add a network PC to the blacklist, click *Add an address here...* The following page is displayed:

#### Wireless Network: Address Authentication

Enter the MAC address to add below:  
Tell me [more about restricting wireless access...](#)

MAC address  :  :  :  :  :

Next> Cancel

- Click in each box and type each character pair of the MAC address for the PC you want to blacklist. Click *Next>*. The following page is displayed, containing details of the MAC address that you have just added:

#### Wireless Network: Address Authentication

You can configure the list of addresses to **allow** access to your device below.  
 ? Tell me [more about restricting wireless access...](#)

44:45:53:54:42:00

[Add an address here...](#)  
[Remove an address here...](#)

- If you want to add another MAC address to the blacklist, click '*Add an address here...*' and repeat as above.
- If you want to remove a MAC address from the blacklist, click '*Remove an address here...*'.
- At the displayed page, select the MAC address that you want to remove from the drop-down list.
- Click *Next>*.

#### Configuring the wireless PC whitelist

- Once you have selected *Only allow the wireless PCs I specify to connect* radio button and then clicked *Next>*, the following page is displayed:

#### Wireless Network: Address Authentication

You can configure the list of addresses to **allow** access to your device below.  
 ? Tell me [more about restricting wireless access...](#)

No addresses have been set.

[Add an address here...](#)

- To add a network PC to the whitelist, click *Add an address here...* The following page is displayed:

#### Wireless Network: Address Authentication

Enter the MAC address to add below:  
 ? Tell me [more about restricting wireless access...](#)

MAC address  :  :  :  :  :

- Click in each box and type each character pair of the MAC address for the PC you want to whitelist. Click *Next>*. The following page is displayed, containing details of the MAC address that you have just added:

**Wireless Network: Address Authentication**

Enter the MAC address to add below:  
[Tell me more about restricting wireless access...](#)  
 MAC address  :  :  :  :  :

- If you want to add another MAC address to the whitelist, click '*Add an address here...*' and repeat the instructions.
- If you want to remove a MAC address from the whitelist, click '*Remove an address here...*'.
- At the displayed page, select the MAC address that you want to remove from the drop-down list.
- Click *Next>*.
- Click on the *Confirm Changes* button to apply changes and return to the *Wireless Network* page.

Displaying details of connected Wireless PCs

- At the *Wireless Network* page, click on *View details of connected wireless PCs...* The following page is displayed:

**Wireless Network: Connected Wireless PCs**

The following 1 wireless PCs are currently connected:

MAC Address:	00:12:f0:40:80:32
Signal Strength:	-45

[Return to the wireless status page.](#)

This page displays the MAC address of the PC currently connected to your Vox PBX, together with the signal strength. The signal strength is the measure of radio frequency (RF) energy detected by the Vox PBX on a specific channel. Signal strength may vary depending on the position of the PC(s) in relation to the Vox PBX.

- To return to *Wireless Network* page, click on *Return to the wireless status page*.

---

## Date & Time Settings

---

Use this page to program Time and Date settings for your system.

### Edit Time and Date Settings

To update the time and date settings please enter the new values below.

[Tell me more about Time and Date Settings...](#)

Name	Setting
Date (DDMMYY)	<input type="text" value="010108"/>
Time (H:MMM)	<input type="text" value="1408"/>

[Back to PBX Configuration](#)

### Date

Use this field to enter the system Date - the time is in the DDMMYY format, where DD is the day, MM is the month & YY is the year. For example, 3rd May 2008 = 030508

### Time

Use this field to enter the system time - the time is in the 24- hour clock format. Press *Apply* before exiting the page.

# 5 Using Your Vox PBX Phone System

## System Description

---

- The Vox PBX is an Integrated Communications System supporting all your voice & data needs.
- The Vox PBX can accommodate 4 VoIP Lines and 2 external telephone lines.
- The Vox PBX system can accommodate 4 wired Operator Consoles or standard phones and 4 Vox PBX DECT handsets.
- The Vox PBX Operator Console has a simple-to-use menu-driven interface.
- A door station is available that can be programmed to ring any station. It is connected to station 23. A door strike output is also provided for activating an automatic door opener.
- External Music-on-Hold can also be used. This is provided using the optional Music-on Hold module. If installed it is to be connected to a station position (e.g. Station 20 to Station 23 only).

## Introduction to your Vox PBX Phones

---

- There are four wired and four Vox PBX DECT cordless station positions available on the Vox PBX.
- The wired positions can be equipped with an Operator Console or standard telephone sets.
- The DECT stations are equipped with the proprietary Vox PBX DECT Handsets.

The proprietary Operator Console and DECT handsets are designed to simplify the use of the system by providing integrated features on the stations.

*If a door station is installed it uses a wired station position (station 23) thus reducing the wired telephones to three. See page 105 for instructions on programming the door station*



### Note

Installing the External Music-on-Hold module also uses a station position. If both are installed the number of available wired telephones is reduced to two. See page 106 for instructions on programming the external Music on Hold module.

## Getting Started

---

This section of your Owner's Manual is your guide to using the Vox PBX system and its features, with either an Operator Console or a standard telephone. It also explains how to programme system settings using your Operator Console.

- Read the section 'Vox PBX Operator Console' on page 48 to understand how to operate the menus and use the other features of your Operator Console.
- To get up and running with your Operator Console, read the section '**Operator Console – Basic Call Features**' on page 47
- If you are using a standard telephone, read the section '**Using a Standard or DECT Telephone**' on page 61.
- When you are ready to use additional call features, refer to the section '**Additional Call Features**' on page 65
- To control which numbers system users may dial, refer to '**Class of Service**' on page 72.
- For '**Programming Additional System Options**', such as Door phone & Door strike, see page 79.
- Your Vox PBX system comes with an integrated Voicemail functionality, as a result, a number of powerful Voice Services are available. Details are given in '**Using Voicemail**' on page 72

## Vox PBX Operator Console

### Introduction to your Operator Console

The Operator Console is a highly featured display telephone for use with your Vox PBX system.

It features a 4-line display that contains prompts and menus with selectable options. This unique menu-driven interface makes the system simple to use, and no codes are needed to program and activate features. The Operator Console is also equipped with a Data port, positioned on the left-hand side of the phone. This Data port is used primarily for a modem from a PC to directly connect to the Station.

System settings are also programmed via an Operator Console using the intuitive menu-driven interface, without the need for special codes.

The Operator Console has eight Programmable Keys, which are pre-programmed to access Analogue lines, and VoIP lines and four function keys that group frequently used features.

The Operator Console is fully hands-free, so you can make calls, receive calls and use its features without lifting the handset.

The Operator Console is in diagram format below:



### Using the Operator Console display

The Operator Console display presents various prompts and information, and provides selectable options to the Station user.

Prompts tell you what action to take, or warn of an incorrect action. For example, an attempt to access the system programming menus from the wrong Station will result in the prompt 'Programming refused'.

When your Operator Console is not in use, its display shows the time and date on the top line. To set the time and date, see page 72.

When you dial an external number, the display shows the digits as they are dialled. The call duration is also displayed.

When you make an internal call, the Station number you dial is displayed. If the Station has been programmed with a name, the name is displayed. The call duration is also displayed.

If Caller ID service is provided on the exchange line the calling number is displayed.

The duration of external calls is displayed on the top line of the display.

### Menus



When the Operator Console is idle, the Idle Menu is presented containing a large number of options displayed in groups of three. This menu, showing the first three options, is shown below. (Use Scroll Keys below display to scroll up and down).

If you are on a call or operating a feature, the menu changes to offer only those options relevant to what you are doing. In addition, when features such as Station Lock are set, the first prompt on the display becomes the option to cancel the activated feature.

When activating certain features it is necessary to select the Stations on which you wish to activate the feature. In this case, the Station Menu lists all the Stations connected to the system. Similarly, a line Menu may be presented listing all the analogue lines and VoIP Lines connected to the system.

### Using the display Keys to select menu options

The six display Keys, located on each side of the display, are pressed to select the menu option shown alongside on the display. This will either

activate a feature, cause another menu to be displayed, or select items from a list.

When selecting from a displayed list, (e.g. Stations from the Station Menu), selected items will be denoted by a ♦ next to the item.

Unselected items will be denoted by a ◇ next to it. Selecting an item with an ◇ alongside causes the item to be selected and the symbol to change to ♦, and vice versa.

### **Using the Scroll Keys**

The Scroll Keys are located under the display and are used to scroll up and down through the display options as well as back and forward when text is being entered. When the Scroll Down Key (⏴) is pressed while scrolling through the display options the next three available choices are shown. Conversely, pressing the Scroll Up Key (⏵) will take you back up the display to the previous choice.

### **Using the Clear Key 'C'**

If you press the Clear key 'C' for 2 seconds when on a call it will clear the call down.

When scrolling through menus pressing the C key steps back to the previous level menu.

If you are entering digits before lifting the handset, or entering text, pressing the C key deletes the last digit on the display.

### **How to enter text when programming names.**

The Keypad can be used to enter digits when dialling or text

Press 2 once for A, twice for B, and so on. (Pressing 2 continuously loops through ABCabc2). Press 3 once for D, twice for E, three times for F, and so on.

Selecting a different key moves the cursor on automatically to the next location. If the next letter is on the same key, you can either wait for two seconds for the cursor to move on or press the right Scroll Key to move to the next location. Pressing 1 or 0 and waiting two seconds gives a blank space.

Pressing the Clear Key C deletes the last letter on the display.

You can use the scroll Keys to move back and forward through the text A maximum of ten characters per name, including spaces, can be entered.

### **Using the Programmable Keys / Line Keys**

There are eight Programmable Keys on the Operator Console. The first and second keys are programmed as line 1 & line2. The third and fourth keys are programmed as VoIP line 1 & VoIP line 2 and automatically selects an analogue line. The line keys incorporate a light, which is lit on all Operator Consoles when the associated line is selected.

The light is green on the Operator Console using the line and red on all other Operator Consoles. When a call on a line is put on hold the associated line Key light flashes on all Operator Consoles, (unless the system programming is changed from the default as detailed on page 172).

By default, Programmable Keys select available lines on the system, should you wish to allocate alternative functions to these keys this can be facilitated using Key Programming.

### Using the Hands-free Key

You can use the Hands-free Key to have a conversation without having to lift the handset. Press the Hands-free Key to go off-hook, as if the handset were lifted with the Operator Console speaker and microphone replacing the handset. Pressing the key again goes back on-hook, as if the handset were replaced.

You may also use the Operator Console with a headset. (See: '**Using your Operator Console with a headset**' on Page 60).

The Hands-free key has a red light, which is lit whenever the Hands-free Key has been pressed to go off-hook or to turn on the speaker.



**Note**

Pressing the Hands-free Key at any time during programming exits the programming menus and returns the display to the Idle Menu.

### Using the Volume Key

To adjust the speaker volume, press the Volume Key when in Hands-free Mode.

To adjust the handset receiver volume, press the Volume Key when in Handset Mode.

To adjust the ringing volume, press the Volume Key when the Operator Console is ringing.



**Note**

The Volume level increases/decreases by one step for every press of the Volume Key.

### Using the Secrecy/Mute Key

The Secrecy Key can be pressed when you are using the handset or in Hands-free Mode. When pressed, the other person on the call cannot hear you. The Secrecy Key has a red light, which is lit when Secrecy is active.

### The Ringing / Message Waiting Light:

There is a red light on the top right-hand corner of the Operator Console. This light flashes when there is an incoming call. It also lights up when a voice message has been left in your Voice Mailbox.

### Using the Function Keys

There are four Function Keys located directly above the Operator Console display. Particular features are grouped under these keys, as follows:



**HOLD:** This key puts external calls on hold



**PROGRAM:** This key accesses the options available to customise your Operator Console settings. It also accesses system programming from the Programming Station only.



**MESSAGE:** This key accesses Voicemail. (See page 165 for Voicemail).



**DIRECTORY:** This key allows you to programme and dial numbers in the System and Personal Speed Dial lists.

## Customising your Operator Console

This  **PROGRAM** Key accesses the options available to customise your Operator Console settings.

### To turn on Automatic answer mode

You may programme your Operator Console to work in 'Auto-answer mode'. In this mode, the Hands-free Key light flashes red, and when you receive an internal call you hear a burst of tone and the call is connected automatically. You can speak to the caller without touching the Operator Console.

1. From your Operator Console, press the  **PROGRAM** Key
2. Select 'Auto answer'.
3. Select the required option – 'Set auto answer' or 'Cancel auto answer', to set and cancel the Automatic answer mode respectively.
4. Press the Hands-free Key to finish programming.

### To program a feature onto a Programmable Key on your Station

You may re-programme any or all of the Programmable Keys located on the Operator Consoles. There are eight keys on the Operator Console. You can programme these keys to select lines, Stations, features or speed dial numbers.

From your Operator Console, press the  **PROGRAM** Key  
Press the Scroll Down Key () until 'Key Programming' is displayed.  
Select 'Key programming'.

1. Press the Programmable Key to be programmed. A list of options appears on the display.
2. Select the required feature to be programmed onto the key. Use the Scroll Down Key () to scroll down to view the list of available features. For example, to programme the key with a speed dial number, select the 'Individual digits' option.
3. Press the Hands-free Key to finish programming.



If you are programming the key to call an external number remember to precede the number with an 0 to select the analogue line or 8 to select a VoIP Line.

### To turn on Headset Mode

When a headset is plugged in to the headset socket it is automatically detected and the option to turn the Headset mode on is displayed on the display. You can also turn Headset mode on and off via the  **PROGRAM** Key

From your Operator Console, press  **PROGRAM** Key

1. Press the Scroll Down Key () until 'Headset Mode' is displayed.
2. Select 'Headset mode'.
3. Select the required option – 'Headset on' or 'Headset off'. Once selected, the display will show 'Headset On' or 'Headset Off' and then revert to the Idle Menu.
4. Press the Hands-free Key to finish programming.

The handset does not operate in Headset Mode.

### To set a ringing tone on your Operator Console

You can select one of six ringing tones.

1. From your Operator Console, press the  **PROGRAM** Key
2. Press the Scroll Down Key () until 'Ringing options' is displayed.
3. Select 'Ringing options'.
4. Select 'Tone 1', 'Tone 2', 'Tone 3', 'Tone 4', 'Tone 5' or 'Tone 6' which will cause the selected tone to sound.
5. Select '*Confirm*' to use the chosen tone. On the display, 'Ring type set' will appear and then the display will revert to the Idle Menu.
6. Press the Hands-free Key to finish programming.

### To set the display contrast on your Operator Console

You may choose from four levels of display contrast.

1. From your Operator Console, press the  **PROGRAM** Key
2. Press the Scroll Down Key () until 'Contrast options' is displayed.
3. Select 'Contrast options'.
4. Select 'Level 1', 'Level 2', 'Level 3' or 'Level 4' to set a contrast option. The prompt 'Contrast set' appears on the display.
5. Press the Hands-free Key to finish programming.

### To enter system programming

If your Station is the Programming Station, you have access to the system programming options. If you select this option, you will be prompted to enter the System Programming Password. If this option is selected from any other Station, the display will show 'Programming Refused'. Again, the default Programming Station is Station 20.

1. From the Programming Station, press the  **PROGRAM** Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select 'System programming'.

Enter the System Programming Password to access system programming. (1111 in default).

### Background music

This feature allows a station to have music played over the speaker of an Operator Console while the station is idle. This background music is supplied only if there is an external music source connected to the system. This background music is disconnected as soon as the user goes off hook or a call is presented to the station.

1. From your Operator Console, press the  **PROGRAM** Key
2. Press the Scroll Down Key () until 'Background Music' is displayed.
3. Select the required option – 'Background music on' or 'Background music off'.
4. Press the Hands-free Key to finish programming.

## Operator Console– Basic Call Features

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### Making and Answering Calls

#### Making an external call.

There are two basic modes of operation available for making external line calls. In the normal mode, which is the default, a line access digit (0 or 8) is dialed to select a line.

If Automatic Line selection is programmed you do not enter the line access code. See page 153 for Automatic Line selection programming from an Operator Console and page 104 for programming via the web management interface.

#### Making an external call in normal mode

1. Press a Line Key and dial the external number.

Or

2. Dial 0 (to select analogue lines) or Dial 8 (to select a VoIP line). When dial tone is returned, dial the external number.

#### Making an external call with Automatic Line selection programmed

1. Press a Line Key and dial the external number.

Or

2. Lift the handset, or use the Hands-free Key, and dial the external number. The system automatically selects a free line and the number is dialed.

#### Making an external call in Pre-dial mode

If you do not lift the handset, you may enter digits in Pre-dial mode by dialling 0 or 8 followed by the external number in normal mode or dial the external number when Automatic Line selection is programmed. Digits will not be sent to line until you lift the handset, press the Hands-free key, or select 'Dial' from the display.

You can edit the number you have entered prior to sending to the line, by using the left-hand Keypad 'Edit Key', located below the keypad.

#### To make an internal call in normal mode

You can place an internal call in one of the following ways:

1. Select the 'Internal Call' option on the display and select the desired Station from the list
2. Dial the Station number (20 – 23 or 31-34) and select 'Dial'.
3. Lift the handset and dial the Station number.

The display will show the Station number, or, if programmed, the Station's name.

#### To make an internal call with Automatic Line selection programmed

1. Select 'Internal Call' on the display and select the desired Station from the list.

The display will show the Station number, or, if programmed, the Station's name.

### Speed Dial list

Each Station can programme up to 30 Individual Speed Dial numbers. You can also programme 99 system speed dial numbers and names. Users of the system can access the system speed dial numbers, provided they are not restricted from dialling the number because of their Class of Service.

For a description of the Class of Service Override facility, see the Call Restrictions section on page 72.



#### Note

If a number or an incoming call matches a number in the system speed dial list, the name in the list will be displayed.

To add or delete a Personal Speed Dial number

1. Press  **DIRECTORY** Key
2. Select '*Personal Entries*'.
3. Enter the Index 01-30
4. Enter the number and press *Confirm*
5. Enter the name and press *Confirm*.

To delete an entry select '*Delete*' when the index is entered.

For configuration via the web interface, see page 112.

To dial a Personal Speed Dial number

Press  **DIRECTORY** Key.

Select '*Personal Speed dial*'.

Enter the first letter of the name or scroll through the entries to find the entry you want.

When you have selected the number or name you want a free line is automatically selected and the number is then dialled.

If some numbers are entered without names, they are presented at the end of the list.

To add or delete a System Speed Dial number

1. Press  **DIRECTORY** Key
2. Select '*System Entries*'.
3. Enter the Index 01-99
4. Enter the number and press *Confirm*
5. Enter the name and press *Confirm*.

To delete an entry select delete when the index is entered.

For configuration via the web interface, see page 107.

To dial a System Speed Dial number

1. Press  **DIRECTORY** Key.
2. Select '*System speed dial*'.
3. Enter the first letter of the name or scroll through the entries to find the entry you want.
4. When you have selected the number or name you want a free line is automatically selected and the number is then dialled.

5. If some numbers are entered without names, they are presented at the end of the list.

To answer a call

When the Operator Console rings, you can do one of the following:

1. Select '*Answer the call*' on the display.
2. Lift the handset.
3. Press the Hands-free Key.

From a standard telephone, lift the handset.

Reseize

The Reseize option is displayed when dialling an external call and when an external call is answered. If '*Reseize*' is selected, the current call is released and the line is re-seized presenting external dial tone.

Holding & Transfer Calls

To place an external call on hold

1. While on the call, select '*System hold*' on the display.
2. To retrieve the call, select '*Return to line*' on the display or press its Line Key.



**Note**

If a station has two calls on system hold, selecting '*Return to line*' will return the Station to the first call that was put on hold.

To transfer a call to another Station

1. While on the call, select '*Internal Transfer*' on the display.
2. Select the desired Station from the Station list presented on the display, or dial the Station number.
3. Select '*Transfer*' or replace the handset, to transfer the call.



**Note**

You can transfer a call to a station when the Station has answered, while ringing the Station, or while the busy tone is being received from the Station.

To transfer a call to an external number

1. While on the call, press the Scroll Down Key (▼) until '*External transfer*' is displayed.
2. Select '*External transfer*'.
3. Select a free line and dial the number.
4. When the call is answered, press '*Transfer*'.



**Note**

Transferring an external call to an external number ties up two exchange lines. Such calls are called trunk-to-trunk calls.

### To make an external consultation call

While on an external call you can contact another external number to make an enquiry, as follows:

1. Press the Scroll Down Key (▼) until '*External Consultation*' is displayed.
2. Select the '*External Consultation*' option on the display.
3. Select a free line and dial the number.
4. When the call is answered, you can go back and forth between both calls. Select the '*Return and hold*' option on the display each time you want to swap to the other call.

### Deflecting calls

This allows you to divert a call that is ringing at your Operator Console.

To deflect a call ringing at your Station

1. When a call is ringing at your Operator Console, select '*Deflect the call*' on the display.
2. Select a free Station from the Station list presented on the display. The call is presented to the selected Station and stops ringing at your Operator Console. If you attempt to deflect a call to an unavailable Station, it will continue ringing.

To deflect a call ringing at your Station to voicemail

1. When a call is ringing at your Operator Console, select '*Deflect to Voicemail*' on the display.
2. Incoming calls are deflected to the Answering Machine. Internal calls, and incoming calls routed using Caller ID routing, are deflected to the Station's voice mail. If the Voicemail is busy, the call continues to ring at your Operator Console.



#### Note

For information on setting up and using a Voice Mailbox, refer to page 72.

### Diverting Calls

To divert all calls from your Station – Station Divert

Before you leave your Station, you can divert all your internal calls and external calls routed using the Caller ID to your Station, to ring at another Station.

Alternatively, you can divert all calls presented to your Station to an external number.

1. From the Idle Menu, press the Scroll Down Key (▼) until '*Station Divert*' is displayed.
2. Select '*Divert All Calls*'.
  - a) Enter an internal number if you want to divert all your calls to another Station.

- b) Enter 0=(Analogue Line 1-2) 8=(VoIP 3-4) followed by an external number if you want to divert calls to an external number.
- c) If your Station is allocated a voice box select '*Divert to Voice Mail*'

3. Select '*Confirm*' (Only appears if the destination is an external number).



**Note**

There is a programming option to divert all internal and external calls or internal calls only to an external number. See Page.110



**WARNING**  
**G**

A Station may misuse the External Divert facility. The default setting is that external divert is not activated for Stations

Once set the Idle Menu will show the option 'Cancel Divert'. To cancel the diversion, select 'Cancel Divert'.



**Note**

Broken tone will be heard at your Station until all call diversion is cancelled.

You cannot divert to a Station that has the 'Do Not Disturb' feature set.

Diverting an external call to an external number ties up two exchange lines. Such calls are called trunk-to-trunk calls.

To divert your calls to you while you are at another Station

The '*Follow Me*' feature allows you to set a call divert to another Station after you have left your Station.

1. From the Operator Console answering the calls, press the Scroll Down Key (⏴) until '*Station Divert*' is displayed.
2. Select '*Follow me*'. You will be prompted to enter your Station number and your Station Lock Password. (Default Password is 123). Once these details are entered, the diversion is activated.



**Note**

Once set the Idle Menu on your own Station will show the option 'Cancel Divert'. To cancel the 'Follow Me' diversion, select 'Cancel Divert'.



**Note**

'Follow Me' will not divert a call from a station, if the call has been previously diverted by 'Follow Me' to that Station.

To divert calls when your Station is busy

The '*Divert when busy*' feature allows you to divert all your calls to ring at another Station if your Station is busy (engaged). Alternatively, you can

divert all external calls to an external number if your Station is busy. In this case, internal calls will not be diverted but will be given the busy tone.

1. From the Idle Menu, press the Scroll Down Key (▼) until '*Station Divert*' is displayed.
2. Select '*Divert when busy*'.
  - a) Enter an internal number if you want to divert all your calls to another Station.
  - b) Enter 0 or 8 followed by an external number if you want to divert calls to an external number. A programming option is available to allow both internal and external calls (or external calls only) to be diverted externally.
3. Select '*Confirm*' to accept the number.

To set a '*Divert when busy*' from a standard phone the code is '733' followed by the destination number.



A station may misuse the External Divert facility. The default setting is that no Station is allowed to set the facility.



When '*Divert when busy*' is enabled on a station to divert to an external number, external incoming calls will divert but internal calls will not.

Diverting an external call to an external number ties up two exchange lines. Such calls are called trunk-to-trunk calls.

To cancel a Divert when busy diversion

1. From the Idle Menu, select '*Station Divert*'.
2. Select '*Divert when busy*'. The diversion is automatically cancelled and the display returns to the Idle Menu.

To divert calls when your Station does not answer

The '*Divert On No Answer*' allow you to divert all your calls to ring at another Station if there is no answer at your Station after four rings. Alternatively, you can divert all external calls to an external number if your Station has not answered after four rings. In this case, internal calls will not be diverted and will continue to ring your Station.

1. From the Idle Menu, press the Scroll Down Key (▼) until '*Station Divert*' is displayed.
2. Select '*Divert on no answer*'.
  - a) Enter an internal number if you want to divert all your calls to another Station.
  - b) Enter 0=Analogue lines or 8=VoIP line followed by an external number if you want to divert external calls to an external number.
3. Press '*Confirm*' to accept the number.



It is possible that a station may misuse the external divert facility. The default setting is that no Station is allowed to set the facility.



If 'Divert On No Answer' is enabled on a station to divert to an external number, external incoming calls will divert, but internal calls will not. Diverting an external call to an external number ties up two exchange lines. Such calls are called trunk-to-trunk calls

To cancel a Divert on No Answer diversion

1. From the Idle Menu, press the Scroll Down Key (⬇️) until '*Station Divert*' is displayed.
2. Select '*Divert on no answer*'. The diversion is automatically cancelled and the display returns to the Idle Menu.

#### Incoming Call Divert

This feature allows any Station to set a diversion for an exchange line or VoIP Line.

Setting an Incoming Call divert from a Operator Console

1. From the Idle Menu, press the Scroll Down Key (⬇️) until '*Incoming call diverts*' is displayed.
2. Select the line or VoIP Line. (The diversion may be programmed for more than one line).
3. Select the options required and enter the destination number.
4. Select '*Divert to Answering Machine*' to divert the calls to the Answering machine.



It is possible that a station may misuse the External Divert facility.

Cancel Incoming Call divert from Operator Console

If '*All Call Divert*' is set for an '*Incoming Call Divert*' the Operator Consoles ringing for calls on the line have the prompt '*Cancel i/c call divert*' on their displays.

1. Press the '*Cancel i/c call divert*' option.
2. The display will show the lines. Select the required line.
3. Select the divert type to be cancelled.

#### Conference Calls

This feature allows you to hold a three-way conversation between three Stations, or between two Stations and an exchange line, or between two exchange lines and a station.

#### To hold an Internal Conference

1. When on a call, press the Scroll Down Key (▼) until '*Internal Conference*' is displayed.
2. Select '*Internal conference*'.
3. Select the Station to be included in the conference.
4. When the Station answers, select '*Conference*' on the display.

#### To hold an External Conference

1. When on a call, press the Scroll Down Key (▼) until '*External Conference*' is displayed.
2. Select '*External conference*'.
3. Select a free line and dial the external number.
4. When the call is answered, select '*Conference*' on the display.



#### Note

An external conference call ties up two exchange lines.

At the start of a conference call a single tone is presented to all parties to indicate that the call is a conference call.

#### Using your Operator Console with a headset

1. Your Operator Console is equipped with a socket for a headset. Plug the headset into the socket and programme the phone for headset operation.
2. Press the '*Program*' key on the phone and scroll down to '*Headset Mode*'.
3. Turn Headset mode on.
4. The phone is now programmed to operate with a headset.
5. '*Turn Headset Off*' is displayed to allow you to revert to handset mode.
6. To make an internal or external call when using a headset press the Hands-free Key and dial your calls in the normal way.
7. To clear down (end) a call when using headset press the Hands-free Key.
8. To answer a call when using a headset select the '*Answer the call*' option on the display, or press the Hands-free Key.

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 Using a Standard or DECT Cordless Telephone
 

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## Feature Access Code List

You may access the range of Vox PBX features with a standard or cordless telephone. To use a feature, dial the appropriate code from the list below. (In the table, **R** means the Recall/INT Key).

If your telephone is equipped with memory keys you may programme feature codes onto the keys - refer to your telephone user guide for instructions.

Feature	Code	Feature	Code
Answering machine on/off	737	Incoming Call Divert when busy	793
Alarm Call	718	Incoming Call Divert on No Answer	794
Alarm Call cancel	718*	Internal Call Waiting	R8
Call Pick-up	727	Night Service	738
Call Waiting Tone Protection	725 (R725)		
Conference	R3	Page – Operator Consoles	716
Divert All	732 xx	Park	R712
Divert when busy	733 xx	Pick up parked call	712
Divert on No Answer	734 xx	Redial	77
Do Not Disturb – set/cancel (Not available to Station 20,)	736	Redial VoIP call over standard line	R77
Stations - Wired	20-23	Reset telephone	739
Stations - Cordless	31-34	Return to call placed on system hold	719
Station 20	9	Return and hold in Two Call handling	R2
Station Lock – change code	714 xxx	Return and release in Two Call handling	R1
Station Lock - lock/unlock	713 xxx	Ring Back	R5
External Call Hold	R	Saved Number Redial	781-785
Follow Me	735 (Password) xx	Speed Dial – accessing personal numbers	74(01 - 30)
Forward Recall	R722	Speed Dial – accessing system numbers	400-499
Line Access – Analogue lines	0	Speed Dial – programming personal numbers	75(01 - 30)
Line Access – VoIP Lines	8	System voicemail box on/off	737
Incoming Call Divert All Calls	792	Voice call (to page an individual Operator Console)	715
		Voice Mail Access	*
		Voice Mailbox number	710

## Making External Line Calls

There are two modes of operation available for making external calls. The normal mode, which is the default, a line access digit (0 for Analogue Lines 1, 2, or 8 for a VoIP lines 3-4) is dialled to select a line. If Automatic Line selection is programmed you do not enter the line access code. To programme Automatic Line selection from the Operator Console see page 153 and for programming from the Web Interface see page 106

To make an external call in normal mode

1. Lift the handset, or use a Hands-free Key, if available on your telephone.

2. Obtain a free line in one of the following ways:
3. Dial 0 to select Line 1, Line 2. (Analogue Lines) or 8 to select Line 3-4
4. Dial the number you require.

To make an external call in Automatic Line selection mode

1. Lift the handset or use a Hands-free Key if available on your telephone.
2. Dial the number.
3. The system automatically selects a free line and the number is dialled.

To make an internal call in normal mode

1. Lift the handset or use a Hands-free Key if available on your telephone.
2. Dial the desired Station number (20 -23 or 31-34).

To make an Internal call in Automatic Line selection mode

1. Lift the handset or use a hands-free key if available on your telephone.
2. Press hook flash and dial the desired Station number (20-23 or 31-34). On a DECT phone press *Recall* and dial the Station number

To answer a call

1. When the telephone rings lift the handset or use a Hands-free Key if available on your telephone.

Holding & Transfer Calls

To hold and return to a call

1. Press the Recall Key (R) on your telephone.

If you hang up you can continue to use your telephone. The held call will call back within ninety seconds provided your telephone is idle. If you are busy on the telephone after the ninety seconds the call will ring when the phone becomes idle. You can return to the call before it rings back by going off hook and dialling 719.

*To Hold and return to a call without replacing the handset*

1. To hold the call, place the call on hold by pressing the Recall Key(R)
2. To return to the call press the Recall key again to return to the call

To transfer a call

1. Press the Recall/INT Key (R) on your telephone.
2. Dial the Station number and replace the handset.

To make an external consultation call

While on an external call you can contact another Station to make an enquiry, as follows:

1. While on an external call, press the Recall/INT Key (R) on your telephone.
2. Dial the Station number.

3. To return to the external call and place the Station on hold, press R and dial 2.
4. To return to the external call and release the Station, press R and wait, or press R and dial 1.

To transfer the external call to the Station replaces the handset when talking to the Station with the external call on hold.

#### Station Divert

##### Divert all calls

1. Lift handset or use hands-free if available.
2. Key 732
3. Key the Station number, or
4. Key the external phone number (including line access code 0 or 8)
5. Followed by #.

##### Cancel divert all calls

1. Lift handset or use hands-free if available.
2. Key 732.

##### Divert calls when your telephone is busy

1. Lift handset or use hands-free if available
2. Key 733
3. Key the Station number, or
4. Key the external number, (including line access code 0 or 8)
5. Followed by #.

##### Cancel divert a call on busy

1. Lift handset or use hands-free if available
2. Key 733.

##### Divert calls when your telephone is not answered (after four rings)

1. Lift handset or use hands-free if available
2. Key 734
3. Key the Station number, or
4. Key the external phone number (including line access code, e.g. 0) followed by #.

##### Cancel a divert a call on no answer

1. Lift handset or use hands-free if available
2. Key 734.

#### Incoming Call Divert

##### Divert all calls

1. Lift handset or use hands-free if available.
2. Key 792 followed by the line number (1-3)
3. Key the Station number, or Key the external phone number (including line access code 0) followed by #.

#### Cancel Incoming call divert all calls

1. Lift handset or use hands-free if available.
2. Key 792 followed by the line number (1-6).

#### Incoming Call Divert when busy

1. Lift handset or use hands-free if available
2. Key 793 followed by the line number (1-6)
3. Key the Station number, or Key the external number, (including line access code 0 Analogue or 8 VoIP line) followed by #.

#### Cancel incoming call Divert when busy

1. Lift handset or use hands-free if available
2. Key 793 followed by the line number (1-6).

#### Divert calls when an incoming call is not answered (after four rings)

1. Lift handset or use hands-free if available
2. Key 794 followed by the line number (1-6)
3. Key the Station number, or
4. Key the external phone number (including line access code, e.g. 0 or 8) followed by #.

#### Cancel incoming call divert on no answer

1. Lift handset or use hands-free if available
2. Key 794 followed by the line number (1-6).

#### Programming and dialling speed dial numbers

If you have a standard telephone, you can programme up to 10 Personal Speed Dial numbers.

#### To programme a personal speed dial number

1. Lift the handset, or press the Hands-free Key, if available.
2. Dial the code 75.
3. Enter the location (01 - 30) where you want to store the number.
4. Dial the number you want to store.
5. Go on-hook.



The line access codes 'e.g. 0' is not required

#### To dial a personal speed dial number

1. Lift the handset, or press the Hands-free Key, if available.
2. Dial the code 74.
3. Dial the location (01 - 30) of the number you wish to access. The number is automatically dialled.

#### To dial a system speed dial number

Dial the location code (401 – 499) of the number you wish to access. The number is automatically dialled.

## VoiceMail

Turn on your voicemail

1. When you are allocated a voice mailbox *'Divert on no answer'* is automatically set to your voice mailbox.
2. The mailbox code is 710.
3. To divert all your calls to your voicemail Key 732 followed by 710.
4. To divert when busy to your voicemail Key 733 followed by 710.
5. To divert on no answer to your voicemail Key 734 followed by 710.

## Additional Call Features

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### Redial

Use the Redial feature to redial the external number you most recently dialled. A line is selected automatically.

To redial the last external number dialled: -

1. From the Idle Menu, select *'Redial last number'*.
2. From a standard telephone dial the code 77.

### Saved Number Redial

In addition to the Last external number the previous 5 numbers dialled are also stored and may be redialled.

1. From the Idle Menu, select *'Saved Numbers'*.
2. Select the number to be dialled.
3. From a standard telephone the codes are 781 – 785 for saved numbers 2 - 6. The first saved number is the Last Number Redial code, 77.

### Call Pick-up

This feature allows the user to pick up any call, ringing at another Station.

These calls include: -

- Internal calls.
- External calls.
- Caller ID Routed calls.
- Incoming ringing calls routed to a single Station.

To pick up a call ringing at another Station: -

1. From the Idle Menu, select the *'Call Pick-Up'* option on the display.
2. From a standard telephone, dial the code 727.

### Ring Back

If the Station you call is busy, use the Ring Back feature to have the Station call you back when it becomes free. If you dial for an analogue line and no lines are free, use the Ring Back feature to receive an exchange line as soon as one is available.

To have a busy Station call you back when it becomes free

1. When you have called a busy Station, select *'Ring Back'* on the display.
2. When the Station becomes free, your Station will ring.
3. Select *'Answer the Call'* or pick up the handset to ring the Station.
4. From a standard telephone, dial R5 when you have called a busy Station.

To receive a analogue line as soon as one is available

1. When you have dialled for a line and none are free, select *'Ring back'* on the display.
2. When the line becomes free, your Station will ring.
3. Select *'Answer the Call'* or pick up the handset to select the line.
4. From a standard telephone dial R5 when you have dialled for a line and no line is available.

Camp on Busy

*'Camp on Busy'* allows you to have your Station call a busy Station as soon as it becomes free.

When you call a station and get a busy (engaged) tone, stay off-hook and when the called Station becomes free it will start ringing.

Call Waiting from another Station

If you get a busy tone, when you call a station, you can alert the busy Station that you wish to contact provided the Station is not protected against receiving Call Waiting tones. See on page 156. An audible tone will sound on the called Station, and the message *'Call wait. – Ext xx'* will appear on its display. Options to accept the call are offered on the display.

To present a busy Station with a Call Waiting tone

1. Select *'Waiting tone'* on the display when a busy tone is returned from a station.
2. From a standard telephone, the code is R8.

To accept a waiting call

If another Station presents you with call waiting, this will be indicated on your display and you will hear the call waiting tone, provided your Station is not protected against call waiting tones.

Select one of the options presented on the display.



**Note**

If you ignore the Call Waiting tone for a short period the Call Waiting offer is rejected and the calling telephone is presented with the message *'Call Waiting Rejected'*.

Call Waiting from external calls

If you are on a call and your Station is presented with an external call you will hear a call waiting tone provided your Station is not protected against call waiting tones.

The line the call is on will be indicated on your display. If you select the second call, by pressing the line key associated with it, the first call will be automatically released.

Call Park

The Call Park feature allows you to put an external call on special hold by *'parking'* it in the system. Any Station may then pick up the call.

To park and retrieve a call

1. On an Operator Console, select *'Call Park'* on the display.
2. *'Pick up park'* is then displayed on the top line on the display on all Operator Consoles. Select this option to retrieve the parked call.



**Note**

Only one call may be parked in the system. A parked call will recall after three minutes

3. On a standard telephone, the code is R712 to park a call and 712 to retrieve it.

#### Storing and redialling caller numbers

If you subscribe to the Caller ID Service, the network sends the telephone number of callers to the Vox PBX (provided the caller has not elected to restrict the network from presenting their number). The telephone number (or associated name) is displayed on the ringing Operator Consoles. The Caller ID information is also shown if the Station is equipped with a standard phone, which supports the Caller ID service.

Your telephone number will also be presented to persons you call, unless you restrict your number from being presented.

The Caller ID store automatically stores information relating to unanswered calls to the system (answered calls can also be stored). The information stored is the caller telephone number, and the date and time of the call. Information is not stored for calls that withheld or unavailable numbers. When a new record is received and the memory is full the oldest record is discarded from memory.

The Caller ID Store can be allocated as one central store of data on calls received. This store alerts Station 20 (default), by means of a display prompt, that new calls have been stored. You can also programme all 4 Stations to store up to ten numbers each.

#### To examine and redial stored caller numbers

1. Select '*Missed Calls - Personal*' to examine the numbers in the personal store of your Operator Console.
2. Select '*Missed calls - System*' to examine the system store. This can be selected from any Station.
3. You will see the following information:
  - The number and time of the last three calls received are displayed.
  - If the call was answered the display will show an 'A' on the right-hand side of the record. If the call was not answered, the 'A' will not be displayed.
  - The date information for the displayed calls is shown for a few seconds instead of the time.
  - You may scroll through the stored numbers and names by using the Scroll Up (⬆) and Scroll Down Key (⬇) situated below the display.
  - If you press the display Key beside a particular record the system automatically selects a free line and dials the displayed number. If the Station is restricted from dialling, or if there is no line available, you will hear a busy tone.
  - If an 'R' is displayed on the right-hand side of a record, this indicates that the number has been redialled.
  - If an 'A' is displayed on the right-hand side of a record, this indicates that the number has been answered.

#### To set up your system to display caller numbers received on Analogue lines (Caller ID service)

1. For configuration via the web interface, see page 115.

2. For configuration via the Operator Console interface, see page 152.

To associate a caller number with a name, and route its calls to a station

1. For configuration via the web interface, see page 122.
2. For configuration via the Operator Console interface, see page 152.

Caller ID Stores storing all calls or unanswered calls

To program the Caller ID Store, to store all calls, or unanswered calls only.

To set up Stations with an individual Caller ID Store

1. For configuration via the web interface, see page 109.
2. For configuration via the Operator Console interface, see page 153.

Button Hopping

When Button hopping is enabled if you press a second line key while on a call on another line the first call is disconnected. With button hopping off the first call is placed on hold when the second line key is pressed.

Paging

To make an announcement over the speakers of all Operator Consoles

The *'Page All Operator Consoles'* allows any Station to make an announcement over the speakers of all Operator Consoles. Only Operator Consoles that are page-protected will not be paged.

1. From the Idle Menu, press the Scroll Down Key (▼) until *'Page all Operator Consoles'* is displayed.
2. Select *'Page all Operator Consoles'*.
3. Make your announcement.
4. From a standard telephone, the code is 795.

To make a call over the speaker of another Operator Console

The Voice Call feature allows you to speak over the speaker of an individual Operator Console. If the Operator Console is page-protected the voice call will fail.

1. From the Idle Menu, press the Scroll Down Key (▼) until *'Voice call'* is displayed.
2. Select *'Voice call'*.
3. Select the Station you wish to page.
4. Make your announcement.
5. From a standard telephone, the code is 715.

*To answer a Voice Call at your Station*

1. Press the Secrecy Key and speak in Hands-free Mode, or pick up the handset.
2. To protect Operator Consoles against Announcements and Voice Calls
3. For configuration via the web interface, see page 109.
4. For configuration via the Operator Console interface, see page 153.

Least Cost Routing

You may use this feature to have users' calls routed over specific lines, or over a specific Network Provider. To set the feature up you associate input codes with the lines over which calls should be routed and with whatever network codes are necessary to route the call.

For optimum call rates you can choose to route the calls over different lines at various times of the day. Once the facility is activated calls are automatically routed over the selected lines, and the network code is sent to the line before the telephone number.

To route a call using the Least Cost Routing feature

1. Select a line Key, or dial a code for a line (0, 8) and select 'Send digits'.
2. Dial a valid input code.
3. When a line is selected, dial the telephone number you wish to reach.
4. Your call will then be connected with the output code being dialled before the telephone number.
5. Any line Key or line code (0, 8) can be selected above. However, the system will select the line for the call based on the input code.

To set up codes to allow calls to be routed on specific lines or networks

1. For configuration via the web interface, see page 120.
2. For configuration via the Operator Console interface, see page 155.

Least cost Routing activated automatically at set times

1. For configuration via the web interface, see page 122.
2. For configuration via the Operator Console interface, see page 155.

Sending a Forward Recall while on call

A Forward Recall signal may be required if you are using certain network services on standard Analogue exchange lines, or if your Vox PBX is connected to another telephone system (PABX) via one of the line interfaces.

The Forward Recall feature allows you to send a hold signal forward on the line to the exchange or PABX. To send a hold signal, you must be on a call or have dialled at least one digit of the number you are calling.

To send a Forward Recall signal to an exchange or a PABX

1. From a Operator Console, select 'Forward recall' on the display.
2. From a standard telephone, the code is R722.

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## Station Set-Up options

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### Do Not Disturb

If your Station is set to 'Do Not Disturb', anyone trying to call you will receive a busy (engaged) tone. If the person trying to contact you has an Operator Console, 'Do Not Disturb Enabled' will appear on its display. 'Call Back' and 'Alarm call' are the only incoming ringing that will be accepted when this feature is set.

To set Do Not Disturb on your Station

1. From the Idle Menu, press the Scroll Down Key (▼) until 'Do Not Disturb' is displayed.
2. Select 'Do Not Disturb'.
3. 'Do Not Disturb' is unavailable on Station 20.

To cancel Do Not Disturb on your Station

1. From the Idle Menu, Select 'Cancel do-not-disturb'. This option is displayed only when the feature is set.
2. When 'Do Not Disturb' is set, you will hear a broken dial tone when you lift the handset.

3. From a standard telephone, the code 736 is used to set and cancel this feature.

### Station Lock

This feature allows you to lock your Station to prevent unauthorised users from making external calls. You use a Lock Password to lock, unlock, or to make calls from a locked Station. The default Lock Password for all Stations is 123, but each Station may change its password. Station Lock Passwords can be examined from the Programming Station.

#### To lock your Station

1. From the Idle Menu, Press the Scroll Down Key (▼) until 'Station Lock' is displayed.
2. Select 'Station Lock'.
3. Select 'Lock the Station'.
4. Dial your 3-digit Lock Password. (The default Lock Password is 123).
5. Press the Hands-free Key to finish programming.
6. From a standard telephone, the code is 713.

#### To unlock your Station

1. Select 'Unlock the Station'. This display option only appears when the Station is locked.
2. Dial your 3-digit Lock Password. (The default Lock Password is 123).
3. Press the Hands-free Key to finish programming.
4. From a standard telephone, the code is 713.

#### To make a call from a locked Station

1. Press a line Key, or dial the code for a line (0 or 8 analogue line), as if to select a line.
2. Dial your 3-digit Lock Password. (The default Lock Password is 123).
3. A line is selected.
4. Dial the number you require.

#### To change your Station Lock Password

1. From the Idle Menu, press the Scroll Down Key (▼) until 'Station Lock' is displayed.
2. Select 'Station Lock'.
3. Select 'Change the lock code'.
4. Dial the existing 3-digit Lock Password. The default password is 123.
5. Dial your new 3-digit Lock Password. The new Lock Password will not be displayed when entered.
6. Press the Hands-free Key to finish programming.
7. From a standard telephone, the code is 714.

#### To examine Station Lock Passwords

1. For configuration via the web interface, see page 110.
2. For configuration via the Operator Console interface, see page 155.

### Alarm call

This feature enables you to set your Station to ring at a given time.

#### To set your Station to give you a Alarm call at a given time

1. From the Idle Menu, press the Scroll Down Key (▼) until 'Alarm call' is displayed.
2. Select 'Alarm call'.
3. Enter the time in the 24-hour clock format, for example, 0930 for 9.30 am.

4. At the programmed time the Station will give ten rings. If not answered, it will ring twice more at two-minute intervals and will then cancel.
5. Alarm calls must be set daily and therefore cannot be set more than 24hrs ahead.

#### To review and cancel a Alarm call

1. To review an Alarm call, select '*Alarm call*' and the time set will be displayed. Select '*Confirm*' to retain the programmed time. If you wish to change the time, select '*Change*' and enter a new time.
2. To cancel the alarm call, select '*Change*' followed by '*Confirm*'.
3. From a standard telephone, the code 718 is used to set an Alarm call, and the code 718\* is used to cancel it. A standard telephone cannot query the Alarm call time.

#### Station Reset

You can reset your Station to cancel all the following features if they have been set:

- Do Not Disturb
- Call Divert
- Call Back
- Display Messaging
- Alarm call

#### To reset your Operator Console

1. From the Idle Menu, press the Scroll Down Key (⏴) to scroll downwards until '*Reset the telephone*' is displayed.
2. Select '*Reset the telephone*'. The display shows '*Station reset*' momentarily before returning to the Idle Menu.
3. If you are using a standard telephone, dial 739 and wait for the acknowledgement tone (internal dial tone).

### Incoming Call Handling

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#### General

Calls can be presented to the Vox PBX on analogue lines and VoIP lines. Calls can be programmed to ring any number of Stations. For configuration via the web interface, see page 103.

For configuration via the Operator Console interface, see page 156.

When calls are received on a line all free-programmed Stations are rung.



#### Note

The forward on no answer timer is set at 18 seconds in default. This timer can be changed. See Page 118 to change it via the Management interface and Page 175 to change it via the programming Operator Console

All Incoming Call Divert Options set for the line are acted on.



#### Note

Any Diversions set on a station are ignored for incoming calls unless the calls are routed to the Station by Caller ID programming or a caller has dialled through the Answering Machine or a voice mail box

### Restricting Outgoing Calls

This feature lets you decide which lines each Station can access for outgoing calls. By default, all Stations have access to all lines.

1. For configuration via the web interface, see page 123.
2. For configuration via the Operator Console interface, see page 157.

### Day/Night Service

The 'Day Service' / 'Night Service' feature allows you to change the Stations which ring on incoming calls, change the Class of Service at each Station, and change the voice greeting heard by callers (if you have voicemail installed). These changes can take place automatically, at pre-programmed times daily, or can be invoked manually. Furthermore, the system can be programmed to remain in 'Night Service' over the weekend.

1. For configuration via the web interface, see page 104.
2. For configuration via the Operator Console interface, see page 158.

### System Time/Date

1. For configuration via the web interface, see page 106.
2. For configuration via the Operator Console interface, see page 159.

### Music on Hold Options

When an external call is placed on hold, you can choose between supplying music, a tone, or silence to the caller. The music source can be internal, in which case it is integrated into the system and cannot be changed, or external, in which case an external source must be connected to your system.

1. For configuration via the web interface, see page 104.
2. For configuration via the Operator Console interface, see page 160.

### Hotline

Stations can be programmed so that they automatically dial a number when they go off-hook. The number dialled can be a station or an external number.

1. For configuration via the web interface, see page 110.
2. For configuration via the Operator Console interface, see page 160.

### Assigning Station Names

You may assign names to Stations. When a station receives an internal call, its display will show the calling Station name in the place of the calling Station number.

1. For configuration via the web interface, see page 1.
2. For configuration via the Operator Console interface, see page 161.

### Class of Service

Each Station may be programmed for a Class of Service. This determines the type of call the Station is allowed to dial. Four tables, which can be programmed with up to fifty codes, are used to implement six Classes of Service:

1. For configuration via the web interface, see page 116.
2. For configuration via the Operator Console interface, see page 162.

### Using Voicemail

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Every Station can be allocated a voice mailbox. An Answering Machine facility is also available.

## Voicemail

### To allocate a Voice Mailbox to a station

1. For configuration via the web interface, see page 109.
2. For configuration via the Operator Console interface, see page 165.
3. To turn on your Voice Mailbox
4. For configuration via the web interface, see page 109.
5. For configuration via the Operator Console interface, see page 166.

To access your Voice Mailbox

Press  **MESSAGE** Key.

1. Select 'Voice Messaging'.
2. Enter your Station number, (which is your Voice Mailbox number).
3. Enter your Voicemail Password, (1111 in default), followed by #.
4. You are presented with the Voice Messaging Control Menu. The options displayed are 'Play', 'Erase all messages', 'Greeting', 'Change Password', 'Monitor' and 'Cancel'.

### To retrieve messages left in your Voice Mailbox

If new voice messages have been left in your Voice Mailbox, the Message Waiting Light, located on the top right-hand corner of your Operator Console, will be on. In addition, the top line on your Operator Console display will show 'New voice messages'.

1. Select 'New voice messages'.
2. Enter your Station number.
3. Enter your Voicemail Password, which is 1111 by default, followed by #.
4. Select 'Play'. The new messages are played.

### Forward a message from a Operator Console Station

A user can forward a message from their voice box to another voice box.

1. While you are listening to the message select the 'Forward message' option.
2. Select the Station to forward to from the menu on the phone
3. In the forwarding voice box the forwarded message is considered as a message that has been heard by the user.

### To automatically call the sender of a message

The 'Return call' feature allows a user to initiate a call to the sender of a message in their voice box.

1. When you have listened to a message in the Voicemail select the 'Return Call' option.
2. The system initiates a call to that number.



#### Note

To return calls to external callers the Caller ID service must be available on the lines.

### To record your own Voice Mailbox greeting:

Each Station, which has been allocated a Voice Mailbox, can record its own greeting. This will be relayed to callers who are answered by the Voice Mailbox.

1. At your Station, press  **MESSAGE** Key.

2. Select 'Voice Messaging'.
  3. Enter your Station number when prompted.
  4. Enter your Voicemail Password, (1111 by default), followed by #.
  5. Select 'Greeting'.
  6. Select 'Record greeting'
  7. Speak to record a personalised greeting when prompted.
8. Press 'Confirm'.
9. Press the Hands-free Key to finish programming

#### To replay the Voice Mailbox greeting

1. At your Station, press  MESSAGE Key.
2. Select 'Voice Messaging'.
3. Enter your Station number when prompted.
4. Enter your Voicemail Password, (1111 by default), followed by #.
5. Select 'Greeting'.
6. Select 'Replay greeting'

7. The greeting will then be replayed for you.

#### Transferring calls to Voice Boxes

You can transfer calls to any Voice Box without calling the Station.

1. When you are on a call select '*Transfer to Voice Mail*'
2. The menu is updated showing those Stations equipped with voice boxes. Select the Station.
3. Select '*Transfer*' or replace the handset.
4. For standard telephones the user should press the recall key and key 710 followed by the Station number. Replace the handset.

#### To retrieve your Voice Mailbox messages remotely

In order to access your Voice Mailbox remotely you must have your calls diverted to your Voice Mailbox, and have either a line programmed to ring directly at your Station.

You can also have your call transferred to your voice Mailbox.

1. If a line is programmed to ring directly at your Station and your Voice Mailbox is turned on, dial the line number.
2. Call in on a line, which you know will be answered, and have the call transferred to your Mailbox.
3. When answered by your voicemail greeting, access your Voice Mailbox by dialling the code 711, followed by your Station number, Voicemail Password and #.
4. Dial the following numbers to access your messages while listening to the greeting:

Dial 1	Playback commences at the first message
Dial 2	For more information.
Dial 41	Turn remote notification on
Dial 42	Turn remote notification off
Dial 43	To program remote notification
Dial 91	Change the outgoing greeting
Dial 92	Check the outgoing greeting
Dial 93	Delete the outgoing greeting
Dial 6	Erase all messages
Dial 0	Change Voicemail Password

**When playback of messages has commenced**

Dial #	Playback is paused
Dial 2	Save this message and move to the next message
Dial 3	Erase this message and move to the next message
Dial 4	Go back to the start of the message
Dial 5	Go back to the previous message
Dial 6	Erase all messages
Dial 7	Go back ten seconds
Dial 8	Go forward ten seconds / Skip the time stamp
Dial 9	Forward the message to another Station
Dial 0	Return Call. Automatically make a call to the caller who left the message (this feature is not applicable when mailbox is accessed remotely).

**To monitor/pick-up callers as they speak to your Voice Mailbox**

You can operate your voicemail in Voicemail Monitor Mode. In this mode, when calls are diverted to your Voice Mailbox and your Station is free, the call is relayed over the speaker of your Operator Console. If you lift your handset you can intercept the call in which case no message is left in the Voice Mailbox.

1. Press  the **MESSAGE** Key.
2. Select 'Voice Messaging'.
3. Enter your Station number when prompted.
4. Enter your Voicemail Password, (1111 by default), followed by #.
5. Press the Scroll Down Key () until 'Monitor' is displayed.
6. Select 'Monitor'.
7. Select 'Monitor on' or 'Monitor off'.
8. Press the Hands-free Key to finish programming.

**To change your Voicemail Password**

By default, each Station is allocated the same Voicemail Password, (1111). You can enter your own password, which can be up to eight digits long, as follows:

1. Press  the **MESSAGE** Key.
2. Select 'Voice Messaging'.
3. Enter your Station number when prompted.
4. Enter your Voicemail Password, (1111 by default), followed by #.
5. Select 'Change password'.
6. Enter your new Voicemail Password, which can be up to eight digits long.
7. Press 'Confirm'.
8. Press the Hands-free Key to finish programming.

**Note**

If you forget your Voicemail Password, you can check all Station Voicemail Passwords from the Programming Station.

**To check all Voicemail Passwords**

1. For configuration via the web interface, see page 112.

2. For configuration via the Operator Console interface, see page 166.

### Remote Notification of Voice Messages

Stations must be programmed to allow remote notification. See page 123 for programming from the Management Application and Page 168 for programming from the programming Operator Console.

When a user turns remote notification on, a call will be made to an external number programmed by the user to notify them that they have received a new voicemail message in their voicemail box.

The user can set up remote notification to notify them of all new messages or only those marked as priority by callers to their voice mail.

Remote notification can be turned on and off as required.

If the call is to a personal number the user can access their voice mail when they answer the call by entering their voice mail password and pressing #.

#### Setting Up your Remote Notification to a Personal Number

You must first program the personal that the system is to call when a new message is received. Then select whether all messages or messages marked as priority are notified. Finally you turn remote notification on.

#### Programming a Personal Number

1. Press the **MESSAGE** key .
2. Enter your station number (which is your voice mailbox number).
3. Enter your voice mail password (1111 by default) followed by #.
4. Select '*Remote Notification*'.
5. Select '*Programming*'.
6. Select '*Personal Number*'.
7. Select '*Change*'.
8. Enter the number.

From a standard or DECT Handset dial 4311 followed by the number to program a personal number.

#### Notification of All Messages or Priority messages

1. Press the **MESSAGE** key .
2. Enter your station number (which is your voice mailbox number).
3. Enter your voice mail password (1111 by default) followed by #.
4. Select '*Remote Notification*'.
5. Select '*Programming*'.
6. Select either '*Priority Messages Only*' or '*All Messages*'.

From a standard or cordless phone dial 433 for priority messages, and 434 for all messages.

### Turning Remote Notification on and off

1. Press the **MESSAGE** key .
2. Enter your station number (which is your voice mailbox number).
3. Enter your voice mail password (1111 by default) followed by #.
4. Select '*Remote Notification*'.
5. Turn remote notification on or off as required.

From a standard or cordless phone dial 41 to turn remote notification on, and dial 42 to turn off.

### To operate voicemail from a standard telephone

Standard telephones can also be allocated Voice Mailboxes. When a Voice box is allocated the 'Divert On No Answer' is automatically set for the Station.

You can set 'Divert All Calls' or 'Divert when busy' to the Mailbox as well by setting the Divert to 710.

- o 732 for 'Divert all calls'
- o 733 for 'Divert when busy'
- o 734 for 'Divert on no answer'

Your personal telephone will ring if any messages have been left in your own Mailbox or the Answering Machine. If your Station is equipped with a phone that can detect Caller ID information, an indication will be given on the phone that you have new voice messages. If your phone does not have Caller ID capability you should manually access your Voice Mailbox for messages.

1. To access the Voice Mailbox, dial the code 711, followed by your Station number, Voicemail Password and #
2. Dial the following numbers to access your messages

#### ***When listening to the Greeting:***

- o Dial **1** Playback commences at the first message
- o Dial **2** For more information.
- o Dial **41** Turn remote notifications on.
- o Dial **42** Turn remote notifications off.
- o Dial **43** To program remote notification.
- o Dial **91** Change the outgoing greeting
- o Dial **92** Check the outgoing greeting
- o Dial **93** Delete the outgoing greeting
- o Dial **6** Erase all messages
- o Dial **0** Change Voicemail Password

#### **When playback of messages has commenced**

- o Dial **#** Playback is paused
- o Dial **2** Save this message and move to the next message
- o Dial **3** Erase this message and move to the next message
- o Dial **4** Go back to the start of the message
- o Dial **5** Go back to the previous message
- o Dial **6** Erase all messages

- Dial **7**      Go back ten seconds
- Dial **8**      Go forward ten seconds / Skip the time stamp
- Dial **9**      Forward the message to another Station
- Dial **0**      Return Call. Automatically make a call to the caller who left the message.

### Answering Machine

When the '*Answering Machine*' prompt on the Operator Console connected to Station 20 is selected all incoming calls on all the lines are answered by the answering machine after two rings.

You can select which lines are to be answered by the answering machine when it is turned on. It can be used on both analogue lines and VoIP Lines.

You can change the timer so that the calls are answered immediately or ring for a longer period.

Station 20 controls the answering machine. Station 20 can customise the greeting. You can turn the Answering Machine service on and off at any time at Station 20 and its operation is independent of 'Night Service'. You can use it if you are not answering calls at lunch or at night, or simply want to record messages from callers. If desired, you can have this feature on permanently, so that calls, which are not answered for a programmable period, are answered by the Answering machine. The greeting may ask callers to dial a station number, in which case the call will be transferred through to that Station.

### To turn the Answering Machine on and off

1. Select '*Answering Machine*' from the idle display at Station 20. The prompt '*Answering Machine*' is displayed on the top line of the display'
2. To turn it off select '*Answering Machine*' again.
3. For configuration via the web interface, see page 104.
4. For configuration via the Operator Console interface, see page 167.

### To programme lines to be answered by the Answering machine

1. For configuration via the web interface, see page 114.
2. For configuration via the Operator Console interface, see page 167.

### To retrieve messages left on the Answering machine

Messages stored on the Answering machine can be retrieved from any Station. When messages have been left, the Message Waiting light on Station 20 will be lit and the 'Ans/machine messages' will appear on the top line of the display.

1. Select 'Ans/machine messages'.
2. Enter 0 as the Station number.
3. Enter the Voicemail Password and select the option you require.
4. Station 20 can have its own Voice Mailbox, accessed by using Station number 20. The Answering machine has its own Mailbox, accessed by using Station number 0. Both can have their own Voicemail Passwords.

### To change the greeting on the Answering machine

1. Press  the **MESSAGE** Key.
2. Select 'Voice Messaging'.
3. Enter 0 as the Station number, (which is your Voice Mailbox number).
4. Enter your Voicemail Password, (1111 by default), followed by #.
5. You are presented with the Voice Messaging Control Menu. The options displayed are 'Play', 'Erase all messages', 'Greeting', 'Change Password', 'Monitor' and 'Cancel'.
6. Select 'Greeting'.
7. Select 'Record greeting'
8. Speak to record a personalised greeting when prompted.
9. Press 'Confirm'.
10. Press the Hands-free Key to finish programming.

### To set the time a call will ring before the Answering machine answers

For configuration via the Operator Console interface, see page 167.

#### External Diversion Options

This allows you to decide if external callers or external and internal callers to your Station are diverted externally if you have set an external divert. It also allows Stations to be prohibited from activating an external diversion.

1. For configuration via the web interface, see page 110.



#### Note

The Divert on no answer timer is set at 18 seconds in default. This timer can be changed. See Page 118 for changing it via the Management interface and Page 176 to change it via the programming Operator Console

2. For configuration via the Operator Console interface, see page 169.

---

### Programming Additional System Options

#### Using a Doorphone

You can equip your Vox PBX with a doorphone. The doorphone has a button which, when pressed, rings at programmed stations. It has a microphone and speaker for communication. With a doorphone fitted in your reception area, anyone visiting your premises can call when they arrive and you can speak to them before you let them in.

Your Vox PBX also features a doorstrike relay output, which can be used to operate a doorstrike mechanism, to allow you open the door from your station. You must purchase the doorstrike mechanism yourself and arrange for a qualified electrician to install it.

For configuration via the web interface, see page 105.

For configuration via the Operator Console interface, see page 169.

### **Answering a doorphone call**

You can answer a doorphone call if your station is programmed to ring when someone calls at the doorphone.

To answer a doorphone call, lift the handset and speak. There is no code to dial.

A station cannot make a call to a doorphone

### **To open a door using the Doorstrike**

When your station is ringing with a doorphone call, and you have a doorstrike mechanism installed, the option '*Open the door*' will be displayed.

Select '*Open the Door*'. The doorstrike relay will operate and the call to the doorphone will be disconnected.

From a standard telephone, the code is Forward Recall731 if you are on a call and 731 if you are not.

## 6 Router Configuration using the web interface

### ADSL Modem

---

In some cases it is necessary to manually set the ADSL settings to work in PPPoE mode.

1. To examine the current settings select Router Configuration on the left hand side menu.

#### Router Configuration

From this page you have access to the settings for the most commonly used Router Configuration options on your system.

[Tell me more about Router Configuration...](#)

To setup access to the Internet if you are using the internal ADSL Modem:

- [ADSL Modem](#)

To configure the router if you are connected to a LAN or if you are using an external router or external ADSL modem:

- [WAN/DMZ Port](#)

Click on ADSL Modem –

#### ADSL Modem

The ADSL Modem settings control how VOX PBX connects to the Internet.  
[Tell me more about the ADSL Modem settings...](#)

ADSL Modem is currently configured as follows:

Internet Access is provided by DSL (PPPoE) with a VPI of 8 and a VCI of 35.  
The PPP Username is .  
The PPP Password is **not set**.

[Change the ADSL Modem settings here...](#)

Your current MAC spoofing configuration is as follows:

MAC spoofing is **disabled**.  
[Enable or disable MAC Spoofing here...](#)

The ADSL Modem will connect using one of a number of different ADSL operating modes.

[Tell me more about the different ADSL Modem operating modes...](#)

The current ADSL mode is set as **Multimode**. This mode can be changed manually if required to support different DSL connection types.

[Change the ADSL Modem operating mode here...](#)

This page shows the current ADSL Modem settings.

2. To change the ADSL modem to work in PPPoE mode select *Change the ADSL modem settings here ....*

The following page is displayed

### ADSL Modem: Types of Access

There are five types of Internet Access available. Choose a type that is suitable for your Internet connection from the options below:

[Tell me more about ADSL Modem settings...](#)

PPPoA - use this if you have a PPPoA DSL connection

PPPoE - use this if you have a PPPoE DSL connection

DHCP - use this if you have a DHCP DSL connection

Manual - use this to configure your connection's gateway and DNS servers directly

3. Select PPPoE to change the ADSL mode of operation.

The following screen is displayed

### ADSL Modem: PPPoA

In order to use a PPPoA connection to the Internet, you must supply a username and password to logon to your Internet Service Provider (ISP). Your ISP should provide you with a username and password when you sign up for their service.

[Tell me more about the PPP username and password...](#)

PPP Username

PPP Password

Retype the PPP Password

4. Enter the user name and password and click *Next>*

5. Enter the VPI (8) and VCI (35) settings and click *Next>*

### Internet Access: Manual VPI and VCI Setup

VOX PBX needs to know which VPI and VCI it should use for Internet Access. Enter the VPI and VCI values that your ISP has provided in the boxes below:

[Tell me more about choosing VPI and VCI values...](#)

VPI

VCI

Confirm the changes.

As you have configured PPPoE Internet access, notice that a configuration option called *MAC Spoofing* appears on this page:

### ADSL Modem

The ADSL Modem settings control how VOX PBX connects to the Internet.  
[Tell me more about the ADSL Modem settings...](#)

ADSL Modem is currently configured as follows:

Internet Access is provided by **DSL (PPPoE)** with a VPI of **8** and a VCI of **35**.  
The PPP Username is **eircom**.  
The PPP Password is **set**.

[Change the ADSL Modem settings here...](#)

Your current MAC spoofing configuration is as follows:

MAC spoofing is **disabled**.  
[Enable or disable MAC Spoofing here...](#)

The ADSL Modem will connect using one of a number of different ADSL operating modes.  
[Tell me more about the different ADSL Modem operating modes...](#)

The current ADSL mode is set as **Multimode**. This mode can be changed manually if required to support different DSL connection types.

[Change the ADSL Modem operating mode here...](#)

MAC spoofing allows you to set the Media Access Control (MAC) address of your Vox PBX. See *Enabling MAC spoofing* below for more details.

### Enabling MAC spoofing



Note

You should only enable MAC spoofing if Vox Telecom has requested that you do so. In most cases, you will **not** need to do this.

Vox Telecom identifies your modem by its unique hardware number or Media Access Control (MAC) address. If you are using PPPoE Internet access, your Service Provider may want you to *spoof* the identity of a different device. You can spoof the MAC address of another device by replacing your Vox PBX's existing MAC address with another device's address. Your Service Provider will provide you with the replacement MAC address.



Note

You can only configure MAC spoofing if you are using PPPoE Internet access.

If your Service Provider instructs you to change your Vox PBX's default MAC address, follow the instructions below:

1. From the Internet Access page, click 'Enable' or 'disable MAC Spoofing here...'. The following page is displayed:

#### ADSL Modem: MAC Spoofing

MAC spoofing lets VOX PBX identify itself as another computer or device. You may need to use this depending on your Internet Service Provider.  
[Tell me more about MAC Spoofing...](#)

Select whether you need MAC spoofing enabled from the options below:

Disabled - MAC Spoofing is not used  
 Enabled - MAC Spoofing will be used with a MAC address you provide

2. Select *'Enabled'*
3. Click *'Next>'*. The following page is displayed:

#### ADSL Modem: MAC Spoofing Setup

You must provide a valid MAC address for VOX PBX to spoof.  
 Tell me [more about MAC addresses...](#)  
 MAC address  :  :  :  :  :   
 Next> Cancel

4. The MAC address is made up of six pairs of characters. Each character can be either a number between 0 and 9, or a letter between A and F. For example, *00:20:2b:80:2f:30*. Click in each box and type each character pair of the MAC address provided by your Service Provider.
5. Click *'Next>'*. This page confirms your MAC spoofing settings. If you are happy with these settings: Click *'Confirm Changes'*. The Internet Access page is displayed, and your MAC spoofing configuration is complete.

### Configuring a PPPoA ADSL connection

If your Service Provider's Internet service uses PPPoA the programming follows the same steps as the PPPoE above, selecting PPPoA rather than PPPoE. The only difference is that the MAC spoofing option is not provided in this case

#### Configuring a Manual Internet Connection

If your Service Provider tells you to configure your Internet access manually, they must provide you with the following information:  
 The WAN IP address and subnet mask for your Vox PBX  
 The Internet Gateway address  
 The primary and secondary DNS addresses



**Note**

You should only change the Internet Access details if your Service Provider asks you to, or if you are familiar with network configuration. In most cases, you will not need to make any changes to this configuration.

#### ADSL Modem: Types of Access

There are five types of Internet Access available. Choose a type that is suitable for your Internet connection from the options below:  
 Tell me [more about ADSL Modem settings...](#)  
 PPPoA - use this if you have a PPPoA DSL connection  
 PPPoE - use this if you have a PPPoE DSL connection  
 DHCP - use this if you have a DHCP DSL connection  
 Manual - use this to configure your connection's gateway and DNS servers directly  
 Next> Cancel

1. From the ADSL Modem: Types of Access page Select 'Manual'
2. Click 'Next>'.

**ADSL Modem: Manual Setup**

For manually configured Internet Access, you must provide values for the fields below. Your Internet Service Provider should provide these values.  
[Tell me more about manual Internet Access settings...](#)

VOX PBX WAN address  .  .  .

VOX PBX WAN Subnet Mask  .  .  .

Internet Gateway address  .  .  .

Primary DNS address  .  .  .

Secondary DNS address  .  .  .

The following page is displayed:

3. Click in each box and type the relevant address information provided

**ADSL Modem: Manual Setup**

For manually configured Internet Access, you must provide values for the fields below. Your Internet Service Provider should provide these values.  
[Tell me more about manual Internet Access settings...](#)

VOX PBX WAN address  .  .  .

VOX PBX WAN Subnet Mask  .  .  .

Internet Gateway address  .  .  .

Primary DNS address  .  .  .

Secondary DNS address  .  .  .

by your Service Provider.

4. Click 'Next>'. The following page is displayed:

**ADSL Modem: RFC1483 Mode**

There are four types of RFC1483 connection available. Choose a type that is suitable for your Internet connection from the options below:  
[Tell me more about ADSL Modem settings...](#)

LLC Bridged  
 LLC Routed  
 VCMux Bridged  
 VCMux Routed

Enable Link State Monitoring:

5. Select the Option provided by your Service Provider. The following page is displayed: -

**Internet Access: Manual VPI and VCI Setup**

VOX PBX needs to know which VPI and VCI it should use for Internet Access. Enter the VPI and VCI values that your ISP has provided in the boxes below:

[Tell me more about choosing VPI and VCI values...](#)

VPI

VCI

6. Enter the VPI and VCI values supplied by your Service Provider. Click 'Next>'. The following page is displayed: -

**ADSL Modem: Confirm**

The following values will be used for your manual ADSL Modem settings:

VOX PBX WAN address will be **211.118.103.241**.  
 VOX PBX WAN Subnet Mask will be **255.255.255.0**

The Internet Gateway address will be **211.118.103.241**.

The Primary DNS Server will be **192.168.4.40**.  
 The Secondary DNS Server will be **192.168.5.40**.

The connection mode will be **LLC Bridged**.

The VPI will be **8** and the VCI will be **35**.

Link State Monitoring will be **Enabled**.

To confirm these settings, click on the **Confirm Changes** button below. If you do not wish to apply these settings, click on the **Cancel** button.

This page confirms the address settings that you have manually configured (the values displayed above are for example purposes only). If you are happy with your settings, click 'Confirm Changes'. The *Internet Access* page is displayed and your configuration is complete.

**Changing the ADSL Modem Operating Mode**

The ADSL modem is configured to operate in ADSL2+ mode and will normally connect to the ADSL line using the appropriate mode for the line. There may be cases where it is necessary to change the operation mode manually.

On the ADSL modem page shown above select 'Change the ADSL Modem operating mode'

**ADSL Modem: ADSL Modes**

There exist a number of different ADSL operating modes. To manually change the mode used by the ADSL Modem, choose from the options below:

[Tell me more about ADSL Modem operating modes...](#)

G.Dmt

ADSL2

ADSL2+

T1.413

G.Lite

Multimode

Select the appropriate Operating Mode. The information on the appropriate mode is available from your Service Provider.

**ADSL Modem: ADSL Modes Confirm**

The ADSL Mode will be **ADSL2+**.

To confirm these settings, click on the **Confirm Changes** button below. If you do not wish to apply these settings, click on the **Cancel** button.

The settings are shown. If you are happy with them press *Confirm Changes*.

## Configuring a DHCP ADSL connection – RFC 1483

If your ISP uses a DHCP DSL connection, your ISP may tell you to set unique path and circuit numbers (called VPI and VCI) in order to connect your Vox PBX to the Internet. In most cases, your Vox PBX will use default settings, so you may not need to enter these values.



**Note**

Your ISP will provide you with the VPI/VCI values necessary to setup a DHCP DSL connection.

### ADSL Modem: Types of Access

There are five types of Internet Access available. Choose a type that is suitable for your Internet connection from the options below:

[Tell me more about ADSL Modem settings...](#)

- PPPoA - use this if you have a PPPoA DSL connection
- PPPoE - use this if you have a PPPoE DSL connection
- DHCP - use this if you have a DHCP DSL connection
- Manual - use this to configure your connection's gateway and DNS servers directly

Next> Cancel

From the ADSL Modem: Types of Access page select DHCP , then click *Next>*. The following page is displayed

### ADSL Modem: RFC1483 Mode

There are four types of RFC1483 connection available. Choose a type that is suitable for your Internet connection from the options below:

[Tell me more about ADSL Modem settings...](#)

- LLC Bridged
- LLC Routed
- VCMux Bridged
- VCMux Routed

Enable Link State Monitoring:

Next> Cancel

Select the option as indicated by your ISP. The following page is displayed

### Internet Access: Manual VPI and VCI Setup

VOX PBX needs to know which VPI and VCI it should use for Internet Access. Enter the VPI and VCI values that your ISP has provided in the boxes below:

[Tell me more about choosing VPI and VCI values...](#)

VPI 8

VCI 35

Next> Cancel

Enter the VPI and VCI settings supplied by your ISP and select *Next*. The following page is displayed:

### Configuring a Manual Internet Connection – RFC 1483

If your ISP tells you to configure your Internet access manually, they must provide you with the following information:

- The WAN IP address and subnet mask for your Vox PBX
- The Internet Gateway address
- The primary and secondary DNS addresses



**Note**

You should only change the Internet Access details if your ISP asks you to, or if you are familiar with network configuration. In most cases, you will not need to make any changes to this configuration.

From the ADSL Modem: Types of Access page Select *Manual* then click *Next>*.

1. From the ADSL Modem: Types of Access page Select *Manual* then click *Next>*.

#### ADSL Modem: Types of Access

There are five types of Internet Access available. Choose a type that is suitable for your Internet connection from the options below:

[Tell me more about ADSL Modem settings...](#)

- PPPoA - use this if you have a PPPoA DSL connection
- PPPoE - use this if you have a PPPoE DSL connection
- DHCP - use this if you have a DHCP DSL connection
- Manual - use this to configure your connection's gateway and DNS servers directly

2. The following page is displayed: Click in each box and type the relevant address information provided by your ISP. Click *Next>*.

#### ADSL Modem: Manual Setup

For manually configured Internet Access, you must provide values for the fields below. Your Internet Service Provider should provide these values.

[Tell me more about manual Internet Access settings...](#)

VOX PBX WAN address  .  .  .

VOX PBX WAN Subnet Mask  .  .  .

Internet Gateway address  .  .  .

Primary DNS address  .  .  .

Secondary DNS address  .  .  .

3. The following page is displayed: Select the Option provided by your ISP. The following page is displayed:

**ADSL Modem: RFC1483 Mode**

There are four types of RFC1483 connection available. Choose a type that is suitable for your Internet connection from the options below:

[Tell me more about ADSL Modem settings...](#)

- LLC Bridged  
 LLC Routed  
 VCMux Bridged  
 VCMux Routed

Enable Link State Monitoring:

4. Enter the VPI and VCI values supplied by your ISP

**Internet Access: Manual VPI and VCI Setup**

VOX PBX needs to know which VPI and VCI it should use for Internet Access. Enter the VPI and VCI values that your ISP has provided in the boxes below:

[Tell me more about choosing VPI and VCI values...](#)

VPI

VCI

5. Click Next>. The following page is displayed:

**ADSL Modem: Confirm**

The following values will be used for your manual ADSL Modem settings:

VOX PBX WAN address will be **211.118.103.241**.  
VOX PBX WAN Subnet Mask will be **255.255.255.0**

The Internet Gateway address will be **211.118.103.241**.

The Primary DNS Server will be **192.168.4.40**.  
The Secondary DNS Server will be **192.168.5.40**.

The connection mode will be **LLC Routed**.

The VPI will be **8** and the VCI will be **35**.

Link State Monitoring will be **Enabled**.

To confirm these settings, click on the **Confirm Changes** button below. If you do not wish to apply these settings, click on the **Cancel** button.

6. This page confirms the address settings that you have manually configured (the values displayed above are for example purposes only). If you selected the *Manual* option at step 5, the VPI and VCI values that you entered are also displayed on this page.

If you are happy with your settings, click *Confirm Changes*. The *Internet Access* page is displayed and your configuration is complete.

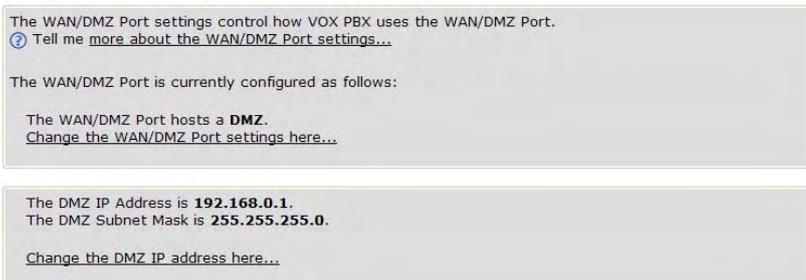
### Connecting to an External ADSL Modem, Cable Modem, LAN, WAN or add a host to the DMZ

---

The WAN/DMZ port can be used to connect to an external ADSL modem, a LAN or a WAN, or to add a host to the DMZ.

1. Select Router Configuration from the main menu
2. Select Change WAN/DMZ from the sub-menu. The following screen is displayed:

#### WAN/DMZ Port



3. Select the Change the WAN/DMZ settings here. The following screen is displayed

#### WAN/DMZ Port: Mode



Three options are presented.

1. PPPoE
2. IP Gateway
3. DMZ.

PPPoE to connect to an external ADSL modem

PPPoE is used when connecting to an external ADSL modem. As the Vox PBX is equipped with an ADSL modem we recommend that the internal modem be used rather than an external ADSL modem. If you wish to use the external ADSL modem proceed as follows:

1. Select 'PPPoE'. Click Next. The following screen is displayed

**WAN/DMZ Port: PPPoE**

In order to use a PPPoE connection to the Internet, you must supply a username and password to logon to your Internet Service Provider (ISP). Your ISP should provide you with a username and password when you sign up for their service.

[Tell me more about the PPPoE username and password...](#)

PPP Username

PPP Password

Retype the PPP Password

2. Enter a Username and Password. Retype the Password. Select Next. The following screen is displayed

**WAN/DMZ Port: Confirm**

The WAN/DMZ Port will use **PPPoE** to provide internet access.

 This change will reset the firewall rules to default. Any firewall rules you have programmed will be lost. Do you wish to continue?

To confirm these settings, click on the **Confirm Changes** button below. If you do not wish to apply these settings, click on the **Cancel** button.

3. Select Confirm Changes. The PPPoE setup is now complete

IP Gateway to connect to Cable Modem, LAN or WAN

IP Gateway is typically used when connecting to a Cable Modem LAN or WAN.

1. Select *IP Gateway*. Select *Next*. The following screen is displayed

**WAN/DMZ Port: IP Gateway Mode**

Choose a type that is suitable for your Internet connection from the options below:

[Tell me more about WAN/DMZ Port settings...](#)

DHCP - use this if your provider uses DHCP to assign network settings.

Static - use this if you must configure your network settings manually.

Two options are presented: -

- DHCP - automatically assigns IP addresses
- Static - allows the IP addresses to be entered manually

**DHCP**

This is described in detail earlier in this manual. For details see Page 88

## Static

2. Select 'Static' Click Next . The following screen is displayed

### WAN/DMZ Port: Static IP Gateway

For static configuration, you must provide values for the fields below. Your Service Provider or LAN administrator should provide these values.  
 ? Tell me [more about static IP gateway settings...](#)

VOX PBX WAN address	211	.	118	.	103	.	241
VOX PBX WAN Subnet Mask	255	.	255	.	255	.	0
Internet Gateway address	211	.	118	.	103	.	241
Primary DNS address	192	.	168	.	4	.	40
Secondary DNS address	192	.	168	.	5	.	40

Next >    Cancel

3. Enter the IP addresses and Subnet mask. Click Next. The following screen is displayed.

### WAN/DMZ Port: Confirm

The WAN/DMZ Port will use an external **IP Gateway** to provide internet access.

VOX PBX WAN address will be **211.118.103.241**.  
 VOX PBX WAN Subnet Mask will be **255.255.255.0**

The Internet Gateway address will be **211.118.103.241**.

The Primary DNS Server will be **192.168.4.40**.  
 The Secondary DNS Server will be **192.168.5.40**.

 This change will reset the firewall rules to default. Any firewall rules you have programmed will be lost. Do you wish to continue?

To confirm these settings, click on the **Confirm Changes** button below. If you do not wish to apply these settings, click on the **Cancel** button.

Confirm Changes    Cancel

4. Select Confirm Changes.

### WAN/DMZ Port

The WAN/DMZ Port settings control how VOX PBX uses the WAN/DMZ Port.  
 ? Tell me [more about the WAN/DMZ Port settings...](#)

The WAN/DMZ Port is currently configured as follows:

The WAN/DMZ Port is configured to use an external **IP Gateway** to provide internet access.

The WAN IP Address is **211.118.103.241**.  
 The WAN Subnet Mask is **255.255.255.0**.

The Default Gateway is **211.118.103.241**.  
 The Primary DNS Server is **192.168.4.40**.  
 The Secondary DNS Server is **192.168.5.40**.

[Change the WAN/DMZ Port settings here...](#)

---

The DMZ is now **disabled**.

The DMZ IP Address is **not currently set**.  
 The DMZ Subnet Mask is **not currently set**.

[Change the DMZ IP address here...](#)

The Static IP Gateway setup is now complete.

## DMZ

A host can be connected to the WAN/DMZ Port. In default the Wan/DMZ port is configured as a DMZ. On the Router configuration page select *Change the DMZ IP address here*. The following page is displayed:

**WAN/DMZ Port: DMZ Setup**

To setup your DMZ port, you must provide values for the fields below.  
 ? Tell me [more about DMZ Setup settings...](#)

VOX PBX DMZ address  .  .  .

VOX PBX DMZ Subnet Mask  .  .  .

Select *Change the DMZ IP address here*. The following page is displayed:

**WAN/DMZ Port: Confirm**

The WAN/DMZ Port will host a **DMZ**.

VOX PBX DMZ address will be **10.7.1.1**.  
 VOX PBX DMZ Subnet Mask will be **255.255.255.0**

 This change will reset the firewall rules to default. Any firewall rules you have programmed will be lost. Do you wish to continue?

To confirm these settings, click on the **Confirm Changes** button below. If you do not wish to apply these settings, click on the **Cancel** button.

Enter the host IP address and subnet mask. Click *Next*. The following screen is displayed

Select *Confirm Changes*. The DMZ setup is now complete.

## Password

---

You can restrict access to your Vox PBX's web pages using password protection. With password protection enabled, users must enter a username and password before gaining access to the web pages.

By default, password protection is enabled on your Vox PBX, and the username and password set are as follows:

Username: **admin**

Password: **admin**

For more information, see *Accessing the Web pages* on page 29.

Setting your username and password

**Note**

Non-authorized users may try to access your system by guessing your username and password. We recommend that you change the default username and password to your own unique settings.

To set your own username and password:

1. From the left-hand *Router Configuration main* menu, click on *Password* in the sub-menu. The following page is displayed:

**Password**

Setting a password for VOX PBX allows you to restrict who can access these web pages.  
 ? Tell me [more about setting a password...](#)

Your current password settings are:

Password protection is **enabled**.  
[Change Password settings here...](#)

2. This page displays the current status of password protection.

3. Click on *Change Password settings here...* The following page is displayed:

**Password: Enable / Disable**

This page allows you to enable or disable password protection. Protection is already enabled by default. Click *Next>*. The following page is displayed:

This page displays the current username and password

**Password: Setup**

settings. Type your own unique username and password in the relevant boxes. They can be any combination of letters or numbers with a maximum of 20 characters. The default setting uses *admin* for both the username and password. We recommend that you **do not** set the same character combination for both username and password. Click *Next>*. The following page is displayed:

**Password: Confirm**

This page confirms that password protection is enabled and displays the username that will be required in order to access the web pages. If you are happy with these settings, click *Confirm Changes*. The *Enter Network Password* login box is displayed. You need to login to the web pages using your new username and password. For details of how to do this, see *Accessing the Web pages* on page 29.

**Disabling password protection**

If you do not want to use password protection, follow the instructions in 'Setting your username and password' on page 94 and at Step 3, select *Disable* and then click *Next>*. The following page is displayed.

## DHCP Server

A DHCP (Dynamic Host Configuration Protocol) Server is a system that assigns IP addresses to the multiple stations on the network.

Dynamic Host Configuration Protocol is a scheme where a client host 'leases' an IP address. This can be great on a large-scale network because it assigns an IP address, and many other options, such as DNS servers, WINS Servers, and other options.

1. Select *Router Configuration* from the main menu.
2. Select *DHCP Server* from the sub-menu. The following screen is presented.

### DHCP Server

This page allows creation of DHCP server subnets and DHCP server fixed host IP/MAC mappings. You may also enable and disable the DHCP server from here.

The DHCP server is currently *enabled*.

[Disable](#)

### DHCP server interfaces

Use this section to edit the list of IP interfaces that the DHCP server will operate on.

**Name** **Delete?**

iplan

ipdmz

[Apply](#) [Reset](#)

### Add new interface

Use this section to tell the DHCP server to operate on another IP interface.

New IP interface:  [Add](#)

### Existing DHCP server subnets

Subnet Value	Subnet Mask	Use local host address as DNS server	Use local host address as default gateway	Assign Auto Domain Name	Get subnet from IP interface	Delete?	
<input type="text" value="192.168.1.0"/>	<input type="text" value="255.255.255.0"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="text" value="iplan"/>	<input type="checkbox"/>	<a href="#">Advanced Options...</a>
<input type="text" value="192.168.0.0"/>	<input type="text" value="255.255.255.0"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="text" value="ipdmz"/>	<input type="checkbox"/>	<a href="#">Advanced Options...</a>

### Enable/Disable

The DHCP server is enabled by default. It can be disabled if required. Select 'Disable' to disable DHCP.

### DHCP Server Interfaces

By default the DHCP server operates on the iplan interfaces.

There is an option to delete DHCP on each interface. The DHCP Server must be disabled before an Interface can be deleted.

### Add new interface

There is an option to tell the DHCP server to operate on the ipdmz interface as well as the iplan.

### Existing DHCP Server Subnets

The settings for the existing subnets on the iplan and ipdmz are displayed.

All displayed parameters can be changed – change the setting to a new value and click 'Apply'.

To delete a subnet, check the associated box and select 'Apply'.

### Advanced Options

1. Select 'Advanced Options'

The following screen is displayed

#### Edit DHCP server subnet

This page allows you to change an existing DHCP server subnet. This can include moving the subnet, offering a different range of addresses on the subnet, or altering option configuration parameters offered to DHCP clients on this subnet.

### Parameters for this subnet

*Edit the definition of the DHCP subnet here. If you do not wish to specify the subnet value and subnet mask by hand, you may instead select an IP interface using the **Get subnet from IP interface** field. The subnet will track the IP address and subnet mask belonging to the chosen IP interface.*

Subnet value

Subnet mask

Get subnet from IP interface

Maximum lease time  seconds

Default lease time  seconds

### IP addresses to be available on this subnet

*You need to make sure that the start and end addresses offered in this range are within the subnet you defined above. Alternatively, you may check the **Use a default range** box to assign a suitable default IP address pool on this subnet.*

Start of address range

End of address range

Use a default range

### DNS server option information

*Enter the addresses of Primary and Secondary DNS servers to be provided to DHCP clients on this subnet. You may instead allow DHCP server to specify its own IP address by clicking on the **Use local host address as DNS server** checkbox.*

Primary DNS server address

Secondary DNS server address

Use local host address as DNS server

### Default gateway option information

Use local host as default gateway

### Additional option information

*Add and remove items from this list to configure additional option information you would like the DHCP*

#### Parameters for this subnet

The current subnet parameters are shown. These can be changed if required.

#### IP addresses to be available on this subnet

The range of IP addresses available on the subnet is shown. These can be changed if required.

#### DNS Server option information

The default setting is use local host as the DNS server - all DNS requests are sent to the default gateway 192.168.1.1 which then relays the request to the DNS addresses negotiated at start up.

Specific DNS servers can be defined if required.

#### Default gateway option information

Use local host as default gateway is checked by default

#### Additional option information

1. Select Create new DHCP option ...

#### Create DHCP server configuration option

This page allows you to set up a new DHCP server configuration option that will be sent to DHCP clients on this subnet.

**Create new DHCP option**

Choose which option you would like to configure using the drop down list. Then fill in the text box to specify what will be sent to DHCP clients if they should request a value for the chosen option. Some of the options, such as **WINS servers**, may be a list of IP addresses. You should type them in separated by commas, as in the following example:  
192.168.219.1, 192.168.220.1

Option name

Option value

The following screen is displayed

2. Select one of the following options from the drop down menu:
  - Default gateway
  - Domain name
  - IRC server
  - HTTP server
  - SMTP server
  - POP3 server
  - NNTP server
  - WINS server
  - Time server
3. Enter the option value in the field below.
4. Select OK

To create a new subnet

1. Select Create new subnet ...

The screen displayed is the same as Edit DHCP server subnet with the Additional option information option.

2. Enter the IP address to be assigned to the host
3. Enter the MAC address of the host
4. Enter the maximum lease time in seconds
5. Select 'OK'.

#### Existing DHCP fixed IP /MAC mappings

This field shows any existing mappings programmed. A mapping always assigns the same IP address to a host. In the example shown a fixed mapping has been set as a server was programmed for the DMZ. See page 127. The delete box can be ticked to remove an existing mapping.

1. To assign a fixed address to a host select 'Create new Fixed Host ...' on the DHCP server screen

#### Create new DHCP server fixed host IP/MAC mapping

**Add new mapping**

Define your new fixed mapping here. The IP address you choose will be given to the host with the MAC address you specify. The IP address must not clash with an IP address already present in a dynamic address range. You should also ensure that there is a suitable subnet defined for the IP address to reside in. The MAC address should be expressed as 6 hexadecimal pairs separated by colons, e.g. **00:20:2b:01:02:03**

IP address

MAC address

Maximum lease time  seconds

[Return to Firewall...](#)

2. Enter the IP address that is to be assigned and also the MAC address the address is to be assigned to. The address should be outside the range of addresses automatically assigned by the DHCP server. These are 192.168.1(0).1 to 192.168.1(0). 21.

#### IP Address

The *IP Address* screen displays information about your LAN IP address and allows you to change the address and subnet mask assigned to your Vox PBX.



**Note**

You should only change the addressing details if Vox Telecom asks you to, or if you are familiar with network configuration. In most cases, you will not need to make any changes to this configuration.

#### Changing the LAN IP address and subnet mask

Select *Router Configuration* from the main menu.

1. From the submenu, click on *IP Address*. The following screen is displayed:

### IP Address

IP Address controls the network address of VOX PBX.  
 ? Tell me [more about VOX PBX address settings...](#)

Currently, the address settings for VOX PBX are:

IP Address: **192.168.1.1**  
 Subnet Mask: **255.255.255.0**  
[Change VOX PBX address settings here...](#)

This screen displays the current IP address and subnet mask assigned to your Vox PBX. The default LAN IP configuration is IP address *192.168.1.1*, subnet mask *255.255.255.0*.

2. Click on *Change Vox PBX Address settings here...*

The following screen is displayed:

### IP Address: Setup

You must provide an IP address for VOX PBX and a local subnet mask.  
 ? Tell me [more about the IP addresses and subnet masks...](#)

VOX PBX IP Address  .  .  .

VOX PBX Subnet Mask  .  .  .

3. Click in the IP Address and Subnet Mask boxes and type the new address details.



**Note**

Your LAN PCs must be on the same subnet as your Vox PBX (subnet masks must be the same.) For more information about IP addresses and subnets, see 148. If necessary, reconfigure the LAN PCs so that their IP addresses place them in the same subnet as the new Vox PBX IP address.

4. Click *Next>*. The following screen is displayed:

### IP Address: Confirm

The IP address for VOX PBX will be **192.168.1.1**.  
 The Subnet Mask for VOX PBX will be **255.255.255.0**.

To confirm this setting, click on the **Confirm Changes** button below. If you do not wish to apply this setting, click on the **Cancel** button.

This screen displays the new IP address and subnet mask and asks you to confirm whether these are correct.

5. Click *Confirm Changes*. The *Addressing* screen is displayed, confirming your new LAN address settings.



**Note**

If you change the LAN IP address of the Vox PBX when connected to your Web browser, you will be disconnected. You must open a new connection by entering your new LAN IP address as the URL. See *Accessing the Web* screens on page 29.

## IP Routes

---

This allows static routes to be defined.

1.

### Edit Routes

There are currently no Routes defined.

[Create new Route...](#)

Select *IP Routes* in the Router Configuration menu. The following screen is displayed: -

2. Select *Create new Route*

The following screen is displayed: -

### Create Route - Advanced Settings

Name	Value
Destination	<input type="text" value="0.0.0.0"/>
Gateway	<input type="text"/>
Netmask	<input type="text" value="0.0.0.0"/>
Cost	<input type="text" value="1"/>
Interface	<input type="text" value="none"/>
Advertise	<input type="text" value="false"/>

3. Enter the following parameters:

- Destination IP address
- Gateway IP address
- Net mask
- Cost – this sets the number of hops counted as the cost of the route.
- Interface – choose from the following:
  - ipwan
  - ipdmz
  - iplan
  - None
- Advertise – true or false

4. Select '*Apply*'

The list of routes is displayed again.

# 7 PABX Configuration using the web interface

Your PABX (Phone System) can be completely configured via the web management system.

## PBX Configuration

From this page you have access to the settings for the most commonly used PBX Configuration options on your system.

[Tell me more about Basic PBX Settings...](#)

To change the phones that ring for incoming calls:

- [Incoming Ringing](#)

To enter station names:

- [Station Names](#)

To program the lines that phones can select to make outgoing calls:

- [Outgoing Restrictions](#)

To restrict stations from making international or national calls:

- [Station Class of Service](#)

To register / unregister DECT phones:

- [DECT Registration](#)

To divert or undivert a line please click here:

- [Incoming Call Diverts](#)

For other PBX settings, please select from the bottom menu on the left.

The web management Welcome screen contains a link to "Basic PABX Settings"; these settings are the configurable options that users will most likely wish to change.

The Basic PABX Settings are: -

- Incoming Ringing
- Station Names
- Outgoing Restriction
- Station Class of Service
- DECT Registration
- Incoming Call
- Instruction for setting these basic options are given below.
- Additional instructions are also included for all other PABX configuration options. Selecting PABX Configuration from the main menu and then using the sub-menu below to access individual functions may access these.

**PBX Configuration**

- Incoming Ringing
- System Settings
- Time and Date Settings
- System Speed Dials
- Station Settings
- Line Settings
- Incoming Call Diverts
- Class Of Service
- Timers
- Outgoing VoIP Calls
- CDS Routes
- Outgoing Restrictions
- Remote Notification



On the PABX programming screens the 'Apply' button must be selected before you exit a screen. If it is not selected any changes made on the screen will be lost when you move away from the screen.

Incoming Ringing

By associating lines with individual Stations, you can have lines ringing different Stations in Day and Night modes. For example, in DAY mode, all calls on Line1 might ring all phones, but in NIGHT mode all calls on Line 1 might be set to only ring Station 20. Also, in both DAY & NIGHT modes, all calls on IP Line (VoIP) 1 might be set to ring on Station 23 only.

To change the settings, select ON or OFF from the relevant drop down box for the line/Station configuration you require.

**Edit Incoming Ringing**

Turn off the stations that are not to ring for incoming calls on each line.

[Tell me more about Incoming Ringing...](#)

Pages: 1 2

	Stn. 20	Stn. 21	Stn. 22	Stn. 23	Stn. 31	Stn. 32	Stn. 33	Stn. 34
Line 1 day	On							
Line 2 day	On							
IP Trunk 1 day	On							
IP Trunk 2 day	On							
IP Trunk 3 day	On							
IP Trunk 4 day	On							
Door Station day	On							
Line 1 night	On							
Line 2 night	On							
IP Trunk 1 night	On							

Apply

[Back to PBX Configuration](#)

The default is that ALL lines ring ALL Stations in both Day and Night Modes.

## System Settings

### Edit System Settings

This page allows you to program system-wide features of the PBX.

[Tell me more about System Settings...](#)

Name	Setting
Activate Night Service	No
Answering Machine	Off
System VM Capacity (10-50)	20
Music on Hold Source	Internal
Answering Machine Password	1111
Programming Password	1111
Store all calls in CDS stores	Off
Door Station Enable	Off
Button Hopping	AutoHold
Line Key Light	Light flashing on hold
Programming Position	Stn20
Night Service Start 1 (HHMM)	
Night Service End 1 (HHMM)	
Night Service Start 2 (HHMM)	
Night Service End 2 (HHMM)	
External Music on Hold Stations	None
Weekend Service	Off
Intrude Tone	On
Automatic Line Selection	Off

[Back to PBX Configuration](#)

Use this screen to program system wide settings for your system.

#### Activate Night Service

This feature allows the user to activate night service (normally out-of-hours working). Night service set-up is used to define which Station rings on incoming calls, what the Class of Service is for each Station and what type of voice greeting is played.

The system operates in Day Mode unless the night service option is specifically programmed to operate.

#### Answering machine

Enables the Answering machine to answer calls to the system. In default the Answering Machine is associated with all lines and will answer calls that are not routed to individual Stations. See Line settings on page 114 to choose which lines are answered by the Answering Machine. The answering machine can also be turned on and off at Station 20 see page 78

#### System VM Capacity

This setting determines the number of messages that may be stored in the answering machine.

#### Music on Hold Source

This options determines what a caller will hear when a call in placed on Hold.

Select the required option below from the drop-down box.

- Silence
- Tone
- External – selects an external music source connected via a Station. See Music on Hold Station, below.
- Internal (Default – Internal system recording)

#### Voicemail Password

The password can be between 1 and 8 digits long and can be any number between 1 and 99999999

This is the password used to access answering machine from Station 20.

#### Programming Password

The password is 4 digits long and can be any number between 0000 and 9999

This is the password used to access the programming functions on the system when using an Operator Console programming position

#### Store All Calls in Caller ID Stores

Use this setting to determine what received calls are recorded by the system in the Calling Line Identity (Caller ID) Stores.

If set to OFF, only missed calls will be stored. If set to ON, all calls, including answered calls will be recorded in the Caller ID store.

#### Door Station Enable

Use this to enable the operation of a doorphone connected via the system.

#### Button Hopping

When Button hopping is enabled if you press a second line key while on a call on another line the first call is disconnected. With button hopping off the first call is placed on hold when the second line key is pressed.

#### Line Key Light

This allows you to have the line key light flashing or steady when a call is placed on hold. The default is flashing.

#### Programming Position

This is the programming Operator Console. In default it is Station 20 but can be changed to any of the wired Station positions.

#### Night Services Start 1 (HHMM)

The time in 24-hour clock formats (HH:MM) at which night service 1 is activated on the system.

#### Night Service End 1 (HHMM)

The time in 24-hour clock formats (HH:MM) when night service 1 is deactivated on the system.

#### Night Service Start 2 (HHMM)

The time in 24-hour clock formats (HH:MM) when night service 2 is activated on the system.

#### Night Service End 2 (HHMM)

The time in 24-hour clock formats (HH:MM) when night service 2 is deactivated on the system.

#### Music On Hold Station

Select a station position to connect to an external music-on-hold source. The drop down menu displays all available Station positions.

#### Weekend Service

Weekend service is selectable as being ON or OFF. This renders the system operable in accordance with night service settings. To enable the option, select the relevant option. As long as the option is selected, the system will operate in accordance with night service programming parameters

#### Automatic Line selection

When Automatic Line selection is turned on when a station goes off hook and dials a free line is selected and the digits are sent to line. Internal calls are made by selecting the internal call menu on Operator Consoles or by pressing hook flash and dialling the Station number.

## Edit Time & Date Settings

Use this screen to program Time and Date settings for your system.

### Edit Time and Date Settings

To update the time and date settings please enter the new values below.

[Tell me more about Time and Date Settings...](#)

Name	Setting
Date (DDMMYY)	<input type="text" value="010108"/>
Time (HHMM)	<input type="text" value="1507"/>

[Back to PBX Configuration.](#)

### Date

Use this field to enter the system Date - the time is in the DDMMYY format, where DD is the day, MM is the month & YY is the year.

For example, 3rd May 2008 = 030508

### Time

Use this field to enter the system time - the time is in the 24-hour clock format HH:MM where HH is hours and MM is minutes.

## System Speed Dials

You can dial your System speed dials from the relevant option on your Operator Console menu or by dialling the appropriate short code access from any POTS (analogue) phone.

### Edit System Speed Dials

Enter System Speed Dials manually on this page. Use the next and prev links to access more System Speed Dials. Alternatively, you may [Upload](#) the System Speed Dials from a CSV (spreadsheet) file.

[Tell me more about System Speed Dials...](#)

Pages: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#)

	Name	Number
Index 1	<input type="text"/>	<input type="text"/>
Index 2	<input type="text"/>	<input type="text"/>
Index 3	<input type="text"/>	<input type="text"/>
Index 4	<input type="text"/>	<input type="text"/>
Index 5	<input type="text"/>	<input type="text"/>
Index 6	<input type="text"/>	<input type="text"/>
Index 7	<input type="text"/>	<input type="text"/>
Index 8	<input type="text"/>	<input type="text"/>
Index 9	<input type="text"/>	<input type="text"/>
Index 10	<input type="text"/>	<input type="text"/>

[Back to PBX Configuration.](#)

This option allows the user to enter up to 99 System speed dial numbers, which will be available to all Stations. The System speed dials are referred to as Index 1 – 99. You may also associate a Name with each Speed Dial entry.

Name

Enter up to 10 characters in this field

Number

Enter up to 20 digits in this field



**Note**

To access the entries for Index 11 – 99, use the Next button on the bottom right hand corner of the Edit System Speed Dials screen.



**WARNING**

Make sure you select the APPLY button before proceeding to additional screens to complete more entries (e.g. Index 11 – 20), otherwise your changes will be lost.

Uploading System Speed Dials list

Alternatively, you may upload the System Speed Dials from a .CSV (spreadsheet) file.

To do this, click Upload on the Edit System Speed Dials screen and follow the instructions.

The file must be in .CSV format, with names in the first column, and phone numbers in the second column.

You can export files in this format using typical spreadsheet software, e.g. Microsoft Excel

### Station Settings

The settings on this screen have an effect on a Station-by-Station basis. Individual features can be set or unset for particular Stations on the system.

#### Edit Stations

This page allows you to program station features of the PBX.

The settings on this page have an effect on a station by station basis. Individual features can be turned on or off for particular stations on the system.

[Tell me more about Station Settings...](#)

	Name	Voicemail			
Stn. 20	<input type="text"/>	Off	<a href="#">Advanced Options...</a>	<a href="#">Personal Speed Dials...</a>	<a href="#">Program Keys...</a>
Stn. 21	<input type="text"/>	Off	<a href="#">Advanced Options...</a>	<a href="#">Personal Speed Dials...</a>	<a href="#">Program Keys...</a>
Stn. 22	<input type="text"/>	Off	<a href="#">Advanced Options...</a>	<a href="#">Personal Speed Dials...</a>	<a href="#">Program Keys...</a>
Stn. 23	<input type="text"/>	Off	<a href="#">Advanced Options...</a>	<a href="#">Personal Speed Dials...</a>	<a href="#">Program Keys...</a>
Stn. 31	<input type="text"/>	Off	<a href="#">Advanced Options...</a>	Not registered	
Stn. 32	<input type="text"/>	Off	<a href="#">Advanced Options...</a>	Not registered	
Stn. 33	<input type="text"/>	Off	<a href="#">Advanced Options...</a>	Not registered	
Stn. 34	<input type="text"/>	Off	<a href="#">Advanced Options...</a>	Not registered	<a href="#">Register a handset...</a>

[Back to PBX Configuration.](#)

### Basic Settings

#### Station Name

You may assign names to Stations. When a Station receives an internal call, its 'display' will show the calling Station name in the place of the calling number (20,21,22.)

To set the Station name, left mouse click on the field and enter the name associated with the Station

A maximum of 10 characters per name can be entered.

### Voicemail

Use this setting to turn ON/OFF individual voicemail boxes for each Station.

### Advanced Options

Select this option to edit Advanced Options for individual Stations.



**Note**

Advanced Options for the cordless Stations contain only a subset of the below features, as some of the features are not relevant for cordless Stations.

#### Edit Station - Strn. 20

[Tell me about Station Advanced Settings...](#)

Name	Setting
Disconnect	Off
Page Protection	Off
Individual CDS Store	On
Ringing Frequency	50Hz
Ringing Auto Frequency	On
Reverse Cadence	Off
Keypad Feedback	On
Hot Line	
Not Allowed To Open The Door	On
External Diversion	AllCalls
Do Not Disturb	Off
Lock Code	123
Lock	Off
Sys Speed No. Override	Off
Divert All	
Divert On Busy	
Divert On No Answer	
Voicemail Password	1111
Tone Protection	Off
Call Recording	Off
Able To Intrude	Off
Protect from Intrusion	Off

[Back to Edit Stations.](#) [Back to PBX Configuration.](#)

### Disconnect

The system assumes that all available Station interfaces have telephones connected to them. If a station interface does not have a telephone connected, ensure correct system operation by disconnecting the Station interface using the system programming

Use this option to functionally disconnect the Station from the system (this option does not physically disconnect the Station).

### Page Protection

When selected the Station in question will not receive pages from Operator Console 'Page-all' calls.

### Individual Caller ID Store

You can programme each Station to store five numbers each. Each of these Stations will have a separate record of

calls that ring on exchange lines programmed to ring their Stations only.

#### Ringing Frequency

This option allows the ringing frequency to be changed from the default 50Hz to 25Hz on individual Stations.

#### Reverse Cadence

Certain devices connected to a station position (such as answering machines) may not ring correctly when an incoming call is received.

This option allows the user to alter the incoming ringing cadence (tempo) to facilitate such equipment.

#### Language

The Language displayed on the Operator Consoles can be set from English. This setting changes the language for all phones. Each Individual Station can set the language on their phone. See Page **Error! Bookmark not defined..**

#### Hot Line

Stations can be programmed so that they automatically dial a number when they go off-hook. The number dialled can be a station or an external number.

Left mouse click on the field and enter the hotline number associated with the Station. This is a telephone number up to 24 digits in length.

The user can enter another Station number, or an external number as required (include 0 to seize the outside line).

#### External Diversion

This option allows the administrator to enable or disable each Station's facility to divert calls to outside lines.

Selection range: Left mouse click on the field and a pull down list of options is displayed:

- No Trunk to Trunk (This setting means incoming external calls cannot be diverted back out on another external line)
- All Calls (Default: All call types (Internal & External) can be diverted)
- External Divert Only (This setting means that ONLY incoming external calls can be diverted externally)



It is possible that a station may misuse the External Divert facility. The Default setting is that no Station is allowed to set the facility.

#### Do Not Disturb

If your Station is set to 'Do Not Disturb', anyone trying to call you will receive a busy (engaged) tone. If the person trying to contact you has an Operator Console, 'Do Not Disturb Enabled' will appear on its 'display'. 'Call back' and 'Alarm call' are the only incoming ringing that will be accepted when this feature is set.

Stations may be set not to ring.

This option cannot be set for Station 20.

#### Lock Code

You use a Lock Password to lock, unlock, or to make calls from a locked Station. The default Lock Password for all

Stations is 123, but each Station may change its password. Station Lock Passwords can be examined from the Programming Station.

The allowable range is a three-digit code in the range 000 to 999.

#### Lock

This feature allows you to lock your Station to prevent unauthorised users from making external calls. Turn Station lock ON or OFF.

#### System Speed Number Override

This option is selected if a station is allowed to dial numbers that are programmed in the system speed dial list even though their class of service normally restricts the number.

#### Divert All

Before you leave your Station, you can divert all your calls to ring at another Station. Alternatively, you can divert all external calls presented to your Station to an external number.

This function can be set for all Stations

Left mouse click on the data entry field for each Station. Enter up to 24 digits in this field (include the trunk access digit of diverting to outside lines).



#### Note

Note: Station diversions only apply for calls specifically to that Station. So, for example, calls routed to the Station as part of a general Incoming Ringing group will not be subjected to individual Station level diversions.



#### Note

*Broken tone will be heard at your Station until all call diversion is cancelled.*

You cannot divert to a station that has the 'Do Not Disturb' feature set.

#### Divert when busy

The 'Divert when busy' feature allows you to divert all your calls to ring at another Station if your Station is busy (engaged). Alternatively, you can divert all external calls to an external number if your Station is busy. In this case, internal calls will not be diverted but will be given the busy tone.

This function can be set for all Stations

#### Divert on No Answer

The 'Divert On No Answer' allows you to divert all your calls to ring at another Station if there is no answer at your Station after four rings. Alternatively, you can divert all external calls to an external number if your Station has not answered after four rings. In this case, internal calls will not be diverted but will continue to ring your Station.

This function can be set for all Stations

Left mouse click on the data entry field for each Station. Enter up to 24 digits in this field (include the trunk access digit of diverting to outside lines).

### Voicemail Password

This is the password used to access individual Station voicemail boxes. By default, each Station is allocated the same Voicemail Password, (1111). You can enter your own password, which can be up to eight digits long, as follows:

The password can be up to 8 digits in length.

### Tone Protection

When on a call, the call waiting tone or conference tone is audible to the user. Where these tones are not required, the feature should be disabled.

### Call Recording

Stations equipped with a voice mailbox can record calls when this option is turned on.

### Personal Speed Dials

You can dial your personal speed dials from the relevant option on your Operator Console menu or by dialling the appropriate short code access from your POTS (analogue) phone.

This screen allows the user to enter up to 30 personal speed dial numbers for each Station. The personal speed dials are referred to as Index 1 – 30.

#### Edit Personal Speed Dials - Stn. 20

This page allows you to program personal speed dials.

[Tell me more about Personal Speed Dials...](#)

Pages: [1](#) [2](#) [3](#)

	Name	Number
Index 1	<input type="text"/>	<input type="text"/>
Index 2	<input type="text"/>	<input type="text"/>
Index 3	<input type="text"/>	<input type="text"/>
Index 4	<input type="text"/>	<input type="text"/>
Index 5	<input type="text"/>	<input type="text"/>
Index 6	<input type="text"/>	<input type="text"/>
Index 7	<input type="text"/>	<input type="text"/>
Index 8	<input type="text"/>	<input type="text"/>
Index 9	<input type="text"/>	<input type="text"/>
Index 10	<input type="text"/>	<input type="text"/>

[Back to Edit Stations.](#)

[Back to PBX Configuration.](#)

You may also associate a Name with each Speed Dial entry.

#### Name

Enter up to 10 characters in this field

#### Number

Enter up to 24 digits in this field.



**Note**

To access the entries for Index 11 – 30, use the Next button on the bottom right hand corner of the Edit Personal Speed Dials screen. You cannot divert to a station that has the 'Do

Not Disturb' feature set.



Make sure you select the APPLY button before proceeding to additional screens to complete more entries (e.g. Index 11 – 20), otherwise your changes might be lost.

### Program Keys

This option applies to Operator Consoles only.

There are 8 programmable Function Keys on your Operator Console.

In default mode, the Operator Console 'Program Keys' are programmed to select the external lines available on the system, the first key for analogue Line 1, the second key analogue Line 2 and so on. The third, fourth, fifth and sixth key are for VoIP Lines

1. Using your mouse, left click on the 'Function' menu option next to the Key you wish to programme.
2. From the drop down list available, select the required setting.

#### Edit Program Keys - Stn. 20

This option applies to Operator Consoles only.

[Tell me more about Program Keys...](#)

	Function	Number
Key 1	Line	1
Key 2	Line	2
Key 3	IP Trunk	1
Key 4	IP Trunk	2
Key 5	IP Trunk	3
Key 6	IP Trunk	4
Key 7	Feature Code	
Key 8	Feature Code	

[Back to Edit Stations.](#)

[Back to PBX Configuration.](#)



Some settings require additional data to be entered. e.g. Selecting 'Station' as the program function will require you to enter the actual Station number (e.g. 21, 32 etc.) in the associated 'Number' field.

## Line Settings

The settings on this screen have an effect on a line-by-line basis. Individual features can be Enabled or Disabled for particular lines that are connected to the system.

### Edit Lines

The settings on this page have an effect on a Line by Line basis. Individual features can be Enabled or Disabled for particular Lines that are connected to the system.

[Tell me more about Line Settings...](#)

	Equipped	Outgoing Group	Use Answering Machine	
Line 1	On	Group1	On	<a href="#">Advanced Options...</a>
Line 2	On	Group1	On	<a href="#">Advanced Options...</a>
IP Trunk 1	On	Group2	On	
IP Trunk 2	On	Group2	On	
IP Trunk 3	On	Group2	On	
IP Trunk 4	On	Group2	On	

[Back to PBX Configuration](#)

### Equipped

The system assumes that available line interfaces have external lines connected to them. If a line interface does not have an exchange line connected, ensure correct system operation by un-equipping the line interface in system programming. Select this option to enable/disable lines connected to the system. Setting the option to Off, disables the specified line.

### Outgoing Group

External lines can be grouped together in up to 2 Outgoing Groups. Each Outgoing Group is associated with a line access code. These codes are 0 and 8, with Group 1 being associated with 0, and Group 2 associated with 8. Dialling a code selects a line from the associated Outgoing Group. This option allows you to select the required Group for the selected line.

### Use Answering Machine

This feature allows you to set up an Answering machine to answer incoming calls. You can select which lines are to be answered by the Answering machine when it is turned on. In default all lines are associated with the answering machine.

All messages received are stored in a system Answering machine, which is controlled by Station 20. Station 20 can also customise the greeting.

You can use it if you are not answering calls at lunch or at night, or simply want to record messages from callers. If desired, you can have this feature on permanently, so that calls, which are not answered for a programmable period, are answered by the Answering machine. The greeting

may ask callers to dial a station number, in which case the call will be transferred through to that Station.

Select this option to allow incoming calls only on the line to be answered by the answering machine.

### Advanced Options

#### Edit PSTN Line - Line 1

[Tell me about PSTN Line Advanced Settings...](#)

Name	Setting
Dial Tone Detect	On
CDS Detect	On
Reversal On Idle	Off
Long Line	Off

[Back to Edit Lines](#) | [Back to PBX Configuration](#)

#### Dial Tone Detect

This option requires the system to detect dial tone before calls can be made.

If set to FALSE, this feature stops the system from dropping the line, even when dial tone has not been detected.

In this case, the line is not released until the expiration of a timer.

#### Caller ID (Caller ID) Detection

This option enables the system to detect incoming caller ID information received from the network and to display it on Operator Consoles.

#### Reversal On Idle

#### Long Line

### Incoming call Diverts

You can use this feature to Divert (On Busy, No Reply or All Calls) calls received on a particular line to a station or the answering machine.

#### Edit Incoming Call Diverts

This feature can be used to Divert calls received on a particular line to a station, the answering machine or an external number.

[Tell me more about Incoming Call Diverts...](#)

	All Calls	Stations Busy	On No Answer
Line 1	<input type="text"/>	<input type="text"/>	<input type="text"/>
Line 2	<input type="text"/>	<input type="text"/>	<input type="text"/>
IP Trunk 1	<input type="text"/>	<input type="text"/>	<input type="text"/>
IP Trunk 2	<input type="text"/>	<input type="text"/>	<input type="text"/>
IP Trunk 3	<input type="text"/>	<input type="text"/>	<input type="text"/>
IP Trunk 4	<input type="text"/>	<input type="text"/>	<input type="text"/>

[Back to PBX Configuration](#)

For each incoming line (analogue Line 1-2, IP or VoIP Lines 3-4) you can define the Station to divert the call to for the cases of No Reply, Busy & All Calls. Divert when busy only applies if the answering Stations are busy on another call. It does not apply if the line is busy on another call. In this case the call is not presented to the switch. If a diversion on busy is required when a Line is busy it must be activated in the Network.



Note

These diversions apply only to calls received by the switch. If the Line is busy on a call a second call **cannot** be presented to the switch so these diversions **do not apply** in this case

The Code 710 is used to divert to the Answering Machine. (See also PABX Configuration -> Station Settings -> Advanced Options)

### Class of Service

The Class of Service feature allows the user to define barring settings for each Station connected to the system restricting that Station from making certain types of calls from the system.

**Edit Class of Service Stations**

Stations can be allowed to dial all calls, dial local and national calls, dial local calls, or be restricted from dialing all calls with the exception of emergency calls. There can be a different setting for Day Mode and Night Mode. If Emergency Only is set, allowed and restricted codes must be left.

[Tell me more about Class Of Service...](#)

To change the Allowed, Restricted, National and International codes, [click here](#).

Day	Class of Service	Allowed Codes	Restricted Codes
Sta. 20	No Restrictions	ON	OFF
Sta. 21	No Restrictions	ON	OFF
Sta. 22	No Restrictions	ON	OFF
Sta. 23	No Restrictions	ON	OFF
Sta. 31	No Restrictions	ON	OFF
Sta. 32	No Restrictions	ON	OFF
Sta. 33	No Restrictions	ON	OFF
Sta. 34	No Restrictions	ON	OFF
Night	Class of Service	Allowed Codes	Restricted Codes
Sta. 20	No Restrictions	ON	OFF
Sta. 21	No Restrictions	ON	OFF
Sta. 22	No Restrictions	ON	OFF
Sta. 23	No Restrictions	ON	OFF
Sta. 31	No Restrictions	ON	OFF
Sta. 32	No Restrictions	ON	OFF
Sta. 33	No Restrictions	ON	OFF
Sta. 34	No Restrictions	ON	OFF

Apply

[Back to PBX Configuration](#)

The following restrictions can be defined on a per Station basis:

- No Restrictions
- Restrict International
- Local Only
- Emergency Calls Only

By default **ALL** Stations can dial **ALL** destinations.

The Allowed and Restricted Codes

The Allowed & Restricted codes can be used to add greater flexibility to how you can configure the settings.

For example, say one wanted to restrict all International, except to Ireland (country code 00353...) and France (Country code 0031...). In this case, one would enable Restrict International in the Class of Service settings, and then set Allowed Codes to ON for the Station in question.

In the Allowed Codes list one would enter the dialling prefixes for Ireland (00353) and France (0031), thus giving the required settings.



**Note**

If 'Emergency Only' is set, Allowed and Restricted codes must be OFF.

**Day and Night Mode**

There are different settings for Day Mode and Night Mode. To configure Day/Night mode see *PABX Configuration -> System Settings*.

**Setting Class of Service Codes**

The leading digits of the dialled number determine the definition of what constitutes Restricted, Allowed, and National & International calls.

**Edit Class of Service**

[Tell me more about Class Of Service...](#)

Pages: [1](#) [2](#) [3](#) [4](#) [5](#)

	International	National	Allowed	Restricted
Index 1	00	0		
Index 2				
Index 3				
Index 4				
Index 5				
Index 6				
Index 7				
Index 8				
Index 9				
Index 10				

[Back to Edit Class of Service Stations](#) | [Back to PBX Configuration](#)

Thus, for example, numbers beginning with '00xx' normally are International calls. Numbers beginning with just a single zero '0xx' are normally considered National calls. Obviously, the definition of Allowed & Restricted codes is at the users discretion.

50 entries can be configured in the dialling codes for International, National, Allowed & Restricted numbers. These dialling rules can be configured manually. See *'To change the Allowed, Restricted, National and International codes, [click here](#)'* on the **'Edit Class of Service Stations'** screen.

## Timers

The timers listed below are under the control of the user and therefore can be changed from the default setting, provided the new settings are within the individual timers limits.

### Edit User Timers

[? Tell me about User Timers...](#)

Name	Setting
Recall On Hold (1-1800 seconds)	<input type="text" value="90"/>
Recall On Transfer (1-300 seconds)	<input type="text" value="30"/>
Divert On No Answer (1-30 seconds)	<input type="text" value="18"/>
Open Door (1-30 seconds)	<input type="text" value="5"/>
Door Station Ring Duration (1-30 seconds)	<input type="text" value="30"/>
Call Park (1-300 seconds)	<input type="text" value="180"/>
Ring Back Time (1-30 seconds)	<input type="text" value="30"/>
Answering Machine (1-30 seconds)	<input type="text" value="10"/>
Voice Mail Message Length (30-300 seconds)	<input type="text" value="60"/>
Remote Notification Delay (60-1800 seconds)	<input type="text" value="900"/>
Remote Notification Interval (60-900 seconds)	<input type="text" value="300"/>

[Back to PBX Configuration](#)

#### Recall On Hold

This is the time that elapses before a call, which has been placed on hold, rings back the Station that put the call on hold.

#### Recall On Transfer

This is the time that elapses before a call, which has been transferred and not answered, rings back the Station that attempted the transfer.

#### Divert On No Answer

This is the time that elapses before a call ringing at a station, with 'Divert On No Answer' set, is diverted.

#### Call Park

This is the time that elapses before a call placed on 'Call Park' rings back the parked call Station.

#### Ring Back Time

This is the time a station will ring when Ringback has been invoked.

#### Answering Machine

This is the time that elapses before an unanswered incoming call is presented with the System voice mailbox greeting.

#### Voice Mail Message Length

This is the maximum length of a message left in a Mailbox or a Greeting for a Mailbox, Auto Attendant or Courtesy service.

#### Remote Notification Delay

This is the time delay between receiving a voice mail and selecting a line to initiate the remote notification call.

#### Remote Notification Interval

This is the time allowed before a second Remote Notification call is made if the first call is not answered.

### Outgoing VoIP Calls

---

In normal operation to make an outgoing call a line access code, 0 or 8, is dialled or a Line key is selected and the digits are dialled. To make a call over a VoIP line the digit 8 must be dialled or a VoIP Line key (Line 3-4) selected. This feature is used to programme the Vox PBX so that outgoing calls are sent over the VoIP Lines independently of the line access code dialled or the line selected. It is also possible to select particular calls to go over VoIP lines.

Select Outgoing VoIP calls from the left-hand side menu. Four options are displayed.

#### Normal Line selection

The default setting, Normal Line Selection means that a line access digit, 0 or 8, is dialled to select the line the call is made on. 0 is dialled to select Line 1&2 analogue lines and 8 to select a VoIP line.

#### All Outgoing calls carried over VoIP

This option is selected if all external calls are to select the VoIP line.

The line access code 8 (VoIP Line) must still be dialled, or a Line key (line 3-4) selected, to make an external call.

As soon as the first digit of the external number is dialled a free VoIP line will be selected.

An option is then provided so that if all VoIP Lines are not available or are busy the call will be placed over Line 1 or 2 analogue Lines. This is called fallback to PSTN.

1. Select 'All outgoing calls carried over VoIP' and select 'Next'.

The following screen is displayed: -

#### Outgoing VoIP Calls

You can decide what outgoing calls are carried over the VoIP lines.

[Tell me more about Outgoing VoIP Calls...](#)

Select one of the following:

- Normal Line selection.
- All outgoing calls carried over VoIP.
- Selected outgoing calls carried over VoIP.
- Least Cost Routing.

[Next >](#)

[Back to PBX Configuration.](#)

2. If you want calls to be dialled over Line 1 or 2 if the VoIP lines are busy then select '*Fallback to PSTN Line*'.
3. If you only want calls to be dialled over the VoIP lines and busy tone to be returned if they are not available make sure that the '*Fallback to PSTN line*' box is not selected. Click '*Apply*'.

#### Selected Calls carried over VoIP

You can choose that particular calls be carried over the VoIP line. For example you may want all international calls to automatically select a VoIP line but all other calls to go over the Line selected.

1. In this case choose '*Selected outgoing calls carried over VoIP*'. The following screen is displayed: -

**Edit Selected Codes over VoIP**

You can select particular outgoing calls to go over VoIP lines. Enter the codes that are to be carried over VoIP lines. You can also decide that if a VoIP line is not available the call will automatically go over a standard line.

[Tell me more about Outgoing VoIP Calls...](#)

Fallback to PSTN line

Pages: 1 2 3 4 5

Dialled Code	
Index 1	<input type="text"/>
Index 2	<input type="text"/>
Index 3	<input type="text"/>
Index 4	<input type="text"/>
Index 5	<input type="text"/>
Index 6	<input type="text"/>
Index 7	<input type="text"/>
Index 8	<input type="text"/>
Index 9	<input type="text"/>
Index 10	<input type="text"/>

[Back to Outgoing VoIP Calls](#)

[Back to PBX Configuration](#)

2. Enter the codes for the particular calls. For all international calls to be carried over the VoIP trunk enter 00 in Index 1.
3. If you want calls to be dialled over Line 1 or 2 (analogue) if the VoIP lines are busy then select '*Fallback to PSTN Line*'.
4. If you only want calls to be dialled over the VoIP lines and busy tone to be returned if they are not available make sure that the '*Fallback to PSTN line*' box is not selected.
5. Click '*Apply*'.

#### Least Cost Routing

To set up the feature you associate dialled digits (Input Codes) with the lines over which calls should be routed and with whatever network codes (Output codes) are necessary to route the call.

In addition, you may choose to route the calls over different lines at various times of the day for optimum call rates.

The feature can be turned on permanently or activated at particular times.

Once the facility is activated, calls are automatically routed over the selected lines, and the network code (Output Code) is dialled automatically on the line before the telephone number.

Using this screen you may define the Least Cost Routing criteria.

Up to 30 LCR rules may be defined (Index 1 – 30).

1. In the 'Input Code' field you insert the relevant dialled digits (e.g. '00' for International calls or '001' for International calls to the USA).
2. In the Output Code field, you insert whatever digits you want to be passed to the network. If no additional carrier access codes were required, then the Output Code would typically match the Input Code.

**Edit Least Cost Routing Codes**

Enable LCR below:

Enabled for programmed LCR timebands.  
 Always enabled.

Next >

[Tell me more about LCR...](#)

---

Pages: 1 2 3 4 5

	Input Code	Output Code	Preferred	Line 1	Line 2	IP Trunk 1	IP Trunk 2	IP Trunk 3	IP Trunk 4
Index 1	<input type="text"/>	<input type="text"/>	Preferred ▾	<input type="checkbox"/>					
Index 2	<input type="text"/>	<input type="text"/>	Preferred ▾	<input type="checkbox"/>					
Index 3	<input type="text"/>	<input type="text"/>	Preferred ▾	<input type="checkbox"/>					
Index 4	<input type="text"/>	<input type="text"/>	Preferred ▾	<input type="checkbox"/>					
Index 5	<input type="text"/>	<input type="text"/>	Preferred ▾	<input type="checkbox"/>					
Index 6	<input type="text"/>	<input type="text"/>	Preferred ▾	<input type="checkbox"/>					
Index 7	<input type="text"/>	<input type="text"/>	Preferred ▾	<input type="checkbox"/>					
Index 8	<input type="text"/>	<input type="text"/>	Preferred ▾	<input type="checkbox"/>					
Index 9	<input type="text"/>	<input type="text"/>	Preferred ▾	<input type="checkbox"/>					
Index 10	<input type="text"/>	<input type="text"/>	Preferred ▾	<input type="checkbox"/>					

Apply

[Back to Outgoing VoIP Calls.](#)  
[Back to PBX Configuration.](#)

3. If you want to enter a specific access code (sometimes referred to as an Indirect Access Code), enter this before the relevant dialled digits in the 'Output Code' field. The 'Output Code' entered will be dialled automatically by the system in front of the user dialled digits.

**Preferred /Exclusive**

In *Preferred* is selected then the system will, as a preference, route the call using the line(s) which have been enabled for each specific Input Code.

However, if these line(s) are busy or not available, then the system will attempt to route the call over any of the remaining system lines (i.e. those that are not enabled for that specific Input code). If *Exclusive* is selected the route the call over the selected lines and if they are busy or not available a busy tone will be returned.

## LCR Time bands

### Edit Least Cost Routing Timebands

Enter up to two timebands for Least Cost Routing to be enabled (in HHMM format). This allows VOX PBX to avoid using expensive lines during peak billing periods. In addition, you can force Least Cost Routing to be enabled for the whole weekend, regardless of your timeband settings.

[Tell me more about Outgoing VoIP Calls...](#)

Name	Setting
Start Time 1 (HHMM)	<input type="text"/>
Stop Time 1 (HHMM)	<input type="text"/>
Start Time 2 (HHMM)	<input type="text"/>
Stop Time 2 (HHMM)	<input type="text"/>
Always enable LCR at weekends	<input type="checkbox"/>

[Back to Least Cost Routing.](#)

[Back to Outgoing VoIP Calls.](#)

[Back to PBX Configuration.](#)

An option to turn Least Cost Routing on and off automatically is also provided. *Select Enabled for programmed LCR time bands*

and select *Next*. The following screen is displayed: -  
Two separate start and stop times can be selected. There is also the option to enable LCR throughout the weekend.

## Caller ID Routes

Caller ID is a feature for incoming calls from particular numbers and given a Caller Identities (CallerID). Specific caller numbers can be associated with a particular name and then routed by the Vox PBX to a pre-defined Station.

### Edit CDS Routes

Using this feature, incoming calls from particular numbers can be associated with a particular name and routed to a pre-defined station.

[Tell me more about CDS Routes...](#)

Pages: [1](#) [2](#) [3](#)

	Number	Name	Day Destination	Night Destination
Index 1	<input type="text"/>	<input type="text"/>	Stn20	Stn20
Index 2	<input type="text"/>	<input type="text"/>	Stn20	Stn20
Index 3	<input type="text"/>	<input type="text"/>	Stn20	Stn20
Index 4	<input type="text"/>	<input type="text"/>	Stn20	Stn20
Index 5	<input type="text"/>	<input type="text"/>	Stn20	Stn20
Index 6	<input type="text"/>	<input type="text"/>	Stn20	Stn20
Index 7	<input type="text"/>	<input type="text"/>	Stn20	Stn20
Index 8	<input type="text"/>	<input type="text"/>	Stn20	Stn20
Index 9	<input type="text"/>	<input type="text"/>	Stn20	Stn20
Index 10	<input type="text"/>	<input type="text"/>	Stn20	Stn20

[Back to PBX Configuration.](#)

This feature can be used to ensure that all calls from important customers are routed to the manager's office, or that all calls from sales get routed to the sales Station.

1. In the number field, enter the caller's number (Caller ID) as is delivered by the network. You can also choose to associate a name with this number. This name will be displayed for calls routed to the desired Operator Console Station.
2. You may then define which Station this Caller ID routes to. There is the option to change this routing for day and night mode. To set the system Day & Night mode times see PABX Configuration -> System Settings.
3. Up to 30 individual entries can be made, referred to as index 1- 30.
4. To access the entries for Index 11 – 30, use the *Next* button on the bottom right hand corner of the *Edit Caller ID Routes* screen.



**Note**

If no name is entered for the incoming Caller ID, the system will compare the incoming Caller ID against the speed dial list to match for a name.

### Outgoing Restriction

You can use this feature to restrict a station from being able to make outgoing (external) calls on particular lines. You can configure the restriction for each line separately, i.e. Turn OFF for those Stations that are not allowed to select the particular line to make outgoing calls.

### Remote Notification

The various settings for remote notification of voice mail messages are set up here.

#### Edit Remote Notification

When remote notification is activated a call is made to notify the user that a message has been left in their mailbox.

To enter the systemwide settings: [click here](#).

[Tell me about Remote Notification...](#)

	Allowed	Activated	Type	Personal Number
Stn. 20	Off	Off	Priority	
Stn. 21	Off	Off	Priority	
Stn. 22	Off	Off	Priority	
Stn. 23	Off	Off	Priority	
Stn. 31	Off	Off	Priority	
Stn. 32	Off	Off	Priority	
Stn. 33	Off	Off	Priority	
Stn. 34	Off	Off	Priority	

Apply

[Back to PBX Configuration](#)

Set 'Allowed' on for those Stations allowed to activate remote notification.

When 'Activated' is set to On the remote notification is activated for the Station. The Station can activate and deactivate the feature from within their voice mailbox.

The notification type can be set to all messages or priority messages only. The user can also set this from within their voice mailbox.

The notification method is whether the notification is to a normal telephone or a Pager Company. This can also be set by the Station.

Select 'To enter additional Remote Notification settings [click here](#)'

1. Enter the personal number if remote notification is to a telephone number
2. Enter the Pager Company number and the Pager dial string if notification is to a pager company

Three delays are provided between the call to the Pager Company being answered and the pager string being dialled. This is set at a short delay.

#### Edit Remote Notification

[?](#) Tell me [about Remote Notification...](#)

Name	Setting
Simultaneous Calls (1-2)	<input type="text" value="1"/>
Retry Attempts (2-15)	<input type="text" value="2"/>
Line Group	<input type="text" value="Group1"/>

[Back to Remote Notification.](#)

[Back to PBX Configuration.](#)

There are a number of system wide settings, which cannot be set by individual Stations. These are accessed by selecting: 'To enter the system wide settings [click here](#)'

The number of simultaneous calls determines the number of remote notification calls that will be set up at the same time. The number of retry attempts sets the number of times the system will try to set up a call if it is not successful. The line group selects the lines that will be used for the calls.

#### VoIP Configuration

---

VoIP (Broadband Voice) is a way to make and receive phone calls using your broadband Internet connection instead of your standard phone line.

Vox PBX converts your phone calls into data and that data is then sent over your high-speed Internet connection.

The VoIP settings are automatically configured when the system unit is connected to the ADSL line.

These settings can be examined but cannot be changed

Select VoIP Configuration from the left-hand side menu



The basic VoIP settings are shown indicating the number of VoIP lines that are configured and the detailed settings.

### VoIP

Setting up VoIP allows you to route telephony calls over a data network.

[Tell me more about VoIP...](#)

Your current VoIP settings are:

IP Trunk 1	<b>not configured</b>
IP Trunk 2	<b>not configured</b>
IP Trunk 3	<b>not configured</b>
IP Trunk 4	<b>not configured</b>

[Change VoIP settings here...](#)

Your advanced VoIP settings are...

The SIP User domain is **vphone.co.za**.  
The SIP Registrar Server proxy is **vphone.co.za**.  
The SIP Registrar Server port is **5060**.  
The SIP Registrar Server expiry time interval is **3600**.  
The SIP Transport for SIP invite requests is **UDP**.

The Codec preference is **G729, G711, G726**.

The QoS settings are:  
The RTP DSCP is **0**.  
The Signalling DSCP is **0**.

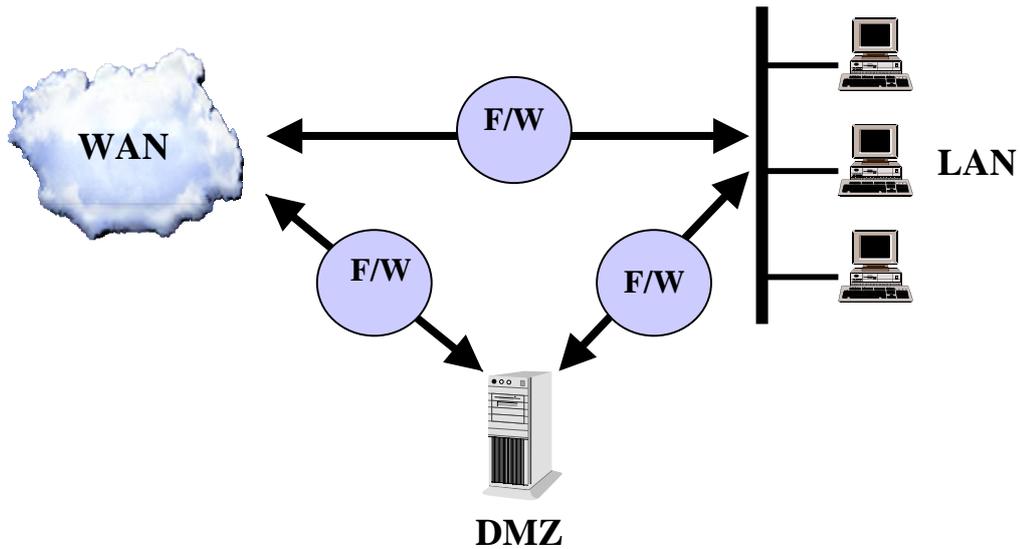
The Outbound Server is **vphone.co.za**.  
The Outbound Server port is **5060**.  
The Outbound Server transport is **UDP**.

DTMF Transport is **RFC2833**.  
Silence Suppression is **Enabled**.

[Change Advanced VoIP settings here...](#)

# 8 Firewall

Three independent Firewalls are available to provide protection against unwanted activity from the Internet.  
 One between the Internet (WAN) and the Internal LAN  
 One between the Internet (WAN) and a DMZ  
 One between the DMZ and the LAN  
 In default all unsolicited incoming activity is blocked.



**Menu**

- Welcome
- Router Configuration
- PBX Configuration
- VoIP Setup
- Wireless Setup / Security
- Firewall**
- Diagnostics
- Firmware Update
- Reset Options
- Help

**Firewall**

- WAN->LAN
- WAN->DMZ
- DMZ->LAN
- Intrusion Detection
- Security Logging

**Firewall Configuration**

In default the Firewall blocks all unwanted access from the Internet. Disabling the Firewall turns all three Firewalls off. This is not recommended unless there is another device providing a Firewall between the system and the Internet.

**Firewall:**  Enabled  Disabled

---

**Interface Settings**

Three independent Firewalls are available to provide protection against unwanted activity from the Internet. There is one between the Internet and the Internal LAN, one between the Internet and a DMZ and one between the DMZ and the LAN. In default all unsolicited incoming activity is blocked.

If you are using an application that requires access through the Firewall you can open the Firewall to it. Select the WAN to LAN interface to provide access from the Internet to an application hosted on the LAN. Select the WAN to DMZ interface to provide access from the Internet to an application hosted on the DMZ. The DMZ to LAN interface allows access to applications on the LAN from the DMZ.

[WAN->LAN Configuration...](#)

[WAN->DMZ Configuration...](#)

[DMZ->LAN Configuration...](#)

[Configure Intrusion Detection...](#)

[Configure Security Logging...](#)

---

**Reset Firewall to Default**

This change will reset the firewall rules to default. Any firewall rules you have programmed will be lost. Do you wish to continue?

Confirm

Select Firewall from the left-hand side menu. The following screen is displayed: -

The Firewall is enabled on all three interfaces in default. Selecting the 'Disabled' button and selecting 'Change State' disables the Firewalls.

Programming a server on the DMZ



**Note**

The example shown here assumes that the primary VoIP address on the external interface is used. If the Internet service supplies multiple VoIP addresses it is possible to assign applications to the additional VoIP addresses. **See Programming a server using multiple VoIP addresses** below if the service you have subscribed has multiple VoIP addresses.

If you are using an application that requires access through the firewall you can open the firewall to it.

1. Select the WAN to LAN interface to provide access from the Internet to an application hosted on the LAN
2. Select the WAN to DMZ interface to provide access from the Internet to an application hosted on the DMZ. The DMZ to LAN interface allows access to applications on the LAN from the DMZ.

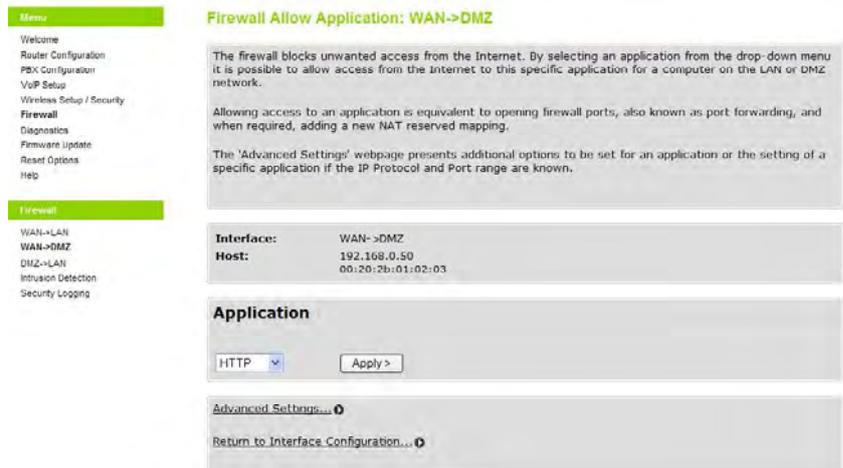
It is recommended that applications that are accessed from the Internet are located on PCs connected to the DMZ. Locating these applications here allows them to be isolated from your own network by the Firewall between the DMZ and LAN.

3. Select the interface the application is to be hosted on.
4. The following screen is displayed when WAN to DMZ is selected. A similar screen is displayed when WAN to LAN or DMZ to LAN is selected.
5. Ensure the server / PC that the application is hosted on is connected to the DMZ. Connecting it to the blue WAN port connector on the system does this.

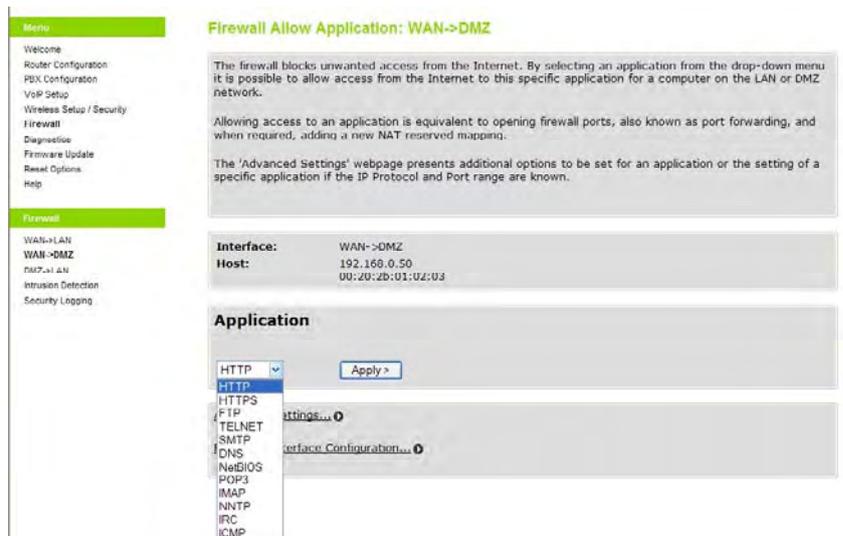


The PCs / servers connected to the DMZ are displayed. In this case one PC is connected.

6. Select 'Add Application' associated with the PC that is hosting the application.



The details of the host are displayed. These details include the name of the host machine, if available, and the VoIP and MAC addresses of the host.



7. Select the application from the drop down list. This list includes the most common applications.
8. Click 'Apply'.



In the example shown above HTTP has been added to the host.



**Note**

The example shown assumes that the primary VoIP address on the external interface is used. If the Internet service supplies multiple VoIP addresses it is possible to assign applications to the additional VoIP addresses. These are assigned using the 'Advanced Settings' on the 'Firewall allow Application' screen.

### Programming a server using multiple IP addresses

There are two elements to programming the server with using multiple IP addresses.

The first is to program a global address pool. This defines the IP addresses that are provided.

The second is to assign the application to the server using the specific IP address required.

The example detailed here is on programming a server on the DMZ using a specific external IP address. The server could be programmed on the LAN interface by selecting the WAN -> LAN interface on the Firewall Configuration screen.

### Programming the Global Address Pool

1. Select the *WAN -> DMZ* interface on the *Firewall Configuration* screen.



2. Select '*Advanced NAT Configuration*'



3. Select 'Add Global Address Pool'.

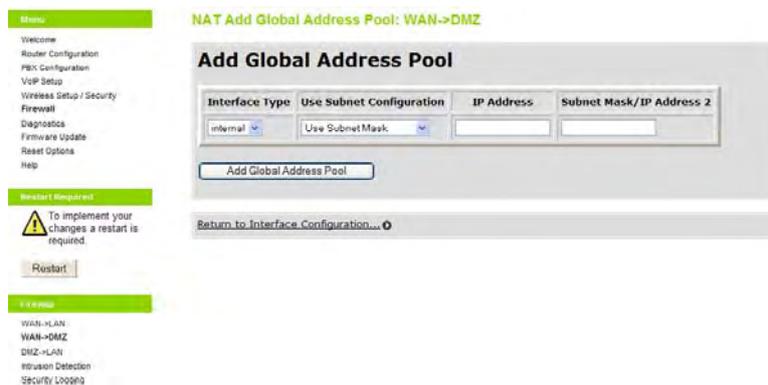


As this example is for a server on the DMZ select the 'Interface type' as **DMZ**.

In the IP Address Field enter the router (hub) address.

For subscribers to five public Network Static IP addresses the subnet mask is 255.255.255.248. For thirteen public network static addresses the subnet mask is 255.255.255.240.

Alternatively select 'Use IP Address Range' and enter the first and last address in the 'IP Address' and 'IP Address 2' fields.



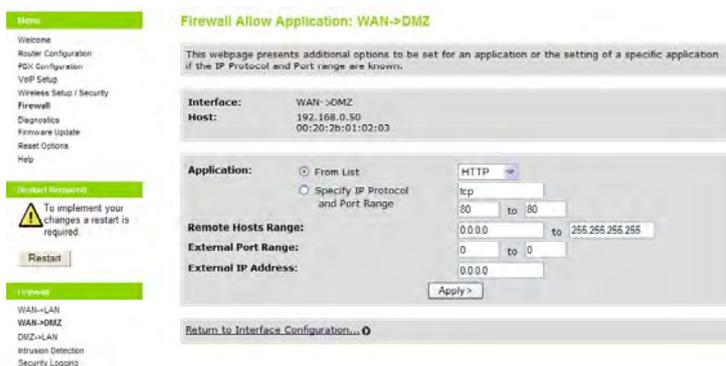
4. Select 'Add global address pool'.



The Global address pool settings are displayed. Select 'Return to Interface Configuration'.

Programming the server for the specific IP address

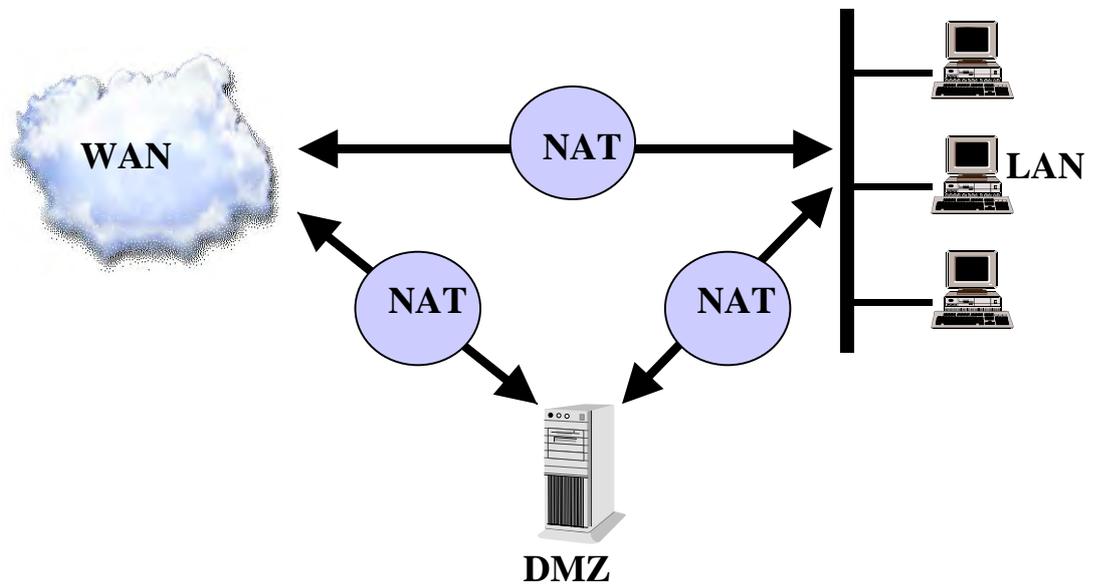
1. On the 'Firewall Interface Configuration WAN -> DMZ' select 'Add Application' for the host.
2. Select 'Advanced settings'.



3. Select the Application from the Drop-down menu or select the 'Specify IP Protocol and Port Range'. If there is more than one protocol required for the application then each protocol must be separately entered i.e. enter one protocol and the port range and apply it.
4. Enter the IP address in the 'External IP address' field. This is the external IP address the application is to be provided on. If this address is set to 0.0.0.0 the primary IP address of the interface is used.
5. Select 'Apply'.
6. Select 'Restart'.

NAT (Network Address Translation)

NAT operates independently on each interface and is enabled by default on each of the three interfaces.



To disable NAT

1. From the Firewall Interface Configuration screen select Advanced NAT configuration.

#### Advanced NAT Configuration: WAN->LAN

Enable NAT:  Enable  Disable

[Apply >](#)

#### Global Address Pools

No Global Address Pools

[Add Global Address Pool...](#)

[Return to Interface Configuration...](#)

2. Select 'Disable'. A warning that disabling NAT will reset all the firewall rules that have been programmed.

### Global Address Pools

A global address pool is used to assign a range of public IP addresses to a WAN interface.

1. Select 'Add Global Address Pool ...'. The following screen is displayed: -

#### NAT Add Global Address Pool: WAN->LAN

### Add Global Address Pool

Interface Type	Use Subnet Configuration	IP Address	Subnet Mask/IP Address 2
internal <input type="button" value="v"/>	Use Subnet Mask <input type="button" value="v"/>	<input style="width: 80px;" type="text"/>	<input style="width: 80px;" type="text"/>

[Return to Interface Configuration...](#)

2. Select an interface from the drop down list
3. Enter an IP address and subnet mask, or enter the first and last IP addresses in the range

### Blocked Hosts

Traffic to or from specific hosts can be blocked by the firewall.

1. Select 'Blocked Hosts ...' in the advanced settings pane of the *Firewall Interface Configuration* screen.

The following screen is displayed

#### Block Hosts: WAN-LAN

### Blocked Hosts

No Blocked Host Defined

[Add Blocked Host...](#)

[Return to Interface Configuration...](#)

2. Select 'Add Blocked Host ...' for the selected interface

#### Firewall Add Blocked Host: WAN-LAN

### Add Blocked Host

Host IP Address:

Host Subnet Mask:

Direction:

[Return to Blocked Host List...](#)

[Return to Interface Configuration...](#)

3. Enter the host IP address and Subnet mask.
4. Select the direction, 'Inbound', 'Outbound' or 'Both'.
5. Select 'Apply'.
6. Save the new configuration.
7. Restart the system.

### Outgoing Permissions

You can restrict outgoing access for particular protocols.

1. Select 'Outgoing Permissions...' in the advanced settings pane of the *Firewall Interface Configuration* screen.

### Outgoing Permissions: WAN->LAN

You can prevent particular outgoing traffic by deselecting the protocol you want to restrict.  
Warning - Modifying the settings on this page can prevent computers on the network from accessing your broadband connection. You can affect your VoIP as well as other broadband services.

HTTP	<input checked="" type="checkbox"/>
HTTPS	<input checked="" type="checkbox"/>
FTP	<input checked="" type="checkbox"/>
Telnet	<input checked="" type="checkbox"/>
SMTP	<input checked="" type="checkbox"/>
DNS	<input checked="" type="checkbox"/>
NetBIOS	<input checked="" type="checkbox"/>
POP3	<input checked="" type="checkbox"/>
NNTP	<input checked="" type="checkbox"/>
IMAP	<input checked="" type="checkbox"/>
IRC	<input checked="" type="checkbox"/>
SIP	<input checked="" type="checkbox"/>
All other TCP	<input checked="" type="checkbox"/>
All other UDP	<input checked="" type="checkbox"/>
ICMP	<input checked="" type="checkbox"/>
All other IP Protocols	<input type="checkbox"/>

Apply >

[Return to Interface Configuration...](#)

The allowed protocols allowed are shown with a ✓



*Warning - Modifying the settings on this screen can prevent computers on the network from accessing your broadband connection. You can affect your VoIP as well as other broadband services.*

### Intrusion Detection

This is used to detect and block-incoming attempts to attack or block traffic to the site.

1. Select 'Intrusion Detection ...' from the left-hand side Firewall sub-menu.

The following screen is displayed

Intrusion Detection Configuration

Intrusion Detection Enabled	false	▼
Use Blacklist	false	▼
Use Victim Protection	false	▼
Victim Protection Block Duration	600	seconds
DOS Attack Block Duration	1800	seconds
Scan Attack Block Duration	86400	seconds
Scan Detection Threshold	5	per second
Scan Detection Period	60	seconds
Port Flood Detection Threshold	10	per second
Host Flood Detection Threshold	20	per second
Flood Detection Period	10	seconds
Maximum TCP Open Handshaking Count	5	per second
Maximum Ping Count	15	per second
Maximum ICMP Count	100	per second

Apply

Clear Blacklist

[Return to Firewall Configuration...](#)

2. Enter the following parameters

Use Blacklist	Enables or disables blacklisting of an external host if the firewall has detected an intrusion from that host. Access is denied to that host for 10 minutes.
Use Victim Protection	Enables or disables the blocking of incoming broadcast Ping commands for the period specified in Victim Protection Block duration.
Victim Protection Block Duration	The period for which incoming broadcast Pings is blocked. The default setting is 600 seconds.
DOS Attack Block Duration	If a Denial of Service attack is detected, traffic from that host is blocked for the duration specified here. The default setting is 1800 seconds.
Scan Attack Block Duration	If scan activity from a host attempting to identify open ports is detected, traffic from that host is blocked for the duration specified here. The default setting is 86400 seconds (1 day).
Scan Detection Threshold	If the number of scanning packets counted within the Scan Detection Period exceeds the value set here, a port scan attack is detected. The default setting is 5 per second.
Scan Detection Period	The duration that scanning type traffic is counted for. The default setting is 60 seconds.
Port Flood Detection Threshold	This is the maximum number of SYN packets that can be received by a single port before a flood is detected. The default setting is 10 per second.
Host Flood Detection Threshold	This is the maximum number of SYN packets that can be received from a host before a flood is detected. The default setting is 20 per second.

- Flood Detection Period If the number of SYN floods counted within this duration exceeds either the Port Flood Detection Threshold or the Host Flood Detection Threshold, traffic from the attacker is blocked for the DOS Attack Block Duration. The default setting is 10 seconds.
- Maximum TCP Open Handshaking Count This is the maximum number (per second) of unfinished TCP handshaking sessions that are allowed before a DOS attack is detected. The default setting is 5 per second.
- Maximum Ping Count This is the maximum number of Pings (per second) that are allowed before a DOS attack is detected.
- Maximum ICMP Count This is the maximum number of ICMP packets (per second) that are allowed before a DOS attack is detected.

3. Select 'Clear Blacklist' if you wish to clear all external hosts from the blacklist.
4. Select 'Apply'
5. Save Configuration
6. Restart the Vox PBX

### Security Logging

1. Select 'Security Logging...' from the left-hand side Firewall sub-menu.

#### Security Logging Configuration

**Security Logging State**  
Security Logging is enabled  
[Disable Security Logging](#)

**Security Event Logging States**

Logging Type	Status	State	Level	Output to:
Session Logging	Enabled Level: notice Output to Event Log	<a href="#">Disable</a>	notice <input type="button" value="Change"/>	Console
Blocking Logging	Enabled Level: notice Output to Event Log	<a href="#">Disable</a>	notice <input type="button" value="Change"/>	Console
Intrusion Logging	Enabled Level: notice Output to Event Log	<a href="#">Disable</a>	notice <input type="button" value="Change"/>	Console

[Return to Firewall Configuration...](#)

Logging is enabled by default for Session Logging, Blocking Logging and Intrusion Logging.

2. To disable all logging select 'Disable Security Logging'.

### Session Logging, Blocking Logging and Intrusion Logging.

1. To disable any of the above select 'Disable'

One of eight logging levels for reporting can be selected from the drop down menu

- Emergency

- Alert
- Critical
- Error
- Warning
- Notice
- Informational
- Debug

The output can be directed to the Console or the Event Log.

#### Application Level Gateways

There are certain applications that NAT and Firewall configurations cannot manage. In many cases, ALGs (Application Level Gateways) are needed to translate and transport packets correctly. An ALG provides a service for a specific application such as FTP (File Transfer Protocol). Incoming packets are checked against existing NAT rules or Firewall filters, IP addresses are evaluated and detailed packet analysis is performed. If necessary, the content of a packet is modified, and if a secondary port is required, the ALG will open one. The ALG for each application does not require any configuration.

ALG support is provided for the following applications.

Application	TCP Port	UDP Port
AIM (AOL Instant Messier)	5190	N/A
FTP (File Transfer Protocol)	21	N/A
IKE (Internet Key Exchange)	N/A	500
ILS (Internet Locatif Service)	389 (+1002)	N/A
MSN (Microsoft Networks)	1863	N/A
PPTP (Point-to-Point Tunnelling Protocol)	1723	N/A
RSVP (Resource Reservation Protocol)	N/A	N/A
L2TP (Layer 2 Tunnelling Protocol)	N/A	1701
SIP (Session Initiation Protocol)	5060	5060

## Diagnostics

A range of tests is available which can help in diagnosing problems. Select Diagnostics on the left-hand menu. The following screen is displayed: -



### ADSL Status

You can use the ADSL Status to identify any problems. Select *DSL* status to see how your DSL connection is performing by looking at the DSL status screen.' The following screen is displayed: -

#### DSL Port: Status

Operational mode	<b>Inactive</b>
State	<b>HandShake</b>
Trained transmit bit rate	<b>0 kbps</b>
Trained receive bit rate	<b>0 kbps</b>
Upstream power	<b>0.0 dB</b>
Local Fast channel FEC error count	<b>0</b>
Local Interleaved channel FEC error count	<b>0</b>
Local Fast channel CRC	<b>0</b>
Local Interleaved CRC	<b>0</b>
Local line attenuation	<b>0.0 dB</b>
Local signal-to-noise margin	<b>0.0 dB</b>
Local LOS	<b>0</b>
Local SEF	<b>0</b>
Remote Fast channel FEC error count	<b>0</b>
Remote Interleaved channel FEC error count	<b>0</b>
Remote Fast channel CRC	<b>0</b>
Remote Interleaved CRC	<b>0</b>
Remote line attenuation	<b>0.0 dB</b>
Remote signal-to-noise margin	<b>0 dB</b>
Remote LOS	<b>0</b>
Remote SEF	<b>0</b>

The items of most significance are: -

**Operational Mode:** If this shows '*Inactive*' it means that the ADSL line is not connected. If connected the Operational mode is G.Dmt.

**State:** When this shows *Handshake* it indicates that the system is trying to connect to the ADSL line but has not synchronised with it. If it is connected and synchronised to the ADSL line it shows 'Showtime'.

**Trained transmit and receive bit rates:** These indicate the speeds that are being achieved on transmit and receive on the ADSL line.

## Logging

---

You may be requested to enable logging. When enabled the system automatically sends detailed information to a server where specialist staff can analyse it. Select Logging on the left-hand side menu. The following screen is displayed: -

### Logging

Name	Value
URL	<input type="text" value="http://195.7.32.119/diagn"/>
Interval	<input type="text" value="240"/>
Enabled	<input type="button" value="Off"/>

When requested to do so set *Enabled* to *On*. You may be requested to change the interval but in most cases this should be left at 240. When set at 240 the system automatically sends the information every four hours.

## Status

---

You can examine the settings of the WAN, DMZ, LAN, VoIP, Routing table and hardware and software.

Select Status on the left-hand side menu. The following screen is displayed: -

## Status

## WAN Status

**Connected:** No  
**Interface:** ADSL Modem  
**IP Address:** 0.0.0.0  
**Subnet Mask:** 0.0.0.0  
**Gateway:** not currently set  
**Primary DNS:** not currently set  
**Secondary DNS:** not currently set  
**IP Assignment:** Static

## DMZ Status

**IP Address:** 192.168.0.1  
**Subnet Mask:** 255.255.255.0

## LAN Status

**IP Address:** 192.168.1.1  
**Subnet Mask:** 255.255.255.0  
**MAC Address:** 00:90:7D:01:78:1C  
**DHCP Server:** Yes

## VoIP Status

**User Domain:** vphone.co.za  
**SIP Proxy:** vphone.co.za:5060  
**Username**

<b>IP Trunk 1:</b>	not configured	N/A
<b>IP Trunk 2:</b>	not configured	N/A
<b>IP Trunk 3:</b>	not configured	N/A
<b>IP Trunk 4:</b>	not configured	N/A

## Routing Table

Destination	Netmask	Gateway	Interface
192.168.1.0	255.255.255.0	0.0.0.0	iplan
192.168.0.0	255.255.255.0	0.0.0.0	ipdmz
127.0.0.0	255.0.0.0	0.0.0.0	loopback



## Note

If a VoIP Trunk is configured but not registered an **X** will be displayed after the Password. If the line is configured and registered a **✓** is displayed

## Event Log

**Event log**

**Showing all events**

(most recent events last; times are since last reboot, or real time if available):

Time	Event
2 days, 00:00:17	im: Failed to set the SMTP IP address or DNS Hostname
2 days, 00:00:17	im: Failed to set the SMTP IP address or DNS Hostname
2 days, 00:00:17	im: Failed to set the SMTP IP address or DNS Hostname
2 days, 00:00:17	im: Failed to set the SMTP IP address or DNS Hostname
2 days, 00:00:17	im: Failed to set the SMTP IP address or DNS Hostname
2 days, 00:00:40	im: Changed iplan IP address to 192.168.1.1
2 days, 00:00:40	im: Changed ipdmz IP address to 192.168.0.1

Clear these entries

**Select events to view**

Select a log...

## Call Log

The system stores records of the last 250 calls made and received. This log can be retrieved. The log is presented in a spreadsheet format.

1. Select *Call Log* in the Diagnostics drop down menu. The following menu is displayed: -

**Call Log**

This page allows you to download the call log to your computer, or remove all entries from your system.  
[Tell me more about Call Logging...](#)

**Retrieve Call Log**

Download the Call Log to your computer.

**Clear Call Log**

Remove all current Call Log entries from your system.

2. Select Download. You may be prompted to click on 'here' if the web browser blocks the download.

The records are presented in a spreadsheet format.

- I/G or O/C: Incoming or Outgoing Call
- Date: The Date the call was made
- Start Time: The time the call started
- Duration: The call duration
- Line: The line the call was made on
- Start phone: The phone that started the call
- Finish phone: The phone that finished the call
- Telephone number: The number dialled or received.

Selecting Clear Call Log can clear the call log.

## Firmware Update

When Firmware Update is selected from the left hand side menu the following screen is displayed:

### Firmware Update

To backup or restore a configuration:

- [Backup / Restore](#)

To upload new firmware:

- [Firmware Update](#)

### Backup/Restore Configuration

---

Selecting *'Backup/Restore'* allows you to backup the Vox PBX settings to your computer and restore them when necessary. These settings include all the telephone programming, speed dials etc, as well as the Internet and ADSL settings. When *'Backup/Restore'* is selected the following screen is Displayed:

### Backup/Restore Configuration

This page allows you to backup the configuration settings to your computer, or restore configuration from your computer.

[? Tell me more about backup \(restore\) configuration...](#)

#### Backup Configuration

Backup configuration to your computer.

#### Restore Configuration

Restore configuration from a previously saved file.

Configuration File

1. To save the configuration to your PC select Backup. Allow a few minutes for the file to be downloaded from the system.
2. Depending on the browser you are using you may not be prompted to allow the file to be downloaded. If so the following screen will be displayed: -

#### Backup Configuration

If the download does not start automatically, please download the configuration from [here](#).

1. Select *here*. You will be prompted to save the file on your PC.
2. To restore the configuration select *Browse* in the restore configuration window.
3. Select the saved file and press *Restore*.
4. You will be prompted to restart the Vox PBX once the file is uploaded.

#### Firmware Update

When required new versions of Firmware may be uploaded to the system by Vox Telecom. Using the web application to upload a new version of software is password protected and can only be done in conjunction with Vox personnel.

#### Firmware Update

---

The *Firmware Update* page allows you to:

- Backup and Restore configuration files for your system.
- Download an updated software version and install it on your Vox PBX



It is recommended that the current programming of your system be saved, using Save and Restore, prior to uploading the new software. This allows you to restore the system configuration after you have uploaded the new system software

#### About firmware versions

Firmware is a software program. It is stored as read-only memory on your Vox PBX. Your product manufacturer s continually improving this firmware by adding new features to it and these features are saved in later versions of the firmware.



#### Note

If there is a firmware update available you are strongly advised to install it on your Vox PBX to ensure that you take full advantage of any new feature developments.

#### Backup/Restore Configuration

This page allows you to backup the configuration settings to your computer, or restore configuration from your computer. You should backup the system configuration before you upload a new firmware version. This will ensure all programming including speed dial lists etc are saved and can be restored when the new version of software is uploaded.

### Backup/Restore Configuration

This page allows you to backup the configuration settings to your computer, or restore configuration from your computer.

[? Tell me more about backup \(restore\) configuration...](#)

#### Backup Configuration

Backup configuration to your computer.

#### Restore Configuration

Restore configuration from a previously saved file.

Configuration File

To save the configuration to your PC select **Backup**. Allow a few minutes for the file to be downloaded from the system. Depending on the browser you are using you may be prompted to allow the file to be downloaded. If so the following screen will be displayed: -

### Backup Configuration

If the download does not start automatically, please download the configuration from [here](#).

Select *here*. You will be prompted to save the file on your PC.

To restore the configuration select *Browse* in the restore configuration window. Select the saved file and press *Restore*.

You will be prompted to Restart the Vox PBX once the file is uploaded.

### Firmware update



**Note**

Before proceeding to update the system firmware, you must have downloaded the required firmware file from the appropriate Firmware update website.

- From the left-hand menu, click on *Firmware Update*. The following page is displayed:

### Firmware Update

To backup or restore a configuration:

- [Backup / Restore](#)

To upload new firmware:

- [Firmware Update](#)

- Click *Firmware Update*. The following page is displayed.

### Firmware Update

There may be a newer version of firmware for VOX PBX available. Firmware updates provide the latest features for your device.

[Tell me more about firmware updates...](#)

If you have downloaded an update manually you can install it below.

#### Manual Update Installation

To install an update you have downloaded manually, select the file in the box below, and then click on the **Update Now** button. You can manually download updated firmware from your vendor's website.

Update file:

6. Click *Browse>*. Use the *Browse file* box to navigate to the relevant directory where the firmware version is saved.
7. Once you have selected the file to be installed, click *Open*. The file's directory path is displayed in the *Update file*: text box.
8. Click *Update Now*. The following page is displayed.

### Firmware Update: Installing Update...

 This update may take several minutes; please do not perform any other activities with your device until it is complete.

 VOX PBX is now installing the latest firmware update. Once the update is installed, you will be asked to restart VOX PBX.

This may take a few moments; please wait for the installation to complete...

Installation is **0%** complete.

The page tells you that the firmware update is currently being downloaded and installed on your Vox PBX.

Once installation is complete, the following page is displayed:

### Firmware Update: Update Installed

Firmware update ready.

To complete the firmware update process, click on the **Restart** button below. A restart will briefly disconnect you from the Internet.

You must restart your Vox PBX in order to make it aware that a new firmware version has been installed. To do this, click *Restart*.

Once the system has been restarted you should restore the database if you have saved it as shown above.

## Reset to Defaults

This screen allows you to reset your Vox PBX to its default factory settings.

The configuration settings of your Vox PBX are stored in a configuration file. When you set up your Vox PBX and access the web screens for the very first time, the configuration file contains a default factory configuration. This configuration has been set by Vox Telecom for you, and contains the basic settings that you can use without having to make extensive changes to the configuration.

If you do make changes to the default configuration but then wish to revert back to the original factory configuration, you can do so by resetting the Vox PBX to factory defaults.

You may need to reset to defaults if you have made changes to Vox PBX's settings causing it not to function properly.

If you are having problems connecting to your Vox Telecom service, we may request that you reset to defaults to help in the connection process.

Remember that all your previous settings will be replaced.

### Resetting to Defaults

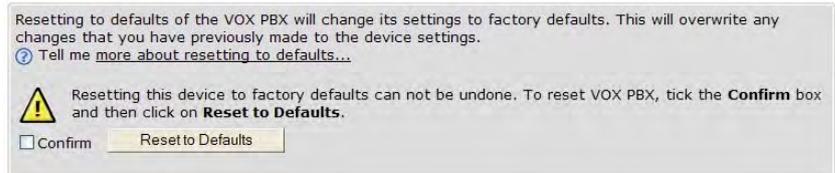


**Note**

If you reset your Vox PBX to factory defaults, all previous configuration changes that you have made are overwritten by the factory default configuration.

1. From the left-hand menu, click on *Reset to Defaults*. The following screen is displayed:

#### Reset to Defaults



2. This screen reminds you that resetting to factory defaults cannot be undone – any changes that you have made to the basic settings will be replaced.
3. If you are happy with this, click in the *Confirm* box to tick it, then click *Reset to Defaults*. The following screen is displayed:

### Resetting to Defaults...



Your device is currently resetting to factory defaults.  
There will be a short pause while the default settings are reset. You will be redirected to the Restart page when this is complete.

This screen confirms that the Vox PBX is currently resetting to factory defaults. Once the reset is complete, Restart screen is displayed.

### Reset to Defaults: Restart

Your default settings have been saved. Some configuration changes will not take effect until you restart your VOX PBX. To restart now, click the **Restart** button below. A restart will briefly disconnect you from the Internet.

Restart

4. Click *Restart*. The following screen is displayed.

### Restarting VOX PBX...



Your device is in the process of restarting.  
This may take several moments; you will be automatically redirected to the Welcome page when the restart process is complete.  
If you are not redirected within three minutes, [click here](#) to go to the Welcome page manually.

Resetting to defaults also resets the username and password to their default settings. If you previously changed the username and password by following the instructions in Password on screen, the Enter Current Password login box will be displayed. Once you have entered the default settings (admin, admin) and clicked OK, the Current Status screen is displayed.

#### Status

**WAN Status**

Connected: No  
 Interface: ADSL Modem  
 IP Address: 0.0.0.0  
 Subnet Mask: 0.0.0.0  
 Gateway: not currently set  
 Primary DNS: not currently set  
 Secondary DNS: not currently set  
 IP Assignment: Static

**DMZ Status**

IP Address: 192.168.0.1  
 Subnet Mask: 255.255.255.0

**LAN Status**

IP Address: 192.168.1.1  
 Subnet Mask: 255.255.255.0  
 MAC Address: 00:90:7D:01:78:1C  
 DHCP Server: Yes

**VoIP Status**

User Domain: vphone.co.za  
 SIP Proxy: vphone.co.za:5060

**Username**

IP Trunk 1: not configured      N/A  
 IP Trunk 2: not configured      N/A  
 IP Trunk 3: not configured      N/A  
 IP Trunk 4: not configured      N/A

**Routing Table**

Destination	Netmask	Gateway	Interface
192.168.1.0	255.255.255.0	0.0.0.0	iplan
192.168.0.0	255.255.255.0	0.0.0.0	ipdmz
127.0.0.0	255.0.0.0	0.0.0.0	loopback

## A. IP Addresses, Network Masks and Subnets

### IP Addresses



**Note**

This section refers only to IP addresses for IPv4 (version 4 of the Internet Protocol). IPv6 addresses are not covered. This section assumes basic knowledge of binary numbers, bits, and bytes.

IP addresses, the Internet's version of telephone numbers, are used to identify individual nodes (computers or routers) on the Internet. Every IP address contains four numbers, each from 0 to 255 and separated by dots (periods), e.g. 20.56.0.211. These numbers are called, from left to right, field1, field2, field3, and field4.

This style of writing IP addresses as decimal numbers separated by dots is called *dotted decimal notation*. The IP address 20.56.0.211 is read 'twenty dot fifty-six dot zero dot two-eleven.'

#### Structure of an IP address

IP addresses have a hierarchical design similar to that of telephone numbers. For example, a 7-digit telephone number starts with a 3-digit prefix that identifies a group of thousands of telephone lines, and ends with four digits that identify one specific line in that group.

Similarly, IP addresses contain two kinds of information:

- *Network ID*  
Identifies a particular network within the Internet or intranet
- *Host ID*  
Identifies a particular computer or router on the network

The first part of every IP address contains the network ID, and the rest of the address contains the host ID. The length of the network ID depends on the network's *class* (see following section). The table below shows the structure of an IP address.

	Field1	Field2	Field3	Field4
Class A	Network ID	Host ID		
Class B	Network ID		Host ID	
Class C	Network ID			Host ID

Here are some examples of valid IP addresses:

Class A: 10.30.6.125 (network = 10, host = 30.6.125)

Class B: 129.88.16.49 (network = 129.88, host = 16.49)

Class C: 192.60.201.11 (network = 192.60.201, host = 11)

#### Network classes

The three commonly used network classes are A, B, and C. (There is also a class D but it has a special use beyond the scope of this discussion.) These classes have different uses and characteristics.

Class A networks are the Internet's largest networks, each with room for over 16 million hosts. Up to 126 of these huge networks can exist, for a total of over 2 billion hosts. Because of their huge size, these networks are used for WANs and by

organisations at the infrastructure level of the Internet, such as your ISP.

Class B networks are smaller but still quite large, each able to hold over 65,000 hosts. There can be up to 16,384 class B networks in existence. A class B network might be appropriate for a large organisation such as a business or government agency.

Class C networks are the smallest, only able to hold 254 hosts at most, but the total possible number of class C networks exceeds 2 million (2,097,152 to be exact). LANs connected to the Internet are usually class C networks.

Some important notes regarding IP addresses:

The class can be determined easily from field1:

field1 = 1-126: Class A

field1 = 128-191:Class B

field1 = 192-223:Class C

(field1 values not shown are reserved for special uses)

A host ID can have any value except all fields set to 0 or all fields set to 255, as those values are reserved for special uses.

#### Subnet masks



A mask looks like a regular IP address, but contains a pattern of bits that tells what parts of an IP address are the network ID and what parts are the host ID: bits set to 1 mean 'this bit is part of the network ID' and bits set to 0 mean 'this bit is part of the host ID.'

*Subnet masks* are used to define *subnets* (what you get after dividing a network into smaller pieces). A subnet's network ID is created by 'borrowing' one or more bits from the host ID portion of the address. The subnet mask identifies these host ID bits. For example, consider a class C network 192.168.1. To split this into two subnets, you would use the subnet mask:

255.255.255.128

It's easier to see what's happening if we write this in binary:

11111111. 11111111. 11111111.10000000

As with any class C address, all of the bits in field1 through field3 are part of the network ID, but note how the mask specifies that the first bit in field4 is also included. Since this extra bit has only two values (0 and 1), this means there are two subnets. Each subnet uses the remaining 7 bits in field4 for its host IDs, which range from 1 to 126 hosts (instead of the usual 0 to 255 for a class C address).

Similarly, to split a class C network into four subnets, the mask is:

255.255.255.192 or 11111111. 11111111.

11111111.11000000

The two extra bits in field4 can have four values (00, 01, 10, 11), so there are four subnets. Each subnet uses the remaining six bits in field4 for its host IDs, ranging from 1 to 62.

Sometimes a subnet mask does not specify any additional network ID bits, and thus no subnets. Such a mask is called a default subnet mask. These masks are:

Class A:255.0.0.0

Class B:255.255.0.0



Class C:255.255.255.0

These are called default because they are used when a network is initially configured.

## B. Configuring Your Vox PBX via the Operator Console

### To enter system programming

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If your Station is the Programming Station you have access to the system programming options. If you select this option you will be prompted to enter the System Programming Password. If this option is selected from any other Station the display will show 'Programming Refused'. Again, the default Programming Station is Station 20.

1. From the Programming Station, press the  **PROGRAM** Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password (1111 in default) to access system programming.

### System Setup Options

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#### Displaying caller numbers and routing calls

The Caller Display Service (Caller ID) service is available on analogue lines. If you subscribe to this service, your network sends the telephone number of callers to the Vox PBX (provided the caller has not elected to restrict the network from presenting their number). The telephone number (or associated name) is displayed on the ringing Operator Consoles. The Caller ID information is also shown if the Station is equipped with a standard phone that supports the Caller ID service.

Your telephone number will also be presented to people you call, unless you restrict your number from being presented.

The caller's number will appear on the display of all Operator Consoles programmed to ring for incoming calls.

If a name is associated with the number in either the system speed dial store or the Caller ID store the name will be displayed.

A caller may choose to withhold their identity. In this case, the display will show 'Number Withheld' instead of the caller's number or name.

If the number information is not available the display will show 'Number Unavailable' instead of the caller's number or name.

If more than one caller is calling at any one time, the number displayed will be that of the first call in the queue. When this call is answered by one of the ringing Operator Consoles the number of the next call in the queue will appear on the displays of the other ringing Operator Consoles.

If your Operator Console is not ringing for the call you may examine the incoming call ID by selecting 'Examine I/C Call'.

The same information shown on the ringing Operator Consoles is then displayed.

To set up your system to display caller numbers received on analogue lines (Caller ID service)

If you subscribe to the Caller Number display service from your Network Provider then you can program the system to display the caller's number on analogue.

1. From the Programming Station, press the  Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. *Select* 'System programming'.
4. Enter the System Programming Password and select 'Lines'.
5. Press the Scroll Down Key () until 'PSTN Programming' is displayed.
6. Press the Scroll Down Key () until 'CLI detection' is displayed.
7. *Select* 'CLI detection'.
8. Select the lines that have the Caller ID service enabled. The lines you select will have a  displayed beside them.
9. Press the Hands-Free Key to finish programming.

To associate a caller number with a name, and route its calls to a station

Up to a hundred names, each a maximum of ten characters, (including spaces), may be associated with caller telephone numbers. When a number with an associated name is received, the name rather than the number is displayed. Furthermore a station number may also be associated with a telephone number. In this case an incoming call from that number will ring at only that Station.

1. From the Programming Station, press the  Key
2. Press the Scroll Down Key () until 'System Programming' is displayed.
3. *Select* 'System Programming'.
4. Enter the System Programming Password and select 'Lines'.
5. Press the Scroll Down Key () until 'CLI Programming' is displayed.
6. *Select* 'CLI Programming'.
7. Select an Index Number (01 - 30).
8. Enter the caller telephone number.
9. Press 'Confirm'.
10. Enter the name to be associated with the number. Refer to page 49 for help on how to enter names.
11. Select the destination you wish to route calls from that number to.

Caller ID Stores – storing all calls or unanswered calls

To programme the Caller ID Store to store all calls or unanswered calls only

The system Caller ID Store can store either all calls or unanswered calls only.

1. From the Programming Station, press the  Key
2. Press the Scroll Down Key () until 'System Programming' is displayed.
3. *Select* 'System programming'.
4. Enter the System Programming Password and select 'System'.
5. Press the Scroll Down Key () until 'CLI Store' is displayed.
6. *Select* 'CLI Store'.
7. *Select* 'Store All Calls' or 'Store Unanswered Calls'.
8. Press the Hands-free Key to finish programming.

#### **To set up Stations with an individual Caller ID Store**

You can programme Stations to store five numbers each. Each of these Stations will have a separate record of calls that ring on exchange lines programmed to ring their Stations only.

1. From the Programming Station, press the  Key
2. Press the Scroll Down Key () until 'System Programming' is displayed.
3. *Select* 'System Programming'.
4. Enter the System Programming Password and select 'Stations'.
5. Press the Scroll Down Key () until 'Individual CLI Stores' is displayed.
6. *Select* 'Individual CLI Stores'.
7. Select the Stations that you wish to have an individual Caller ID store. The Stations that will have a Caller ID Store will have a  displayed beside them.
8. Press the Hands-free Key to finish programming.

#### Automatic line selection

This facility allows users to make external calls without having to enter the line access codes (0,8). Pressing the Recall key and dialling the number when using standard or cordless phones or selecting the number from the internal call menu on an Operator Console makes internal calls.

1. Press the Scroll Down Key () until 'System Programming' is displayed.
2. *Select* 'System Programming'.
3. Enter the System Programming Password and select 'System'
4. *Select* 'Auto Line selection' and select 'Auto Line selection On'.

#### Paging

To protect Operator Consoles against Announcements and Voice Calls

By default, all Operator Consoles may be paged. You can page-protect each Operator Console to prevent it from being paged from either announcements or Voice Calls.

1. From the Programming Station, press the  Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. *Select* 'System programming'.

4. Enter the System Programming Password and select 'Stations'.
5. Select 'Page protection'
6. Select the Stations you wish to protect. A ♦ is displayed beside protected Stations.
7. Press the Hands-free Key to finish programming.

#### Outgoing VoIP Calls

In normal operation to make an outgoing call a line access code, 0 or 8, is dialled or a Line key is selected and the digits are dialled. To make a call over an IP line the digit 8 must be dialled or an IP Line key selected.

This feature is used to programme the Vox PBX so that outgoing calls are sent over the IP Lines independently of the line access code dialled or the line selected. It is also possible to select particular calls to go over IP lines.

1. From the Programming Station, press the  Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Lines'
5. Select 'Outgoing VoIP Calls'. Four options are displayed
  - Normal Line selection
  - All O/G Calls on VoIP
  - Selected Calls on VoIP
  - LCR

#### Normal line selection

This is the normal mode of operation where calls are made on a standard Analogue line by dialling 0 and on a VoIP line by dialling 8

#### All O/G calls on VoIP

When this option is selected all Outgoing calls will be sent over a VoIP line. If you want calls to be dialled over a standard line if the IP lines are busy then select 'Fallback to PSTN Line' which is displayed when 'All O/G calls on VoIP' is selected.

If you only want calls to be dialled over the IP lines and busy tone to be returned if they are not available make sure that the 'Fallback to PSTN line' option is not selected.

#### Selected Calls on VoIP

You can choose that particular calls be carried over the IP line. For example you may want all international calls to automatically select an IP line but all other calls to go over the Line selected.

1. In this case choose 'Selected Calls on VoIP'. Up to 50 codes each of 5 digits can be entered.
2. Enter a code (01-50).
3. Enter the digits e.g. 00 for international calls.
4. Press Confirm.
5. The option to fallback to a PSTN line is automatically selected. If this is required press Exit to return to the Index page.
6. If fallback is not wanted for this code select Fallback to PSTN line and return to the Index page.

### LCR (Least Cost Routing)

*To set up the feature you associate dialled digits (Input Codes) with the lines over which calls should be routed and with whatever network codes (Output codes) are necessary to route the call.*

In addition, you may choose to route the calls over different lines at various times of the day for optimum call rates.

The feature can be turned on permanently or activated at particular times.

Once the facility is activated, calls are automatically routed over the selected lines, and the network code (Output Code) is dialled automatically on the line before the telephone number.

1. Select 'LCR'
2. Select 'LCR On'
3. Up to 50 LCR rules may be defined (Index 01-50).
4. Enter an Index number (01-50)
5. Enter the input code and press confirm
6. In the 'Input Code' field you insert the relevant dialled digits (e.g. '00' for International calls or '001' for International calls to the USA).
7. Enter the Output code (up to 9 digits) and press confirm.
8. In the Output Code field, you insert whatever digits you want to be passed to the network. If no additional carrier access codes are required then the Output Code should match the Input Code.
9. Select 'Preferred' or 'Exclusive'.
10. Select the line or lines the call is to send on.
11. Preferred means that if the selected line is not available the call will be sent over any available line without the output code. If exclusive is selected the call will not be placed if the selected lines are busy.
12. When enabling or disabling the LCR feature the new setting does not take immediate affect. There can be a delay a of up to 1 minute for the setting to take affect.

### LCR Time bands

You can programme the Least Cost Routing facility, to be automatically turned on and off twice during a 24-hour period enabling you to tailor your call charges.

1. Select Outgoing VoIP Calls
2. Select 'LCR'
3. Select 'LCR Time bands'
4. Select 'LCR on times' You can enter two 'On' times.
5. Select 'LCR off Times'

You can enter two times at which the LCR facility is deactivated  
A Third option 'LCR weekend' is offered. When this is selected the LCR service remains active from Friday night to Monday morning; all off times over the weekend are ignored.

6. Press the Hands-free key to finish programming.

### To examine Station Lock Passwords

1. From the Programming Station, press the PROGRAM  Key
2. Press the Scroll Down Key () until 'System programming' is displayed.

3. Select '*System programming*'.
4. Enter the System Programming Password and select '*Stations*'.
5. Select '*Examine passwords*'
6. Select '*Ext. lock password*'.
7. Select the Station. The Lock Password is briefly displayed on the top line of the display.
8. Press the Hands-free Key to finish programming.

#### Call Waiting Tone Protection

Stations may present a busy Station with a Call Waiting tone, provided the busy Station is not protected against receiving Call Waiting tones. By default, all Stations are protected against receiving Call Waiting tones. However, you may programme Stations to receive Call Waiting tones.

To programme a station to receive Call Waiting tones

1. From the Programming Station, select the  PROGRAM Key
2. Press the Scroll Down Key () until '*System programming*' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select '*Stations*'.
5. Press the Scroll Down Key () until '*Tone protection*' is displayed.
6. Select the Stations you wish to allow receive Call Waiting tones. A  $\diamond$  is displayed beside those Stations allowed to receive Call Waiting tones, and a  $\blacklozenge$  is displayed beside those Stations protected against receiving Call Waiting tones. (By default, all Stations will have a  $\blacklozenge$  displayed).
7. Press the Hands-free Key to finish programming.

To protect an individual call from Call Waiting tones

If your Station can receive Call Waiting tones, you may protect each call on an individual basis from interruption.

1. When you are on a call, select '*Tone protect*' on the display.
2. From a standard telephone, the code is R725.

#### Incoming Call Handling on your Vox PBX System

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This option is used to select the Stations that are to ring for incoming calls.

##### Associating lines with Stations for Incoming Ringing

By associating lines with Stations you can have lines ringing different Stations in Day and Night modes.

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until '*System programming*' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select '*Lines*'

5. Select *'Incoming Ringing'*.
6. Select Line 1 or an Analogue Line.
7. Select *'Day'* or *'Night'*.
8. The Station menu is presented. Select the Stations that are to ring for calls on the line. A solid diamond indicates these Stations ♦.

**To select the Stations to ring when the second number is called: -**

1. Press the Scroll Down Key (⏴) until 'System programming' is displayed.
2. Select 'System programming'.
3. Enter the System Programming Password and select 'Lines'
4. Select 'Distinctive Ringing'.
5. Select the Line
6. Select Day or Night Mode
7. Select those Stations that are not to ring. In default all Stations are programmed to ring. A solid diamond, ♦, indicates the Stations that will ring.



**Note**

The programming of Stations to ring for the normal cadence on Line 1 is set under incoming Ringing programming. See page 156

#### Restricting Outgoing Calls

This feature lets you decide which lines each Station can access for outgoing calls. By default, all Stations have access to all lines.

To restrict a station from accessing a particular exchange line

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key (⏴) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Lines'.
5. Press the Scroll Down Key (⏴) until 'Outgoing restriction' is displayed.
6. Select 'Outgoing restriction'.
7. Select the Line.
8. Select the Stations to be prevented from accessing that line. A ♦ is displayed alongside those Stations that are restricted from accessing the line, and a ◇ is displayed alongside those Stations that have access to the line.
9. Press the Hands-free Key to finish programming.

To programme exchange lines to be used for incoming calls only

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key (⏴) until 'System programming' is displayed.
3. Select 'System programming'.

4. Enter the System Programming Password and select *'Lines'*.
5. Press the Scroll Down Key (⏴) until *'Incoming calls only'*.
6. Select *'Incoming calls only'*.
7. Select the lines that are to be used for incoming calls only. Lines programmed for incoming calls only will be indicated by a ♦.
8. Press the Hands-free Key to finish programming.

#### Outgoing Groups

To programme *'Lines* into groups for access using the codes 0 or 8.

Exchange lines and IP Lines can be grouped together in two Outgoing Groups. Each Outgoing Group is associated with a code. These codes are 0 or 8, with Group 1 being associated with 0, etc. Dialling a code selects a Line from the associated Outgoing Group. Group 1 = Analogue Group 2 = VoIP.

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key (⏴) until *'System programming'* is displayed.
3. Select *'System programming'*.
4. Enter the System Programming Password and select *'Lines'*.
5. Press the Scroll Down Key (⏴) until *'Outgoing groups'* is displayed.
6. Select *'Outgoing groups'*.
7. Select the Group you wish to set up. Two Groups can be set up, each with a corresponding access code – 0 or 8.
8. Select the lines to be in the Group. The lines in the Group are indicated by a ♦.
9. Press the Hands-free Key to finish programming.
10. Lines can be in one Outgoing Group only. Selecting a Line to be a member of a Group automatically removes it from all other Groups.

#### Day/Night Service

The *'Day Service'* / *'Night Service'* feature allows you to change the Stations which ring on incoming calls, change the Class of Service at each Station, and change the voice greeting heard by callers (if you have voicemail installed). These changes can take place automatically, at pre-programmed times daily, or can be invoked manually. Furthermore, the system can be programmed to remain in *'Night Service'* over the weekend.

To set the automatic start and end times for Night Service

The Automatic *'Night Service'* feature allows you to set two time bands in each twenty-four hour intervals; the system then automatically enters *'Night Service'*.

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key (⏴) until *'System programming'* is displayed.
3. Select *'System programming'*.

4. Enter the System Programming Password and select 'System'.
5. Press the Scroll Down Key (⏴) until 'Night Service' is displayed.
6. Select 'Night Service'.
7. Select 'Automatic on times'
8. Select 'On Time 1' to set the first time the Night Service turns on automatically
9. Select 'On time 2' to set the second time the Night Service turns on automatically.
10. Select the 'Automatic Off times' and set the two times that Night Service is to turn off

#### To manually turn on Night Service

The Manual Night Service feature enables you to turn Night Service on or off manually. When you turn Night Service on, the Night Service ringing and Class of Service come into operation.

At Station 20, select 'Night Service'.

#### To have Night Service remain on over weekends

The Weekend Service feature ensures that if Night Service is invoked on a Friday evening, the switch remains in Night Service until Monday morning.

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key (⏴) until System programming is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'System'.
5. Press the Scroll Down Key (⏴) until Night Service is displayed.
6. Select 'Night Service'.
7. Select 'Weekend service'. A ♦ symbol indicates the service is on and a ◊ symbol indicates it is turned off.
8. Press the Hands-free Key to finish programming
9. To cancel Weekend service, repeat as above, selecting 'Weekend service off' as the last step.

#### System Time/Date

To set the time and date on the system

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key (⏴) until System programming is displayed
3. Select 'System programming'.
4. Enter the System Programming Password and select 'System'.
5. Select 'Time and date'.
6. Enter the correct time in 24-hour format, (e.g. 2pm as 1400). The display will prompt for a date.

7. If you only wish to set the time select 'Confirm' and the display will revert to the Idle Menu.
8. Enter the date in dd/mm/yy format, (e.g. 10 December 1999 as 101299). When the date has been entered the display will revert to the Idle Menu.
9. Press the Hands-free Key to finish programming.
10. In the event of a power failure, you will need to reset the time and date.
11. Changes to the system Time will only take place when any external calls in progress at that time have cleared.
12. If the Network Provider supplies the Caller Number display service (Caller ID) the system time will be updated by the first incoming external call after 0200 hours.

#### Hold Options

When an external call is placed on hold, you can choose between supplying music, a tone, or silence to the caller. The music source can be internal, in which case it is integrated into the system and cannot be changed, or external, in which case an external source must be connected to your system.

To supply music, tone or silence to callers on hold

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'System'.
5. Press the Scroll Down Key () until 'Music on Hold' is displayed.
6. Select 'Music on hold'.
7. Select the option ('Internal Source', 'External Source', 'Tone on Hold' or 'Silence') that you want. The default is Internal Source and the  indicates current programme setting.
8. Press the Hands-free Key to finish programming.

#### Hotline

Stations can be programmed so that they automatically dial a number when they go off-hook. The number dialled can be a station or an external number.

To have a station dial a number automatically, when the handset is lifted

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Stations'.
5. Press the Scroll Down Key () until 'Hot line' is displayed.
6. Select 'Hot line'.
7. Select the Station from the Station Menu.

8. Enter the number to be dialled. If you wish to dial an external number, enter 0, or another Line access code, before the external telephone number, to select a Line.
9. Press the Hands-free Key to finish programming.



**Note**

When an Operator Console is programmed as a Hot Line, no other facilities can be invoked after it is programmed. As soon as you go off-hook on the Operator Console, the number is dialled.



**Note**

A common application for the Hot Line feature is for a fax or modem. The Station can be set to automatically select an exchange Line so the fax or modem does not have to dial 0.

### Adding and removing DECT Stations

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You can register up to four DECT cordless handsets or remove already registered handsets

To register a DECT handset

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Stations'.
5. Select 'Handset Registration'
6. Select 'Add a Handset'
7. The system is placed in handset registration mode. The power led flashes red and green.
8. Select Register on the DECT phone.
9. Enter 1234 as the PIN.

The phone will register to the Vox PBX.

To un-register a DECT handset

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Stations'.
5. Select 'Handset Registration'
6. Select 'Remove handset'
7. The registered handsets are indicated with a . Select the handset to be removed.

## Assigning Station Names

You may assign names to Stations. When a station receives an internal call, its display will show the calling Station name in the place of the calling Station number.

To assign a name to a station

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select '*Stations*'.
5. Select '*Name programming*'.
6. From the Station Menu, select the Station you want to name and enter the name. Up to ten characters (including spaces) can be entered for each name.
7. When the name is entered, select '*Confirm*'. You will be presented with the Station Menu and can continue programming other names.
8. Press the Hands-free Key to finish programming.

## Class of Service

Each Station may be programmed for a Class of Service. This determines the type of call the Station is allowed to dial. Four tables, which can be programmed with up to fifty codes, are used to implement six Classes of Service:

- By default, all Stations are in Class 1, that is, they have no restriction placed on them.
- A station placed in Class 2 is restricted from dialling the codes programmed in Table 2. (Table 2 would typically be programmed with the international access code 00).
- A station placed in Class 3 is restricted from dialling the codes programmed in Tables 2 and 3. (Table 3 would typically be programmed with non-local national access codes).
- A station placed in Class 4 is restricted to internal and emergency, (999 and 112), calls only.
- A station can be placed in Class 5 in addition to being in Class 2 or 3. In this case the codes programmed in Table 5 are allowed.
- A station can be placed in Class 6 in addition to being in Class 1, 2 or 3. In this case the codes programmed in Table 6 are restricted.
- The following table shows the types of restriction for the different Classes of Service available:

Type of restriction	Table	Class
No restriction	-	1
Restrict codes in Table 2	Table 2	2
Restrict codes in Table 2 and 3	Table 3	3
Internal and emergency calls only	-	4
Allowed codes that can be combined with Class 2 or 3	Table 5	5
Restricted codes that can be combined Class 1, 2 or 3	Table 6	6

- The emergency codes are 999 and 112.  
**Please Note: Emergency Numbers cannot be barred.**
- Both Classes 5 and 6 can be associated with the same Station.
- Class 5 cannot be associated with Class 4 Stations.

To set up Class of Service access tables

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'System'.
5. Press the Scroll Down Key () until 'Class codes' is displayed.
6. Select 'Class codes'.
7. Select the 'Table' to which you want to assign codes. (Table 2, 3, Allowed Table, or Restricted Table).
8. Select an 'Index number' and enter the code.
9. When entering a code an additional option is given on the display of your Operator Console. This option is the 'Any' key, which when selected inserts the symbol 'X' into the next character of the code (number) you are entering. The symbol 'X' will represent any number (1 to 0).
10. Select 'Confirm' when the code is entered.
11. Press the Hands-free Key to finish programming.

To restrict Station outgoing calls during the day

With this feature, you can assign the Stations to a Class of Service that will operate when the system is in 'Day Service'. On power-up, all Stations are in Class 1.

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Stations'.

5. Select '*Restriction classes*'.
6. Select '*Day Class of Service*'.
7. Select the Class you want to assign to the Stations, (Class 1 – Class 6).
8. Select the Stations to be entered in this Class.
9. Press the Hands-free Key to finish programming.
10. To restrict Station outgoing calls during the night
11. With this feature, you can assign the Stations to a Class of Service that will operate when the system is in 'Night Service'. On power-up all Stations are in Class 1.
12. From the Programming Station, press the  PROGRAM Key
13. Press the Scroll Down Key () until 'System programming' is displayed.
14. Select '*System programming*'.
15. Enter the System Programming Password and select '*Stations*'.
16. Select '*Restriction classes*'.
17. Select '*Night Class of Service*'.
18. Select the Class you want to assign to the Stations, (Class 1 – Class 6).
19. Enter the Stations to be entered in this Class.
20. Press the Hands-free Key to finish programming.

To allow Stations use System Speed Dials overriding call restrictions

You may wish to allow Stations to dial numbers entered in the System Speed Dial list, which they are restricted from dialling directly. For example, these could be numbers that Stations in Classes 2, 3 or 4 cannot dial directly. Entering these numbers into the System Speed Dial list and activating this feature on the Stations allows the restricted Stations to access these numbers. By default, this feature is not activated on any Station.

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select '*Stations*'.
5. Press the Scroll Down Key () until 'Sys. Speed no. Override' is displayed.
6. Select '*Sys. Speed no. Override*'
7. Select the Stations on which you wish to activate the feature. Those Stations allowed to dial System Speed Dial numbers not normally appropriate to their Class of Service are indicated by a .
8. Press the Hands-free Key to finish programming.



Numbers on a station's Personal Speed Dial list cannot override the Class of Service restriction of the Station

## Using Voicemail

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### Voicemail

#### Voicemail common parameters

- Up to 8 Stations can be allocated voice boxes.
- The maximum number of messages that can be stored in a Mailbox is 20 at power up. This number is programmable from 10 to 50 messages.
- The maximum message and Greeting length is programmable between 60-180 seconds. The time allocated at Power Up is 60 seconds.
- Un-retrieved messages are deleted in 15 days and retrieved messages are deleted in 8 days.
- A station must be allocated a Voice Mailbox before it can use voicemail. In default, Stations are not allocated a Voice Mailbox.

#### To allocate a Voice Mailbox to a station

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select '*Stations*'.
5. Press the Scroll Down Key () until 'Voice boxes' is displayed.
6. Select '*Voice boxes*'
7. Enter the Stations to be allocated a Voice Mailbox. Those allocated a box will be indicated by a ♦.
8. Press the Hands-free Key to finish programming.

#### Voicemail Capacity

You change the message capacity of Mailboxes from the default of 20 messages per Mailbox to a higher or lower amount from 10 to 50 depending on demand.

1. Enter the System Programming Password and select '*System*'.
2. Press the Scroll Down Key () until 'VM capacity' is displayed.
3. Select '*VM capacity*'
4. Enter the maximum number of messages to be stored per Mailbox.
5. Press the Hands-free Key to finish programming.

#### Voice Mail capacity % used

This feature tells the Administrator when the Voice Module capacity is approaching its limit. When the voice module storage reached 88% of its total capacity the system will display on the top line of Station 20 the message 'ALARM MAIL ALMOST FULL'. This text will remain on the display until the capacity falls below the 88% mark again. This allows the administrator to remind user to delete old or unwanted voice mails to free up some storage time.

The Administrator can also view the % capacity used by individual voice boxes or the system box.

1. To view this: enter system programming and select 'Stations'.
2. Scroll through the menu and select the 'VM Capacity % Used' option.
3. Select the "Answering machine" to view the % used by the Answering machine.
4. To view the % used by a station voice box select 'Stations'. A list of Stations is shown with a solid diamond indicating a station with a voice box enabled.
5. Select the required Station to view, the top line of the display will show the % of the Station's voice box that is used.

To turn on your Voice Mailbox

When a station is allocated a Mailbox 'Divert' on no answer is automatically set to the Voice Box. The Mailbox automatically answers all calls not answered by the Station.

If you wish to have all calls go immediately to the Voice Mailbox you can activate 'Divert All Calls' to the Voicemail. You turn on your Voice Mailbox by diverting calls to the number 710.

1. Select 'Station Divert' on the idle menu and choose 'Divert all calls'.
2. Select 'Divert to Voice Mail' or enter 710 as the Station number
3. If 'Divert on no answer' is activated to the Voice Mail, calls unanswered after the Voice Mailbox will answer four rings.
4. If 'Divert when busy' is activated to the Voice Mail, the Voice Mailbox will answer calls you cannot receive.

To check all Voicemail Passwords

All Station Voicemail Passwords can be examined from the Programming Station.

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Stations'.
5. Select 'Examine passwords'.
6. Select 'Voicemail password'.
7. Select the Station whose password you wish to examine. The Voicemail Password of that Station is briefly displayed on the top line of the display.
8. Press the Hands-free Key to finish programming.

Answering Machine

This feature allows you to set up an Answering Machine to answer incoming calls. You can select which lines are to be answered by the Answering Machine when it is turned on. It can be used on both Analogue lines and VoIP Lines. You can select how long a call rings before the Answering Machine answers.

All messages received are stored in a system Answering machine, which is controlled by Station 20. Station 20 can also customise the greeting. You can turn the Answering Machine service on and off at any time at Station 20 and its operation is independent of 'Night Service'.

You can use this service if you are not answering calls at lunch or at night, or simply want to record messages from callers. If desired, you can have this feature on permanently, so that calls, which are not answered for a programmable period, are answered by the Answering Machine.



If a call is received when the Voice Module storage is full, it will not be possible to store any further messages. To manage the voice mail and free up storage space see the section 'Using Voicemail and other Voice Services' on page 72.

To turn the Answering Machine on and off

1. At Station 20, press the Scroll Down Key (⏴) until 'Answering Machine' is displayed.
2. Select '*Answering Machine*'.
3. The top line of the display will display the 'Answering Machine' prompt. To turn the answering machine off press '*Answering Machine*' again.

To programme 'Lines to be answered by the Answering machine

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key (⏴) until 'System programming' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select '*Lines*'.
5. Press the Scroll Down Key (⏴) until '*Answering Machine*' is displayed.
6. Select '*Answering Machine*'.
7. Select the lines to be answered by the Answering machine. The lines that will be answered are indicated by a ♦.
8. Press the Hands-free Key to finish programming.

To set the time a call will ring before the Answering Machine answers

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key (⏴) until 'System programming' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select '*System*'.
5. Press the Scroll Down Key (⏴) until 'Timers' is displayed.
6. Select '*Timers*'.
7. Select '*Answering Machine Delay*'

8. Enter the time. The default is 010 seconds.
9. Press the Hands-free Key to finish programming.

### Remote Notification

Selecting the Stations that can activate remote notification

In default no Station can set remote notification. Those Stations that can set remote notification are programmed in system programming.

1. From the Programming Station, press the  PROGRAM key.
2. Press the Scroll Down key () until 'System Programming' is displayed.
3. Select '*System Programming*'
4. Enter the System Programming Password and select '*Stations*'.
5. Select '*Remote Notification*'.
6. Select the Stations that are to be allowed to use remote notification.

### Selecting the Number of Simultaneous Calls

The number of simultaneous remote notification calls can be set at 1 or 2.

1. From the Programming Station, press the  PROGRAM key.
2. Press the Scroll Down key () until 'System Programming' is displayed.
3. Select '*System Programming*'.
4. Enter the System Programming Password and select '*System*'.
5. Select '*Remote Notification*'.
6. Select '*Simultaneous Calls*'.
7. Enter the value 1 or 2 and press '*Confirm*'.

The default value is set at 1.

### Selecting the Number of Retry Attempts

The number of simultaneous remote notification calls can be set at 1 or 2.

1. From the Programming Station, press the  PROGRAM key.
2. Press the Scroll Down key () until 'System Programming' is displayed.
3. Select '*System Programming*'.
4. Enter the System Programming Password and select '*System*'.
5. Select '*Remote Notification*'.
6. Select '*Retry attempts*'.
7. Enter the value from 2 to 15 and press '*Confirm*'.

The default value is set at 2.

Selecting the Line Group that the Remote Notification calls are to use

The outgoing line group to be used for remote notification calls can be changed.

1. From the Programming Station, press the  PROGRAM key.
2. Press the Scroll Down key () until 'System Programming' is displayed.
3. Select '*System Programming*'.

4. Enter the System Programming Password and select 'System'.
5. Select 'Remote Notification'.
6. Select 'Outgoing group'.
7. Select the group.

#### Notification delay timer

The time interval between receiving a message and making the first remote notification attempt is programmable. This is set at 15 minutes (900 seconds) in default and can be set between 1 and 30 minutes (60 - 1800 seconds).

1. From the Programming Station, press the  PROGRAM key.
2. Press the Scroll Down key () until 'System Programming' is displayed.
3. Select 'System Programming'.
4. Enter the System Programming Password and select 'System'.
5. Select 'Timers'.
6. Select 'Notification Delay'.
7. Enter the value between 60 and 1800 seconds and press 'Confirm'.

#### Notification interval timer

If a remote notification fails this is the time the system waits before retrying the call. This is set at 5 minutes (900 seconds) in default. The range is 1-15 minutes (60 - 900 seconds).

1. From the Programming Station, press the  PROGRAM key.
2. Press the Scroll Down key () until 'System Programming' is displayed.
3. Select 'System Programming'.
4. Enter the System Programming Password and select 'System'.
5. Select 'Timers'.
6. Select 'Notification Interval'.
7. Enter the value between 60 and 900 seconds and press 'Confirm'.

### Programming Additional System Options

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#### Door station

To set up a Door Station on your System

From the Programming Station, press the  PROGRAM Key

1. Press the Scroll Down Key () until 'System programming' is displayed.
2. Select 'System programming'.
3. Enter the System Programming Password and select 'System'.
4. Select 'Door Station'.
5. Select 'Door Station equipped'.
6. Press the Hands-free Key to finish programming.

To program which stations can operate the Doorstrike

1. From the Programming Station, press the PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.

3. Select '*System programming*'.
4. Enter the System Programming Password and select '*Stations*'.
5. Press the Scroll Down Key (⏴) until 'Open door restriction' is displayed.
6. Select '*Open door restriction*'.
7. Select which stations are restricted from opening the door. The stations restricted from operating the Doorstrike will be indicated with a ♦.

Press the Hands-free Key to finish programming.

#### External Diversion Options

This allows you to decide if External callers or External and internal Callers to your Station are diverted externally if you have set an external divert. It also allows Stations to be prohibited from activating an external diversion.

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key (⏴) until 'System programming' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select '*Stations*'.
5. Press the Scroll Down Key (⏴) until 'External Diversion' is displayed.
6. Select '*External diversion*'.
7. Select '*No trunk to trunk calls*'.
8. Select the Stations that are not allowed to activate an external diversion or set up trunk-to-trunk calls.
9. If both internal and external calls are to be diverted select '*All calls*'.
10. If external calls only are to be diverted select '*External calls only*'

#### Miscellaneous system configuration options

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##### To change the Programming Station

System programming can only be carried out at one Operator Console, that is, the Operator Console connected to the Programming Station. By default, Station 20 is the Programming Station. The Programming Station can be changed to any other Station if required.

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key (⏴) until 'System programming' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select 'System'.
5. Select '*Programming position*'.
6. Select the Station you wish to have as the Programming Station. The selected Programming Station is denoted by a ♦.

7. Press the Hands-free Key to finish programming.

#### To change the System Programming Password

The default System Programming Password (1111) can be changed to any 4-digit number.

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select 'System'.
5. Select '*Change password*'.
6. Select '*Change*' and enter the 4-digit number you require.
7. Select '*Confirm*'.
8. Press the Hands-free Key to finish programming.

#### To configure unequipped Line interfaces

The system assumes that available Line interfaces have exchange lines connected to them. If a line interface does not have an exchange line connected ensure correct system operation by un-equipping the line interface in system programming, as follows:

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select '*Lines*'.
5. Press the Scroll Down Key () until 'Equipped Lines' is displayed.
6. Select '*Equipped lines*'.
7. Select the lines you wish to equip or unequip. Equipped lines are denoted by a ♦. Unequipped lines are denoted by a ◇.
8. Press the Hands-free Key to finish programming.

#### To configure disconnected Stations

The system assumes that all available Station interfaces have telephones connected to them. If a station interface does not have a telephone connected, ensure correct system operation by disconnecting the Station interface in system programming, as follows

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select '*Stations*'.
5. Press the Scroll Down Key () until 'Station disconnect' is displayed.
6. Select '*Station disconnect*'.

7. Select the Stations you wish to connect or disconnect. Disconnected Stations are denoted by a ♦.
8. Press the Hands-free Key to finish programming.



**Note**

When an Operator Console is connected to a station interface that is programmed as disconnected, the Operator Console display may appear as if the Operator Console is connected. However, when the handset is lifted a busy tone is heard and no options will be displayed.

#### To examine system passwords

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select '*Stations*'.
5. Press the Scroll Down Key () until 'Examine passwords' is displayed.
6. Select '*Examine passwords*'.
7. Select either '*Extn lock password*', or '*Voicemail password*', or '*Answering Machine*'.
8. If you selected 'Station lock password', the Station menu will appear. Select a station and its Station Lock Password will appear on the display.
9. If you selected 'Voicemail password', the Station menu will appear. Select a station and its Voicemail Password will appear on the display.
10. If you selected 'Answering machine', the Answering machine Password appears on the display.
11. Press the Hands-free Key to finish programming.

#### To configure Line Key Lights

When a call is placed on System Hold, you can decide if the associated Line Key Light is to flash or remain steady on all other Operator Consoles. The default setting is that the light flashes.

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select '*System*'.
5. Press the Scroll Down Key () until 'Line key light' is displayed.
6. Select '*Line key light*'
7. Choose either '*Light flashing on hold*' or '*Light steady on hold*'.
8. Press the Hands-free Key to finish programming.

#### To prohibit trunk-to-trunk calls on a station

You may prohibit individual Stations from activating External Divert, External Transfer and External Conference. (These features set up so-called trunk-to-trunk calls).

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select '*Stations*'.
5. Press the Scroll Down Key () until 'External Diversion' is displayed and select.
6. Select '*No trunk-to-trunk calls*'.
7. Select the Stations to be denied this feature. Those Stations denied the feature are indicated by a ♦.
8. Press the Hands-free Key to finish programming.

#### To Change ringing from 50 to 25Hz

This option allows the ringing frequency to be changed from the default 50Hz to 25 Hz on individual Stations.

1. From the Programming Station, press the  PROGRAM Key
2. Select '*System programming*'.
3. Enter the System Programming Password and select '*Stations*'.
4. Press the Scroll Down Key () until '25 Hz ringing' is displayed.
5. Select '*25 Hz ringing*'.
6. Select the Stations to ring at 50 Hz

The default is that all Stations are set for 25 Hz ringing.

#### Inverting ringing cadences

The external and Internal ringing cadences can be interchanged on a station-by-Station basis.

1. From the Programming Station, press the  PROGRAM Key
2. Select '*System programming*'.
3. Enter the System Programming Password and select '*Stations*'.
4. Press the Scroll Down Key () until '*Reverse Cadence*' is displayed.
5. Select '*Reverse Cadence*'.
6. Select the Stations that require the cadences changed

#### Keypad Feedback

When off hook on a station fitted with an Operator Console, a confirmation tone is played when a digit is pressed. This is so that the user knows that a digit was dialled.

1. From the Programming Station, press the  PROGRAM Key
2. Select '*System programming*'.
3. Enter the System Programming Password and select '*Stations*'.

4. Press the Scroll Down Key (⬇️) until 'Keypad Feedback' is displayed.
5. Select 'Keypad Feedback'.

Select the Stations that require the confirmation tone to be played

To configure analogue lines

There are various options to configure the analogue Line interfaces on your system. It is recommended that these settings should only be altered from the original settings if there has been a change in the network connection.

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key (⬇️) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Lines'.
5. Press the Scroll Down Key (⬇️) until 'PSTN Programming' is displayed.
6. Select 'PSTN programming'.
7. Select the desired option as detailed in the table below. The options are either explained in the following pages or in the referenced pages
8. Press the Hands-free Key to finish programming.

ANALOGUE Programming Option	Default setting	Alternate setting
Caller ID Detection	Caller ID not set	Caller ID set
Dialtone detection	On	Off
Distinctive Ringing	Distinctive Ringing not set	Distinctive ringing set

Programming Caller ID Detection

If the Caller ID service is provided on your standard analogue line the system must be programmed to detect the Caller ID information. The default is that the system does not detect the Caller ID information.

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key (⬇️) until 'System programming' is displayed.
3. Select 'System programming'.
4. Enter the System Programming Password and select 'Lines'.
5. Press the Scroll Down Key (⬇️) until 'PSTN programming' is displayed.
6. Select 'PSTN programming'.
7. Press the Scroll Down Key (⬇️) until 'CLI Detection' is displayed.
8. Select 'CLI Detection'. The lines with 'Caller ID Detection' programmed are indicated with a ♦.

### Programming Dialtone Detection

This feature is provided as a programmable option under PSTN programming and is enabled to prevent the system from dropping the line when dial tone has not been detected. When enabled dial tone is not detected and the line is released if no digit is dialled until the expiration of the 'Dialling time-out timer'.

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select '*Lines*'.
5. Press the Scroll Down Key () until '*PSTN programming*' is displayed.
6. Select '*PSTN programming*'.
7. Press the Scroll Down Key () until ' Dial tone detection' is displayed.
8. Select '*Dialtone detect*' the lines with ' Dial tone detection' enabled are indicated with a .

### Button Hopping

When Button hopping is enabled if you press a second line key while on a call on another line the first call is disconnected. With button hopping off the first call is placed on hold when the second line key is pressed.

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select '*System*'.
5. Press the Scroll Down Key () until 'Button Hopping' is displayed.
6. Select *Button hopping On or Off* as required.

### To set system timers

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You can set various timers from the Programming Station to suit your requirements.

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select '*System*'.
5. Press the Scroll Down Key () until 'Timers' is displayed.
6. Select '*Timers*'.
7. Select the required timer to be changed and enter the duration. (See table below).
8. Confirm the new time.

9. Press the Hands-free Key to finish programming.

Timers	Range	Default setting
Recall on hold	001 – 1800	90 seconds
Recall on transfer	001 – 180	90 seconds
Call park	001 – 600	180 seconds
Ringback time duration	01 – 30	30 seconds
Answer machine delay	01 – 30	10 seconds
Programmable message length	30 - 180	120 seconds

#### Recall on Hold

This is the time that elapses before a call, which has been placed on hold, rings back the Station that put the call on hold.

#### Recall on transfer

This is the time that elapses before a call, which has been transferred and not answered, rings back the Station that attempted the transfer.

#### Divert on no answer

This is the time that elapses before a call ringing at a station, with 'Divert On No Answer' set, is diverted.

#### Call Park

This is the time that elapses before a call placed on 'Call Park' rings back the parked call Station

#### Ringback time duration

This is the time a station will ring when Ringback has been invoked.

#### Ans. Machine delay

This is the time that elapses before an unanswered incoming call is presented with the Answering Machine greeting.

#### Programmable message length

This is the maximum length of a message left in a Mailbox or a Greeting for a Mailbox.

#### To reset your system

There are two system-reset options available – a warm and a cold reset.

1. From the Programming Station, press the  PROGRAM Key
2. Press the Scroll Down Key () until 'System programming' is displayed.
3. Select '*System programming*'.
4. Enter the System Programming Password and select '*System*'.
5. Press the Scroll Down Key () until 'Reset options' is displayed.
6. Select '*Reset!*' or '*Reset to default!*'



These are complete system resets, not individual Station resets. Selecting 'Reset!' (Warm reset) will reset the system and cut off all established calls. Selecting 'Reset to default!' (Cold reset) will reset the system, cut off all established calls and remove all programming from the system.

## C. Glossary

<b>802.11</b>	A family of specifications for wireless LANs developed by a working group of the IEEE. This is an Ethernet protocol often called Wi-Fi.
<b>10BASE-T</b>	A designation for the type of wiring used by Ethernet networks with a data rate of 10 Mbps. Also known as Category 3 (CAT 3) wiring. See <i>data rate</i> , <i>Ethernet</i> .
<b>100BASE-T</b>	A designation for the type of wiring used by Ethernet networks with a data rate of 100 Mbps. Also known as Category 5 (CAT 5) wiring. See <i>data rate</i> , <i>Ethernet</i> .
<b>ADSL</b>	Asymmetric Digital Subscriber Line The most commonly deployed 'flavour' of DSL for home users is asymmetrical DSL. The term asymmetrical refers to its unequal data rates for downloading and uploading (the download rate is higher than the upload rate). The asymmetrical rates benefit home users because they typically download much more data from the Internet than they upload.
<b>Analogue</b>	An analogue signal is a signal that has had its frequency modified in some way, such as by amplifying its strength or varying its frequency, in order to add information to the signal. The voice component in DSL is an analogue signal. See <i>digital</i> .
<b>ATM</b>	Asynchronous Transfer Mode a standard for high-speed transmission of data, text, voice, and video, widely used within the Internet. ATM data rates range from 45 Mbps to 2.5 Gbps. See <i>data rate</i> .
<b>Authenticate</b>	To verify a user's identity, such as by prompting for a password.
<b>Binary</b>	Binary is the 'base two' system of numbers that uses only two digits, 0 and 1, to represent all numbers. In binary, the number 1 is written as 1, 2 as 10, 3 as 11, 4 as 100, etc. Although expressed as decimal numbers for convenience, IP addresses in actual use are binary numbers; e.g., the IP address 209.191.4.240 is 11010001.10111111.00000100.11110000 in binary. See <i>bit</i> , <i>IP address</i> , <i>network mask</i> . <b>DHCP</b> Dynamic Host Configuration Protocol DHCP automates address assignment and management. When a computer connects to the LAN, DHCP assigns it an IP address from a shared pool of IP addresses; after a specified time limit, DHCP returns the address to the pool.
<b>DHCP relay</b>	Dynamic Host Configuration Protocol relay A DHCP relay is a computer that forwards DHCP data between computers that request IP addresses and the DHCP server that assigns the addresses. Each of the interfaces can be configured as a DHCP relay. See <i>DHCP</i> .
<b>DHCP server</b>	Dynamic Host Configuration Protocol server A DHCP server is a computer that is responsible for assigning IP addresses to the computers on a LAN. See <i>DHCP</i> .
<b>Digital</b>	Of data, having a form based on discrete values expressed as binary numbers (0's and 1's). The data component in DSL is a digital signal. See <i>analogue</i> .

<b>DNS</b>	<p>Domain Name System</p> <p>The DNS maps domain names into IP addresses. DNS information is distributed hierarchically throughout the Internet among computers called DNS servers. For example, <i>www.yahoo.com</i> is the domain name associated with IP address 216.115.108.243. When you start to access a web site, a DNS server looks up the requested domain name to find its corresponding IP address. If the DNS server cannot find the IP address, it communicates with higher-level DNS servers to determine the IP address. See <i>domain name</i>.</p>
<b>Domain name</b>	<p>A domain name is a user-friendly name used in place of its associated IP address. Domain names must be unique; the Internet Corporation controls their assignment for Assigned Names and Numbers (ICANN). Domain names are a key element of URLs, which identify a specific file at a web site. See <i>DNS</i>.</p>
<b>Download</b>	<p>To transfer data in the downstream direction, i.e., from the Internet to the user.</p>
<b>DSL</b>	<p>Digital Subscriber Line</p> <p>a technology that allows both digital data and analogue voice signals to travel over existing copper telephone lines.</p>
<b>Encryption keys</b>	<p>See <i>network keys</i></p>
<b>Ethernet</b>	<p>The most commonly installed computer network technology, usually using twisted pair wiring. Ethernet data rates are 10 Mbps and 100 Mbps. See also <i>10BASE-T</i>, <i>100BASE-T</i>, <i>twisted pair</i>.</p>
<b>FTP</b>	<p>File Transfer Protocol</p> <p>a program used to transfer files between computers connected to the Internet. Common uses include uploading new or updated files to a web server, and downloading files from a web server.</p>
<b>Gbps</b>	<p>Abbreviation of Gigabits per second, or one billion bits per second. Internet data rates are often expressed in Gbps.</p>
<b>Host</b>	<p>A system (usually a computer) connected to a network.</p>
<b>HTTP</b>	<p>Hyper-Text Transfer Protocol</p> <p>HTTP is the main protocol used to transfer data from web sites so that web browsers can display it. See <i>web browser</i>, <i>web site</i>.</p>
<b>Hub</b>	<p>A hub is a place of convergence where data arrives from one or more directions and is forwarded out in one or more directions. It connects an Ethernet bridge/router to a group of PCs on a LAN and allows communication to pass between the networked systems.</p>
<b>ICMP</b>	<p>Internet Control Message Protocol</p> <p>An Internet protocol used to report errors and other network-related information. The ping command makes use of ICMP.</p>
<b>IEEE</b>	<p>The Institute of Electrical and Electronics Engineers is a technical professional society that fosters the development of standards that often become national and international standards.</p>
<b>Internet</b>	<p>The global collection of interconnected networks used for both private and business communications.</p>
<b>Intranet</b>	<p>A private, company-internal network that looks like part of the Internet (users access information using web browsers) but is accessible only by employees.</p>
<b>IP</b>	<p>See <i>TCP/IP</i>.</p>
<b>IP address</b>	<p>Internet Protocol address</p> <p>The address of a host (computer) on the Internet, consisting of four numbers, each from 0 to 255, separated by periods, e.g., 209.191.4.240. An IP address consists of a <i>network ID</i></p>

---

	that identifies the particular network the host belongs to, and a <i>host ID</i> uniquely identifying the host itself on that network. A network mask is used to define the network ID and the host ID. Because IP addresses are difficult to remember, they usually have an associated domain name that can be specified instead. See <i>domain name, network mask</i> .
<b>ISP</b>	Internet Service Provider A company that provides Internet access to its customers.
<b>LAN</b>	Local Area Network a network limited to a small geographic area, such as a home or small office.
<b>LED</b>	Light Emitting Diode An electronic light-emitting device. The indicator lights on the front of the system are LEDs.
<b>MAC address</b>	Media Access Control address the permanent hardware address of a system, assigned by its manufacturer. MAC addresses are expressed as six pairs of hex characters, with each pair separated by colons. For example; <i>NN: NN: NN: NN: NN: NN</i> .
<b>Mask</b>	See <i>network mask</i> .
<b>Mbps</b>	Abbreviation for Megabits per second, or one million bits per second. Network data rates are often expressed in Mbps.
<b>NAT</b>	Network Address Translation a service performed by many routers that translates your network's publicly known IP address into a <i>private</i> IP address for each computer on your LAN. Only your router and your LAN know these addresses; the outside world sees only the public IP address when talking to a computer on your LAN.
<b>Network</b>	A group of computers that are connected together, allowing them to communicate with each other and share resources, such as software, files, etc. A network can be small, such as a <i>LAN</i> , or very large, such as the <i>Internet</i> .
<b>Network keys</b>	(Also known as encryption keys.) 64-bit and 128-bit encryption keys used in WEP wireless security schemes. The keys encrypt data over the WLAN, and only wireless PCs configured with WEP keys that correspond to the keys configured on the Vox PBX can send/receive-encrypted data.
<b>Network mask</b>	A network mask is a sequence of bits applied to an IP address to select the network ID while ignoring the host ID. Bits set to 1 mean 'select this bit' while bits set to 0 mean 'ignore this bit.' For example, if the network mask 255.255.255.0 is applied to the IP address 100.10.50.1, the network ID is 100.10.50, and the host ID is 1. See <i>binary, IP address, and subnet</i> .
<b>NIC</b>	Network Interface Card An adapter card that plugs into your computer and provides the physical interface to your network cabling. For Ethernet NICs this is typically an RJ-45 connector. See <i>Ethernet, RJ-45</i> .
<b>Packet</b>	Data transmitted on a network consists units called packets. Each packet contains a payload (the data), plus overhead information such as where it came from (source address) and where it should go (destination address).
<b>Pass phrase</b>	A secret password used in <i>WPA</i> wireless data encryption. Encryption is based on a WPA master key that is derived from the pass phrase and the network name (SSID) of the Vox PBX. The pass phrase should be at least 20 characters long in order to deter a hacker attempting to crack the pass phrase by recording a series of frames then trying commonly used

	passwords offline until one works (known as offline PSK dictionary attacks).
<b>Ping</b>	Packet Internet (or Inter-Network) Groper a program used to verify whether the host associated with an IP address is online. It can also be used to reveal the IP address for a given domain name.
<b>Port</b>	A physical access point to a device such as a computer or router, through which data flows into and out of the device.
<b>PPP</b>	Point-to-Point Protocol a protocol for serial data transmission that is used to carry IP (and other protocol) data between your ISP and your computer. The WAN interface on the Vox PBX uses two forms of PPP called PPPoA and PPPoE. See <i>PPPoA</i> , <i>PPPoE</i> .
<b>PPPoA</b>	Point-to-Point Protocol over ATM One of the two types of PPP interfaces you can define for a Virtual Circuit (VC), the other type being PPPoE. You can define only one PPPoA interface per VC.
<b>PPPoE</b>	Point-to-Point Protocol over Ethernet One of the two types of PPP interfaces you can define for a Virtual Circuit (VC), the other type being PPPoA. You can define one or more PPPoE interfaces per VC.
<b>Protocol</b>	A set of rules governing the transmission of data. In order for a data transmission to work, both ends of the connection have to follow the rules of the protocol.
<b>Remote</b>	In a physically separate location. For example, an employee away on travel who logs in to the company's intranet is a remote user.
<b>RIP</b>	Routing Information Protocol The original TCP/IP routing protocol. There are two versions of RIP: version I and version II.
<b>RJ-11</b>	Registered Jack Standard-11 The standard plug used to connect telephones, fax machines, modems, etc. to a telephone port. It is a 6-pin connector usually containing four wires.
<b>RJ-45</b>	Registered Jack Standard-45 the 8-pin plug used in transmitting data over phone lines. Ethernet cabling usually uses this type of connector.
<b>Routing</b>	forwarding data between your network and the Internet on the most efficient route, based on the data's destination IP address and current network conditions. A device that performs routing is called a router.
<b>SDNS</b>	Secondary Domain Name System (server) A DNS server that can be used if the primary DSN server is not available. See <i>DNS</i> .
<b>SSID</b>	Service Set Identifier (also known as the Extended Service Set Identifier (ESSID)) is a unique identifier that differentiates one wireless network from another. Wireless PCs configured with the same SSID can access that network.
<b>Subnet</b>	A subnet is a portion of a network. The subnet is distinguished from the larger network by a <i>subnet mask</i> that selects some of the computers of the network and excludes all others. The subnet's computers remain physically connected to the rest of the parent network, but they are treated as though they were on a separate network. See <i>network mask</i> .
<b>Subnet masks</b>	A mask that defines a subnet. See <i>network mask</i> .
<b>TCP</b>	See <i>TCP/IP</i> .

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<b>TCP/IP</b>	Transmission Control Protocol/Internet Protocol the basic protocols used on the Internet. TCP is responsible for dividing data up into packets for delivery and reassembling them at the destination, while IP is responsible for delivering the packets from source to destination. When TCP and IP are bundled with higher-level applications such as HTTP, FTP, Telnet, etc., TCP/IP refers to this whole suite of protocols.
<b>Telnet</b>	An interactive, character-based program used to access a remote computer. While HTTP (the web protocol) and FTP only allow you to download files from a remote computer, Telnet allows you to log into and use a computer from a remote location.
<b>TFTP</b>	Trivial File Transfer Protocol a protocol for file transfers, TFTP is easier to use than File Transfer Protocol (FTP) but not as capable or secure.
<b>TKIP</b>	Temporal Key Integrity Protocol (TKIP) provides WPA with a data encryption function. It ensures that a unique master key is generated for each packet, supports message integrity and sequencing rules and supports re-keying mechanisms.
<b>Triggers</b>	Triggers are used to deal with application protocols that create separate sessions. Some applications, such as NetMeeting, open secondary connections during normal operations, for example, a connection to a server is established using one port, but data transfers are performed on a separate connection. A trigger tells the Vox PBX to expect these secondary sessions and how to handle them. Once you set a trigger, the embedded IP address of each incoming packet is replaced by the correct host address so that NAT can translate packets to the correct destination. You can specify whether you want to carry out address replacement, and if so, whether to replace addresses on TCP packets only, UDP packets only, or both.
<b>Twisted pair</b>	The ordinary copper telephone wiring used by telephone companies. It contains one or more wire pairs twisted together to reduce inductance and noise. Each telephone line uses one pair. In homes, it is most often installed with two pairs. For Ethernet LANs, a higher grade called Category 3 (CAT 3) is used for 10BASE-T networks, and an even higher grade called Category 5 (CAT 5) is used for 100BASE-T networks. See <i>10BASE-T</i> , <i>100BASE-T</i> , <i>Ethernet</i> .
<b>Unnumbered interfaces</b>	An unnumbered interface is an IP interface that does not have a local subnet associated with it. Instead, it uses a <i>router-id</i> that serves as the source and destination address of packets sent to and from the router. Unlike the IP address of a normal interface, the router-id of an unnumbered interface is allowed to be the same as the IP address of another interface. For example, the WAN unnumbered interface of your Vox PBX uses the same IP address of the LAN interface (192.168.1.1). The unnumbered interface is temporary – PPP or DHCP will assign a 'real' IP address automatically.
<b>Upstream</b>	the direction of data transmission from the user to the Internet.
<b>USB</b>	Universal Serial Bus A serial interface that lets you connect units such as printers, scanners, etc. to your computer by simply plugging them in.

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<b>VC</b>	Virtual Circuit a connection from your DSL router to your ISP.
<b>VCI</b>	Virtual Circuit Identifier Together with the Virtual Path Identifier (VPI), the VCI uniquely identifies a VC. Your ISP will tell you the VCI for each VC they provide. See <i>VC</i> .
<b>VPI</b>	Virtual Path Identifier Together with the Virtual Circuit Identifier (VCI), the VPI uniquely identifies a VC. Your ISP will tell you the VPI for each VC they provide. See <i>VC</i> .
<b>WAN</b>	Wide Area Network Any network spread over a large geographical area, such as a country or continent. With respect to the Vox PBX, WAN refers to the Internet.
<b>Web browser</b>	A software program that uses Hyper-Text Transfer Protocol (HTTP) to download information from (and upload to) web sites, and displays the information, which may consist of text, graphic images, audio, or video, to the user. Web browsers use Hyper-Text Transfer Protocol (HTTP). Popular web browsers include Netscape Navigator and Microsoft Internet Explorer. See <i>HTTP, web site, and WWW</i> .
<b>Web page</b>	a web site file typically containing text, graphics and hyperlinks (cross-references) to the other pages on that web site, as well as to pages on other web sites. When a user accesses a web site, the first page that is displayed is called the <i>home page</i> . See <i>hyperlink, web site</i> .
<b>Web site</b>	a computer on the Internet that distributes information to (and gets information from) remote users through web browsers. A web site typically consists of web pages that contain text, graphics, and hyperlinks. See <i>hyperlink, web page</i> .
<b>WEP</b>	Wired Equivalent Privacy (WEP) encrypts data over WLANs. Data is encrypted into blocks of either 64 bits length or 128 bits length. The encrypted data can only be sent and received by users with access to a private <i>network key</i> . Each PC on your wireless network must be manually configured with the same key as your Vox PBX in order to allow wireless encrypted data transmissions. Eavesdroppers cannot access your network if they do not know your private key. WEP is considered to be a low security option.
<b>Wireless</b>	Wireless is a term used to describe telecommunications in which electromagnetic waves (rather than some form of wire) carry the signal over part or the entire communication path. See <i>wireless LAN</i> .
<b>Wireless LAN</b>	A wireless LAN (WLAN) is one in which a mobile user can connect to a local area network (LAN) through a wireless (radio) connection. A standard, IEEE 802.11, specifies the technologies for wireless LANs.
<b>WPA</b>	Wi-Fi Protected Access WPA is an initiative by the IEEE and Wi-Fi Alliance to address the security limitations of WEP. WPA provides a stronger data encryption method (called Temporal Key Integrity Protocol (TKIP)). It runs in a special, easy-to-set-up home mode called Pre-Shared Key (PSK) that allows you to manually enter a pass phrase on all the devices in your wireless network. WPA data encryption is based on a WPA master key. The master key is derived from the pass phrase and the network name (SSID) of the Vox PBX. It provides improved data encryption and stronger user authentication. The mode of WPA supported on your Vox PBX

**WWW**

is called Pre-Shared Key (PSK), which allows you to manually enter a type of key called a *pass phrase*.

World Wide Web

Also called *(the) Web*. Collective term for all web sites anywhere in the world that can be accessed via the Internet.

## D. Configuring your PCs

This appendix provides instructions for configuring the Internet settings on your computers to work with Vox PBX.

### Configuring Ethernet PCs

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To configure your PC to automatically obtain an IP address

By default, Vox PBX automatically assigns the required Internet settings to your PCs. You need to configure the PCs to accept this information when it is assigned.



#### Note

In some cases, you may want to assign Internet information manually to some or all of your computers rather than allow Vox PBX to do so.

If you have connected your LAN PCs via Ethernet to the Vox PBX, follow the instructions that correspond to the operating system installed on your PC:

Windows® XP PCs on page 185.

Windows 2000 PCs on page 185.

Windows Me PCs on page 186.

Windows 95, 98 PCs on page 187.

Windows NT 4.0 workstations on page 188.

If you want to allow Wireless PCs to access your Vox PBX, see section on *Wireless Setup / Security* on page.

#### Windows® XP PCs

1. In the Windows task bar, click the *Start* button, and then click *Control Panel*.
2. Double-click the Network Connections icon.
3. In the *LAN or High-Speed Internet* window, right-click on the icon corresponding to your network interface card (NIC) and select *Properties*. (Often, this icon is labelled *Local Area Connection*).
4. The *Local Area Connection* dialog box is displayed with a list of currently installed network items.
5. Ensure that the check box to the left of the item labelled *Internet Protocol TCP/IP* is checked and click *Properties*.
6. In the *Internet Protocol (TCP/IP) Properties* dialog box, click the radio button labelled *Obtain an IP address automatically*. Also click the radio button labelled *Obtain DNS server address automatically*.
7. Click *OK* twice to confirm your changes, and then close the Control Panel.

#### Windows 2000 PCs

First, check for the IP protocol and, if necessary, install it:

In the Windows task bar, click the *Start* button, point to *Settings*, and then click *Control Panel*.

Double-click the Network and Dial-up Connections icon.

In the *Network and Dial-up Connections* window, right-click the Local Area Connection icon, and then select *Properties*.

The *Local Area Connection Properties* dialog box is displayed with a list of currently installed network components. If the list includes Internet Protocol (TCP/IP), then the protocol has already been enabled. Skip to step 10.

If Internet Protocol (TCP/IP) does not display as an installed component, click *Install...*

In the *Select Network Component Type* dialog box, select *Protocol*, and then click *Add...*

Select *Internet Protocol (TCP/IP)* in the Network Protocols list, and then click *OK*.

You *may* be prompted to install files from your Windows 2000 installation CD or other media. Follow the instructions to install the files.

If prompted, click *OK* to restart your computer with the new settings.

Next, configure the PCs to accept IP information assigned by the Vox PBX:

In the *Control Panel*, double-click the Network and Dial-up Connections icon.

In the *Network and Dial-up Connections* window, right-click the Local Area Connection icon, and then select *Properties*.

In the Local Area Connection Properties dialog box, select *Internet Protocol (TCP/IP)*, and then click *Properties*.

In the *Internet Protocol (TCP/IP) Properties* dialog box, click the radio button labelled *Obtain an IP address automatically*. Also click the radio button labelled *Obtain DNS server address automatically*.

Click *OK* twice to confirm and save your changes, and then close the Control Panel.

#### Windows Me PCs

1. In the Windows task bar, click the *Start* button, point to *Settings*, and then click *Control Panel*.
2. Double-click the Network and Dial-up Connections icon.
3. In the *Network and Dial-up Connections* window, right-click the Network icon, and then select *Properties*.
4. The *Network Properties* dialog box displays with a list of currently installed network components. If the list includes Internet Protocol (TCP/IP), then the protocol has already been enabled. Skip to step 11.
5. If Internet Protocol (TCP/IP) does not display as an installed component, click *Add...*
6. In the *Select Network Component Type* dialog box, select *Protocol*, and then click *Add...*
7. Select *Microsoft* in the Manufacturers box.
8. Select *Internet Protocol (TCP/IP)* in the Network Protocols list, and then click *OK*.
9. You may be prompted to install files from your Windows Me installation CD or other media. Follow the instructions to install the files.
10. If prompted, click *OK* to restart your computer with the new settings.
11. Next, configure the PCs to accept IP information assigned by the Vox PBX:

12. In the *Control Panel*, double-click the Network and Dial-up Connections icon.
13. In *Network and Dial-up Connections window*, right-click the Network icon, and then select *Properties*.
14. In the *Network Properties* dialog box, select *TCP/IP*, and then click *Properties*.
15. In the TCP/IP Settings dialog box, click the radio button labelled **Server assigned IP address**. Also click the radio button labelled *Server assigned name server address*.
16. Click *OK* twice to confirm and save your changes, and then close the *Control Panel*.

#### Windows 95, 98 PCs

1. First, check for the IP protocol and, if necessary, install it:
2. In the Windows task bar, click the *Start* button, point to *Settings*, and then click *Control Panel*.
3. Double-click the Network icon.
4. The *Network* dialog box displays with a list of currently installed network components. If the list includes TCP/IP, and then the protocol has already been enabled. Skip to step 16.
5. If TCP/IP does not display as an installed component, click *Add...*
6. The *Select Network Component Type* dialog box displays.
7. Select *Protocol*, and then click *Add...*
8. The *Select Network Protocol* dialog box displays.
9. Click on *Microsoft* in the Manufacturers list box, and then click *TCP/IP* in the Network Protocols list box.
10. Click *OK* to return to the Network dialog box, and then click *OK* again.
11. You may be prompted to install files from your Windows 95/98 installation CD. Follow the instructions to install the files.
12. Click *OK* to restart the PC and complete the TCP/IP installation.

Next, configure the PCs to accept IP information assigned by the Vox PBX:

Open the Control Panel window, and then click the Network icon.

Select the network component labelled TCP/IP, and then click *Properties*.

If you have multiple TCP/IP listings, select the listing associated with your network card or adapter.

In the TCP/IP Properties dialog box click the IP Address tab.

Click the radio button labelled *Obtain an IP address automatically*.

Click the DNS Configuration tab, and then click the radio button labelled *Enable DNS*.

Click *OK* twice to confirm and save your changes.

You will be prompted to restart Windows.

Click *Yes*.

#### Windows NT 4.0 workstations

First, check for the IP protocol and, if necessary, install it:

1. In the Windows NT task bar, click the *Start* button, point to *Settings*, and then click *Control Panel*.
2. In the Control Panel window, double click the Network icon.
3. In the *Network dialog* box, click the *Protocols* tab.
4. The *Protocols* tab displays a list of currently installed network protocols. If the list includes TCP/IP, then the protocol has already been enabled. Skip to step 9.
5. If TCP/IP does not display as an installed component, click *Add...*
6. In the *Select Network Protocol* dialog box, select *TCP/IP*, and then click *OK*.
7. You may be prompted to install files from your Windows NT installation CD or other *media*. Follow the instructions to install the files.
8. After all files are installed, a window displays to inform you that a TCP/IP service called *DHCP* can be set up to dynamically assign IP information.
9. Click *yes* to continue, and then click *OK* if prompted to restart your computer.
10. Next, configure the PCs to accept IP information assigned by the Vox PBX:
11. Open the Control Panel window, and then double-click the Network icon.
12. In the *Network dialog* box, click the *Protocols* tab.
13. In the *Protocols* tab, select *TCP/IP*, and then click *Properties*.

In the *Microsoft TCP/IP Properties* dialog box, click the radio button labelled *Obtain an IP address from a DHCP server*.

Click *OK* twice to confirm and save your changes, and then close the Control Panel.

#### Assigning static Internet information to your PCs

If you are a typical user, you will not need to assign static Internet information to your LAN PCs because your ISP automatically assigns this information for you.

In some cases however, you may want to assign Internet information to some or all of your PCs directly (often called 'statically'), rather than allowing Vox PBX to assign it. This option may be desirable (but not required) if:

You have obtained one or more public IP addresses that you want to always associate with specific computers (for example, if you are using a computer as a public web server).

You maintain different subnets on your LAN.

Before you begin, you must have the following information available:

The IP address and subnet mask of each PC

The IP address of the default gateway for your LAN. In most cases, this is the address assigned to the LAN port on Vox PBX.

By default, the LAN port is assigned the IP address 192.168.1.1. (You can change this number or your ISP can assign another number.)

The IP address of your ISP's Domain Name System (DNS) server.

On each PC to which you want to assign static information, follow the instructions relating only to checking for and/or installing the IP protocol. Once it is installed, continue to follow the instructions for displaying each of the Internet Protocol (TCP/IP) properties. Instead of enabling dynamic assignment of the IP addresses for the computer, DNS server and default gateway, click the radio buttons that enable you to enter the information manually.



**Note**

Your PCs must have IP addresses that place them in the same subnet as the LAN port.

### Setting up your browser

1. Launch Internet Explorer.
2. Select *Tools, Internet Options.*

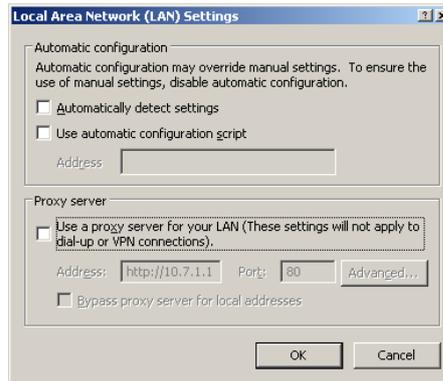


3. Select *Connections.*



If you have been using a dial up connection ensure the button *Never dial a connection* is selected

4. Select LAN Settings

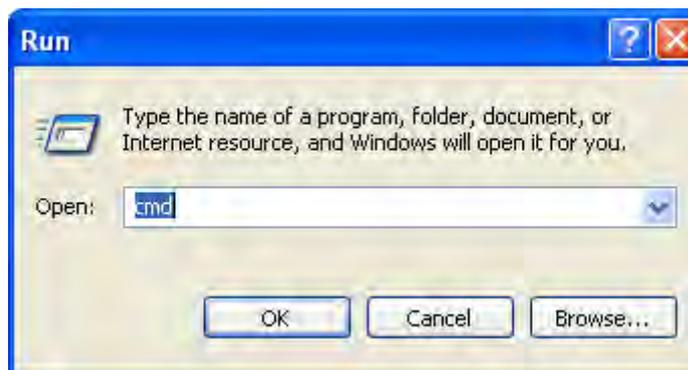


- 5. Under Proxy Server, ensure that *Use a proxy server for your LAN* is unchecked.

Locating the MAC Address on a PC

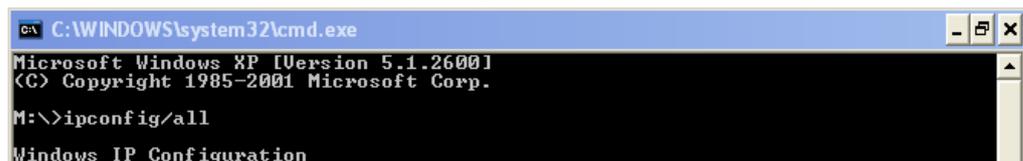
To locate the MAC address on a PC.

Click *start*  
Select *Run*

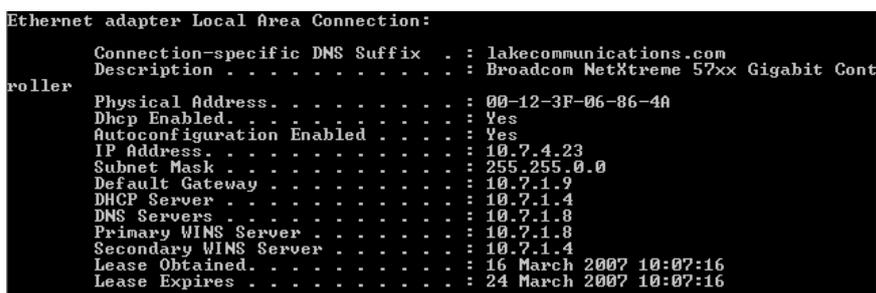


Enter *cmd* and click on OK

At the prompt type *ipconfig/all*



If you are using a wired connection the Address is shown as the physical address on the Ethernet Adapter Local area Connection



If you are using a Wireless connection the address is shown as the Physical Address on the Ethernet Wireless Network Connection

```
Ethernet adapter Wireless Network Connection:
Connection-specific DNS Suffix . : home
Description . . . . . : Intel(R) PRO/Wireless 2200BG Network
Connection
Physical Address. . . . . : 00-12-F0-55-8B-23
Dhcp Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
IP Address. . . . . : 192.168.1.2
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.1.1
DHCP Server . . . . . : 192.168.1.1
DNS Servers . . . . . : 192.168.1.1
Lease Obtained. . . . . : 16 March 2007 11:35:02
Lease Expires . . . . . : 19 March 2007 11:35:02
```

## E.

## Troubleshooting

This appendix takes you through a step-by-step procedure to help you resolve problems that you may encounter when installing or using Vox PBX.

### Cannot browse the Internet

<b>(1) Check the LEDs on the Vox PBX front panel</b>	
<b>(a) Is the Power LED on?</b>	<p><b>Yes</b> Go to <b>(b)</b></p> <hr/> <p><b>No</b> Verify that you are using the power cable provided and that it is securely connected to Vox PBX and a wall socket/power strip.</p>
<b>(b) For a wired PC</b>	<b>Yes</b> Go to <b>(d)</b>
<b>Is the Ethernet LED on?</b>	<p><b>No</b> Verify that your PC is connected to LAN port 1, 2, 3 or 4 on the Vox PBX using a Cat 5 patch cord or cable.</p>
<b>(c) For a Wireless PC</b>	<b>Yes</b> Go to <b>(d)</b>
<b>Is the Wireless LED Green?</b>	<b>No</b> Go to <b>(4) Check your WLAN settings</b>
<b>(d) Is the DSL LED on steady?</b>	<p><b>Yes</b> Go to <b>(e)</b></p> <hr/> <p><b>No</b> The LED is flashing</p> <p>Verify that the ADSL port on the Vox PBX is connected to the <i>computer</i> port on the splitter, and that the <i>line</i> port on the splitter is connected to the telephone line.</p> <p>If the above connections are correct, report the problem to Vox Telecom.</p>
<b>(e) Is the Internet LED Green?</b>	<p><b>Yes</b> Go to <b>(3) Check your PC settings</b></p> <hr/> <p><b>No</b> The LED is Red. Go to <b>(2) Check your ADSL settings.</b></p>

---

(2) Check your ADSL settings

---

(a) Enter the Vox PBX Main menu

- Select Router Configuration
- Select ADSL Modem
  - Click [Change the ADSL Modem settings here ...](#)
- Select PPPoA
  - Click Next
- Enter PPP Username, PPP Password, retype password
  - Click Next
- Select Manual
  - Enter VPI = 0, VCI = 38
  - Click Next
- Click Confirm Changes

---

(b) Is the Internet LED on the Vox PBX front panel Green?

**Yes** Go to (c)

**No** The LED is Red

Contact Vox Telecom and confirm that your *PPP Username* and *Password* are correct.

---

(c) Can you browse? **No** Go to (3) **Check your PC settings.**

---

---

(3) Check your PC settings

---

Configuring the PC settings for Windows XP are described below. For other operating systems, refer to **Appendix D, Configuring your PCs.**

- Click *start*
  - Click *Control Panel*
  - Double click *Network Connections* icon
  - Double click *Local Area Connection*
  - Under *General* tab
    - Click *Properties*
  - Under *General* tab
    - Scroll down and highlight *Internet Protocol (TCP/IP)*
    - Click *Properties*
  - Under *General* tab
    - Select *Obtain an IP address automatically*
    - Select *Obtain DNS server address automatically*
    - Click *OK*
-

---

**(4) Check your WLAN settings**


---

The following procedure assumes that the WLAN has been set up with WPA security.  
If a different security configuration has been set up, refer back to Section 10 Wireless Setup/Security

---

**(a)** Enter the Vox PBX Main menu

- Select Wireless Settings/Security  
In General Settings
- 

**(b)** *Is Wireless network enabled?***Yes** Go to **(c)**

- No**
- Click [Enable or disable the wireless network here ...](#)
  - Select Enable
  - Click Next
  - Go to **(c)**
- 

**(c)** Make a note of the Network Name**(d)** Select

Allow Vox PBX to select a channel

**(e)** Select

Wi-Fi Protected Access (WPA) on the wireless network  
Enable SSID Broadcast

---

**(f)** Re-enter the Pass Phrase and make a note of it**(g)** Select

Allow any Wireless PCs to connect  
Confirm changes  
Restart the Vox PBX

---

**(h)** *Is the Wireless LED on the system Green?***Yes** Go to **(1d)****No** Go to **(5) Check your Wireless PC settings**

---

### (5) Check your Wireless PC settings

---

The following procedure is for a PC with an Intel (PRO) Wireless Network adapter that has been set up for WPA security. For other Wireless Network adapters, consult the manufacturer's user manual. Note that some older wireless adapters do not support WPA.

- Click *start*
  - Click *Control Panel*
  - Double click *Network Connections* icon
  - Double click *Wireless Network Connection*
  - Under *General* tab
    - Click *Properties*
  - Select *Wireless Network* tab
    - Highlight the network name noted in **(4c)**
    - Click *Properties*
  - Under *Association* tab
    - Set Network Association to *WPA-PSK*
    - Set Data Encryption to *TKIP*
    - Re-enter the Network Key (this is the Pass Phrase noted in **(4f)**)
    - Confirm the Network Key
    - Click *OK*
- 

### The Diagnostics Menu

---

The following menu items are used to diagnose problems on the Vox PBX.

#### Logging

You may be requested by technical support to enable logging to allow them to remotely troubleshoot your Vox PBX. Logging is normally disabled.

#### Logging

Name	Value
URL	<input type="text" value="http://195.7.32.119/diagn"/>
Interval	<input type="text" value="240"/>
Enabled	<input type="button" value="Off"/> ▾

To enable logging, select the drop down menu for *Enabled* and select *on*.

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#### Status

The Status page shows the current status of the following elements of your Vox PBX.

WAN Status  
DMZ Status

LAN Status  
VoIP Status  
Routing Table  
Hardware Status

### Status

#### WAN Status

**Connected:** No  
**Interface:** ADSL Modem  
**IP Address:** 0.0.0.0  
**Subnet Mask:** 0.0.0.0  
**Gateway:** not currently set  
**Primary DNS:** not currently set  
**Secondary DNS:** not currently set  
**IP Assignment:** Static

#### DMZ Status

**IP Address:** 192.168.0.1  
**Subnet Mask:** 255.255.255.0

#### LAN Status

**IP Address:** 192.168.1.1  
**Subnet Mask:** 255.255.255.0  
**MAC Address:** 00:90:7D:01:78:1C  
**DHCP Server:** Yes

#### VoIP Status

**User Domain:** vphone.co.za  
**SIP Proxy:** vphone.co.za:5060  
**Username**

<b>IP Trunk 1:</b>	not configured	N/A
<b>IP Trunk 2:</b>	not configured	N/A
<b>IP Trunk 3:</b>	not configured	N/A
<b>IP Trunk 4:</b>	not configured	N/A

#### Routing Table

Destination	Netmask	Gateway	Interface
192.168.1.0	255.255.255.0	0.0.0.0	iplan
192.168.0.0	255.255.255.0	0.0.0.0	ipdmz
127.0.0.0	255.0.0.0	0.0.0.0	loopback

## Troubleshooting the PABX

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### **No incoming calls**

Check that all phones programmed to ring are not programmed for DND or divert.

### **Station outgoing locked**

If you cannot get outgoing access on a 2-wire telephone, move a Operator Console to the Station. If it shows Extn Lock, the Station has been locked and you will need the unlock code to unlock it. See page 155.

### **No Station dial tone**

Check that the Station has not been disconnected through programming see page 171.

### **Not seizing a line for outgoing calls**

Check if the line is equipped in programming see page 114 or 171

Check that the key is programmed for line access see page 51

### **Phone reset**

Remember the simple phone reset code 739, which can be dialled from any Station phone.

### **Caller Display Store is showing answered calls only. I want all calls to be shown – Missed Calls**

With Caller Display activated in both the telephone exchange and on the Vox PBX, you can choose to have all incoming callers telephone numbers added to a 'Caller ID Store' or just the unanswered calls. These can be viewed on the Vox PBX Operator Console.

In default the system is set to only store unanswered calls.

This can be changed in System Programming see page 152.

### **Power Fail problems**

If there is no electrical mains power connected to your Vox PBX and you wish to make or receive external calls, you will need to connect a standard telephone in to the Power Fail socket found on the back of the Vox PBX. There will be no internal service, no Broadband connection, Wireless LAN access or Cordless telephone (DECT) service until the power is restored.

### **Caller Display – Caller ID is not working**

For Caller Display service to work on standard exchange lines (analogue lines) it has to be enabled in both the telephone exchange and on the Vox PBX system. If the service is provided on the exchange line then to activate it on the Vox PBX you need to enter System Programming.

### **When setting the system time it does not update immediately**

The time and date will not change until all external calls in progress when the programming change is made have finished.

### **Is there any way of retrieving deleted messages?**

Unfortunately there is no facility to retrieve deleted Voicemail messages.

**Noise from the Operator Console speaker.**

There is an option on the Vox PBX system to play the music you provide for music on hold through the Operator Console speakers when the Operator Console is not being used. This feature can only be used when you provide an external music source. If the feature is turned on and an external music source is not provided the Operator Console speakers may make a low level noise. To stop this, program the feature off. Do this by selecting the Program key on the Operator Console, scroll down and select 'Background music' and select the 'OFF' option.

**Station 20 keeps ringing.**

Station 20 can be called by dialling '9' from any other Station. Consequently, if when making a call from the system the caller does not dial the line access digit but simply dials the telephone number beginning with a '0' this will call Station 20. The problem is more likely to occur when data devices, fax machines, PDQ's, Sky Digital boxes etc., which automatically dial out, are not programmed with the line access digit. The display on Station 20 will show which Station is calling.

**Operator Console not working in another Station**

If the Vox PBX system wiring has been extended an Operator Console can only be connected to any of the other hard wired Stations if the correct wires have been extended through to the telephone socket. The Operator Console requires more wires to work than an ordinary telephone. See page 23 for wiring instructions.

**Operator Console 'Hands free' does not appear to work**

The Operator Console has probably been programmed for Headset use. Select the Program key and scroll to Headset mode. Select Headset mode and select Headset off. Headset mode should only be set on when a headset is connected to the headset connection on the Operator Console and this is to be used instead of the handset