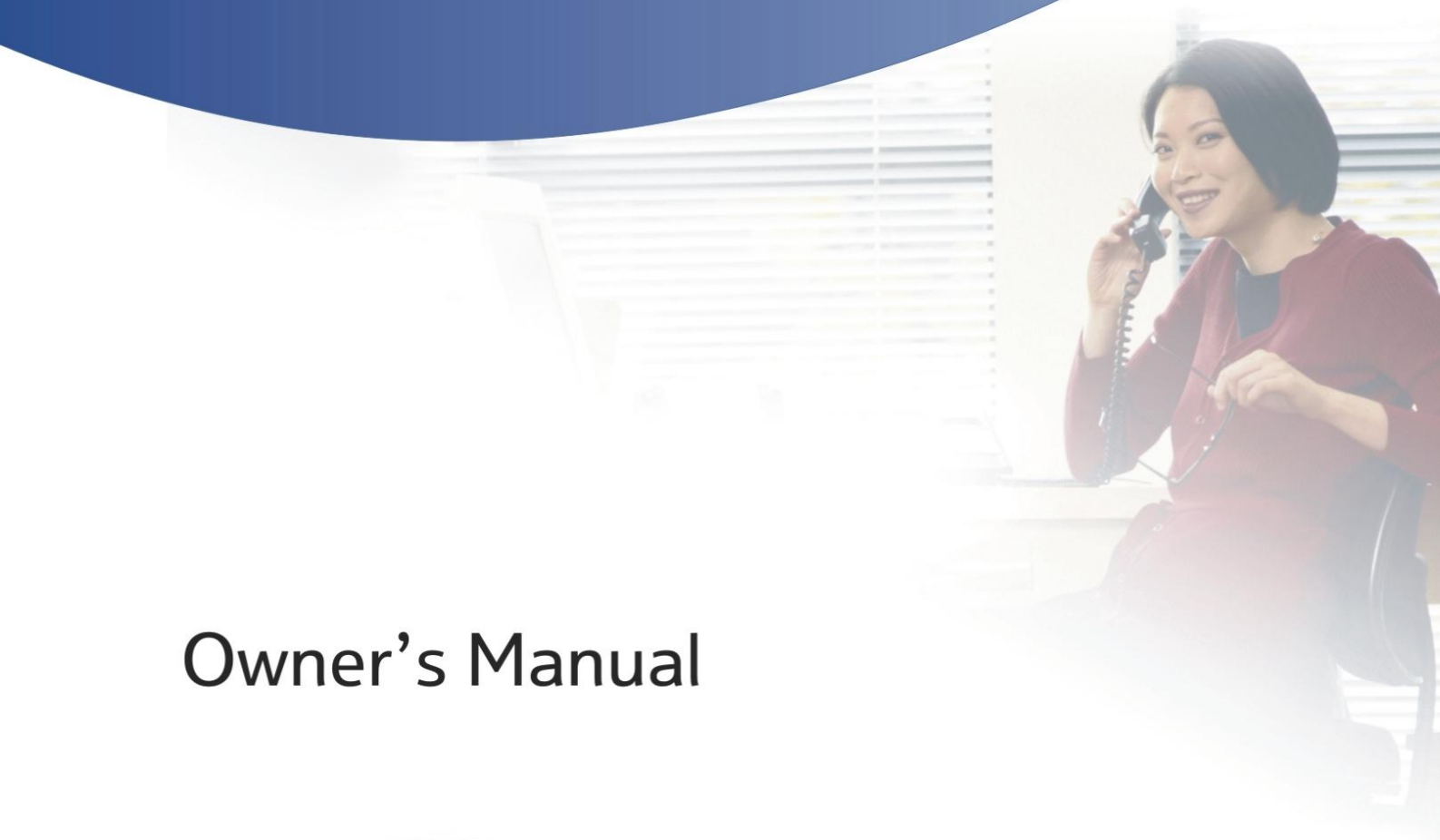
BT Micro

Communication without complication



Owner's Manual

BT

Table of Contents

1 Introduction

Congratulations on becoming the owner of the BT Micro combined voice & data communications system. You will now be able to access the Internet using your high-speed DSL connection, share your phone connection between fixed & cordless handsets and access the latest in 'Voice over IP' services.
This User Guide will show you how to connect BT Micro gateway, and how to customise the configuration to get the most out of your new product.

Conformance

This equipment is designed for use in the United Kingdom.
This equipment complies with the following standards:

CTR 10
CTR 22
EN 60950
EN 300 175, Parts 1 to 9
EN 300 328, Parts 1 & 2
EN 300 444
EN 301 406
EN 301 489, Parts 1, 6 & 17

Analogue extension ports:	TNV2
PSTN port:	TNV3
ADSL port:	TNV3
Power fail port	TNV3
LAN/WAN ports	SELV
Doorstrike Port	SELV

A Certificate of Conformity is available on request.

Safety instructions

Important Safety Instructions
When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons:
Read and understand all instructions.

- Follow all warnings and instructions marked on the product.
- Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- Do not use this product near water (for example, in a wet basement).
- Do not place this product on an unstable cart, stand, or table. The product can fall, causing serious damage to the product.
- Slots and openings in the unit and the back or bottom are provided for ventilation, to protect it from overheating; these openings must not be blocked or covered. This product should never be placed near or over a radiator or heat

register. This product should not be placed in a built-in installation unless proper ventilation is provided.

- This product should be operated only from the type of power source indicated in the manual. If you are not sure of the type of power source to your building, consult your dealer or local Power Company.
- The mains power socket outlet must be located near the product and must be easily accessible to allow plugging/unplugging.
- Do not allow anything to rest on the power cord. Do not locate this product where the cord will be abused by persons walking on it.
- Do not use an extension cord with this product's AC power cord. The AC outlet for this product should not be used for any other electrical equipment.
- Never push objects of any kind into this product through cabinet slots as they can touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.
- To reduce the risk of electric shock, do not disassemble this product, but take it to a qualified serviceman when some service or repair work is required. Opening or removing covers can expose you to dangerous voltages or other risks. Incorrect re-assembly can cause electric shock when the product is subsequently used.
- Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
  - When the power supply cord or plug is damaged or frayed.
  - If liquid has been spilled into the product.
  - If the product has been exposed to rain or water.
  - If the product does not operate normally by following the operating instructions.
  - Adjust only those controls that are covered by the operating instructions because improper adjustment of other controls can result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
  - If the product has been dropped or the cabinet has been damaged.
  - If the product exhibits a distinct change in performance.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There can be a remote risk of electric shock from lightning.
- Do not use the telephone to report a gas leak in the vicinity of the leak.
- The only user serviceable part of the product is the fuse in the mains plug (applies to UK version only). If blown, this fuse should be replaced with a 3A 25mm fuse conforming to BS1362.

Save These Instructions.

Features

The list below contains the main features of the BT Micro and may be useful to users with knowledge of networking protocols. If you are not an experienced user, the chapters throughout this guide will provide you with enough information to get the most out of your BT Micro.
Features include:
Support for 1 external PSTN line & 2 VoIP channels
Connection of up to 4 wired phone sets
DECT base station supporting 4 cordless extensions
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
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 use all the features of the BT Micro system, you must have the following:
DSL service up and running on your telephone line (or an equivalent Broadband Internet access).
Instructions from your ISP, usually a user name and password, to enable Internet access.
Instructions from BT on the settings required to configure your BT Broadband Voice (BBV) service.
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 BT Micro. Instead, you can connect up to four PCs directly to your BT Micro using the ports labelled on the rear panel.

Using this Document

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 lists 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

This document uses the following icons to draw your attention to specific instructions or explanations.

Note

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

Definition

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

WARNING

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

Product support

For product support please go to www.productsupport.bt.com

2 Getting to know your BT Micro

Parts Check

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

1BT Micro Unit

1 AC Adapter

DECT handset & charger

1 Documentation Pack

1 Main distributor frame cover (MDF)

1 Yellow (Ethernet LAN) cable RJ-45

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

1 Grey line cable (RJ-11 to BT431A)

Front Panel

The front panel contains a 'Page' button and lights called Light Emitting Diodes (LED's) that indicate the status of the BT Micro. Pressing the 'Page' button rings all the cordless handsets registered to the BT Micro.

Label	Colour	Function
Power	*Off*	*Power not connected to the BT Micro*
	Red	*Powering up or BT Micro 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*	*ADSL Line not connected or not synchronised*
	Green fast flashing	*ADSL line Connected and synchronising*
	Green. (Occasional flicker)	*ADSL line connected and synchronised*
Internet	*Off*	*ADSL line not connected*
	Red	*BT Micro attempted to make an IP connection and failed. Usually indicates that the Internet User Name or password is incorrect.*
	Solid Green	*BT Micro is IP connected and no traffic is detected*
	Flashing Green	*BT Micro is IP 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 BT Micro

These instructions are a guide to the installation and basic configuration of the BT Micro.

Locating the unit for satisfactory wireless coverage

This unit is equipped with two wireless transmitters. There is one transmitter for the DECT handsets and one for a wireless LAN that allows PCs to communicate over a wireless connection.
The range of the DECT phones and wireless LAN is affected by the orientation of the system, the number of solid walls between the unit and the cordless phones or wireless PCs and / or other interfering signals in the environment.
For best results locate the unit on the ground floor with the front of the 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 unit.

DECT handset range

The DECT handsets have a range of 300m outdoors when there is a clear line of sight between the BT Micro and the handset. When there is no clear line of sight between the handset and the system, e.g. the system is indoors and the handset is in another room or outdoors, the range will be reduced. Thick stone walls will severely affect the range.

The symbol on your handset indicates when you are in range. If you move too far away from the BT Micro during a call, your phone will sound an alert tone and will flash.

Wireless LAN Range

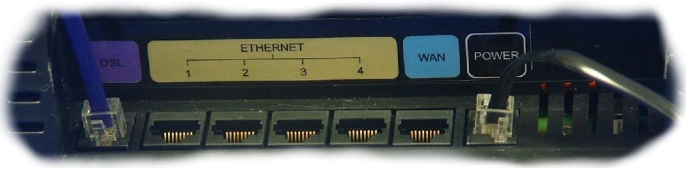
The wireless LAN speed drops the further the wireless device is away from the BT Micro. If there is a clear line of sight between the BT Micro and the wireless device it can operate at reduced speeds at up to 200m. However this range is reduced if there is no clear line of sight between the BT Micro and the wireless device. Thick stone walls will severely affect the range.

Connecting the line and making telephone calls

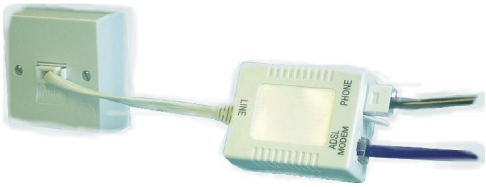
If your BT Micro came with a BT featurephone, please connect this directly to extension 20; otherwise connect a standard BT Analogue phone. If you wish to relocate the phone this should be done later.

1. Plug the line cable (grey) into the Line 1 socket on the back of the BT Micro.

2. Plug the ADSL cable (purple) into the DSL socket on the back of the BT Micro.(Marked in purple)



3. Plug the Line 1 into the phone connector and the ADSL cable into the ADSL connector on the splitter and plug the splitter to the BT wall telephone outlet.



4. Connect the power supply between the BT Micro and mains power outlet.

5. After approximately 30 seconds, you will be able to make telephone calls.

6. Register your DECT Cordless phones

   - Press the 'Page' button for 4 seconds. This button is located on the front of the BT Micro unit. This places the system in registration mode for 30 seconds. The Power LED flashes red when in registration mode.
   - Select 'REG' on the DECT phone.
   - Press OK for 'REGISTER'
   - Enter 1234 as the PIN.
   - The phone will register to the BT Micro as Handset 1 (extension number 31).
   - You can register more than one handset in the 30 seconds that the system is in registration mode. The sets are automatically allocated a Handset number (1-4) and use extension numbers (31-34).

Note

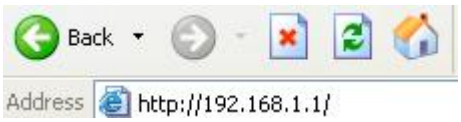
After powering on the DECT telephone(s) for the first time, the batteries should be initially charged for 14 hours to get maximum battery performance

Connecting PC(s) and configuring the BT Micro for Web Browsing

1. Connect the yellow LAN cable from the LAN port of your PC to any of the Ethernet ports (marked in yellow)

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

3. Go to the Management Application of your BT Micro by entering the following address into the web browser, **http://192.168.1.1**



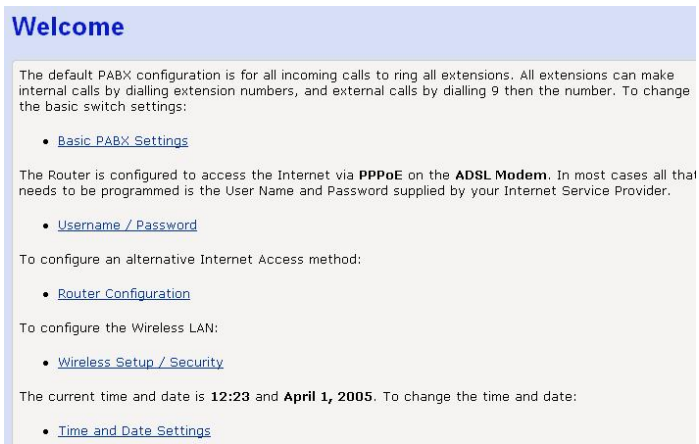
The following Log In screen is displayed

Note

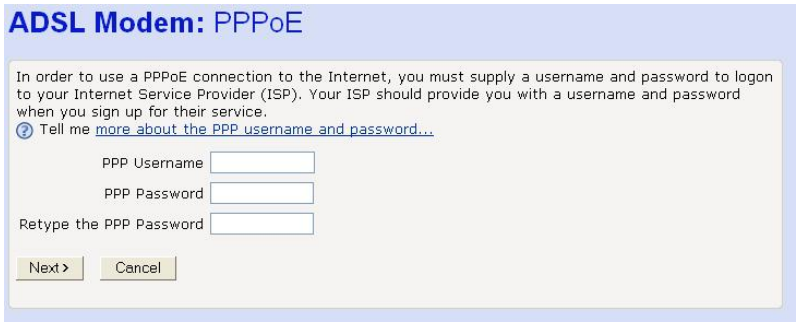
If the Log-in screen is not displayed, go to Appendix E - PC Configuration, and check the following settings:

- Your PC is set up to automatically obtain an IP address on page 198.
- Your Browser is set up not to use a proxy server on page 202.

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



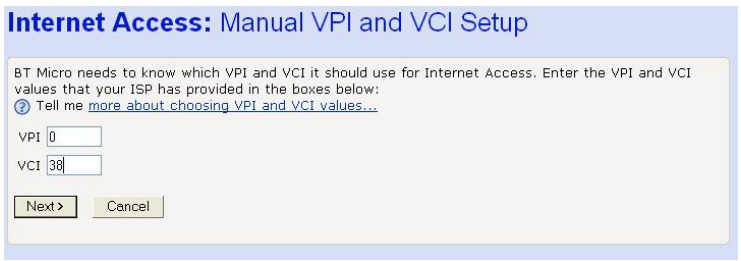
5. Click on the "Username/password" link on the welcome page**.**



Enter the Username and Password as supplied by your ISP for Internet Access. Select 'Next'.

Note

Note: In some cases a password may not be required. In this case just enter the Username.

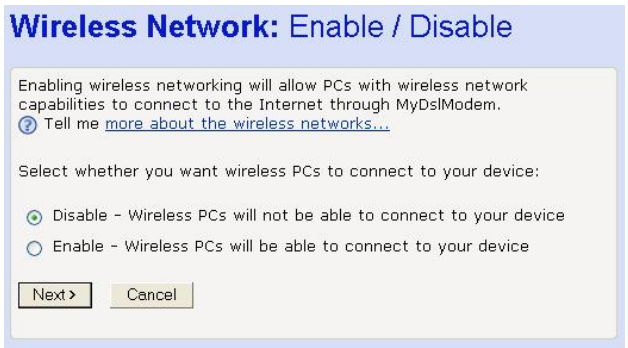


6. Confirm the settings are VPI 0, VCI 38 and press Next.
7. Confirm the configuration by selecting "Confirm Changes".

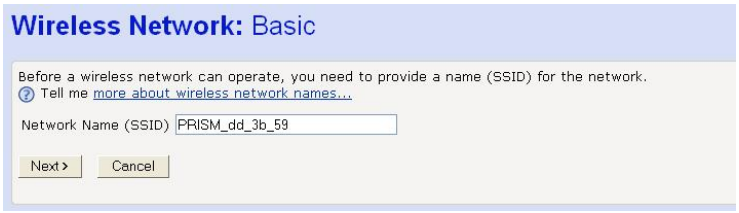
Your Broadband service is now setup. However it may take several minutes for the service to synchronise before you can start browsing.
Once the DSL LED has gone solid green with an occasional flicker and the Internet LED is solid or flashing green your BT Micro is ready to browse the Internet.
If the Internet LED is Red check the Username and Password.

Connecting Computers wirelessly

The BT Micro is supplied with the Wireless Network disabled.
If you are using the Wireless LAN it is recommended that you set it up, without security, at this stage to check functionality and coverage.
Select Wireless Setup/Security on the Welcome Page.
In the *General Settings* section Select *Enable or disable the wireless network here.*
The following screen is displayed: -



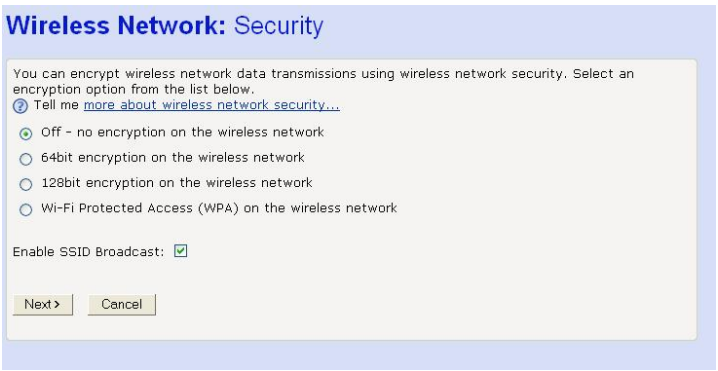
Click on the *Enable* radio button and then click *Next>*. The page allowing the Network Name to be changed is presented.



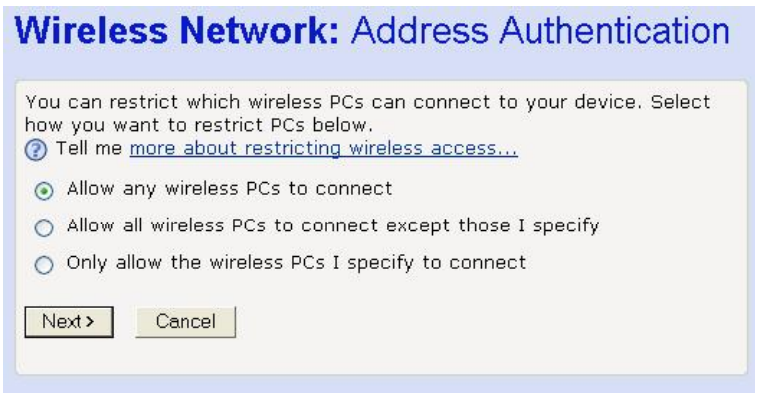
Note that the Network name starts with PRISM. This allows you to identify the network if there are other wireless networks in your locality. Select *Next.*
The following page is displayed

Select *Next*. The BT Micro will automatically select a channel.

The following page is displayed:



At this stage select Off. The following page is displayed



Click *Next>,* allowing all PCs to connect to the BT Micro. The following page is displayed:

Select *Confirm Changes.* This confirms the Wireless network settings.
Select Restart from the right hand menu.
When the BT Micro has restarted connect to the wireless network from your PC.
Check that you can browse when you are connected.
Go to all the locations where you wish the PC to operate and check that you can successfully browse. If you have problems in some areas relocate the BT Micro to increase the coverage in these areas.
Once you are happy with the location please go to page 31 and configure the security elements on the Wireless LAN.

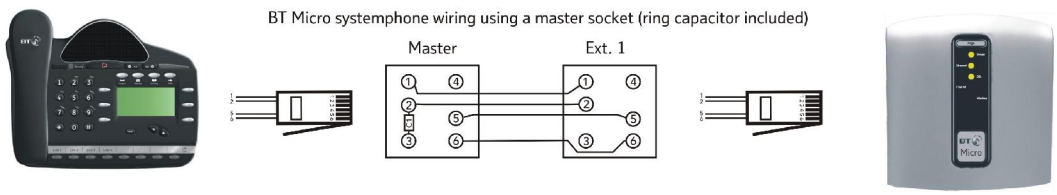
Cabling Featurephones

WARNING

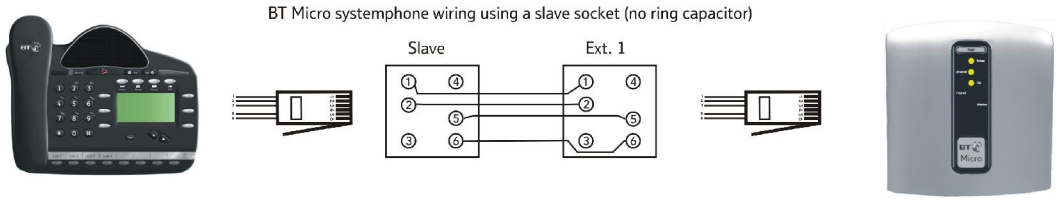
Prior to cabling the unit and fixing its location it is recommended that you check that you have located the unit in an area that gives satisfactory coverage for the DECT phones and the Wireless LAN. See page 11 for information on registering DECT phones and page 14for activation of the wireless LAN

The featurephones can be connected directly to the system using the telephone cord. If you wish to locate the phone further away from the BT Micro you can do so by running telephone cable and using telephone sockets.
Four wires are needed to connect the featurephones
It is recommended that a BT Master socket be used at the telephone end. This will allow either featurephones or standard phones to be connected without changing cabling.
The connection between the sockets is

Connection with a Master socket



Connection with a Slave socket

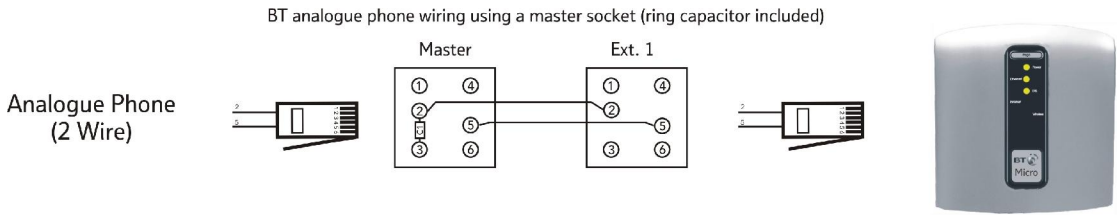


Cabling Standard telephones

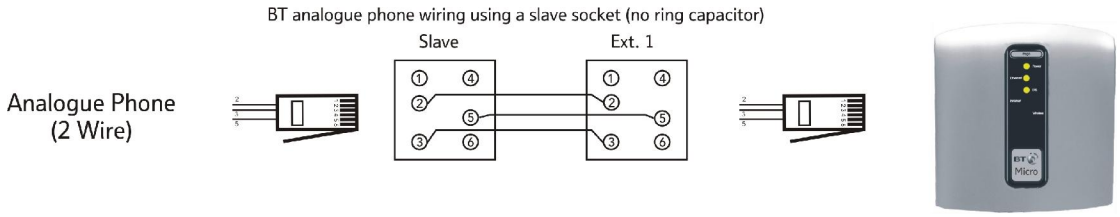
Standard telephones can be connected directly to the system using the telephone cord. If you wish to locate the phone further away from the BT Micro you can do so by running telephone cable and using telephone sockets.
It is recommended that BT Master sockets are used and that the same cabling for featurephones above is used.
However two alternatives are also available

- Using a Master socket at the phone a single pair (two wires) can be used to connect between the sockets.
- Using a slave socket at the phone it is necessary to run three cables between the sockets.

Connection with a Master socket



Connection with a Slave socket

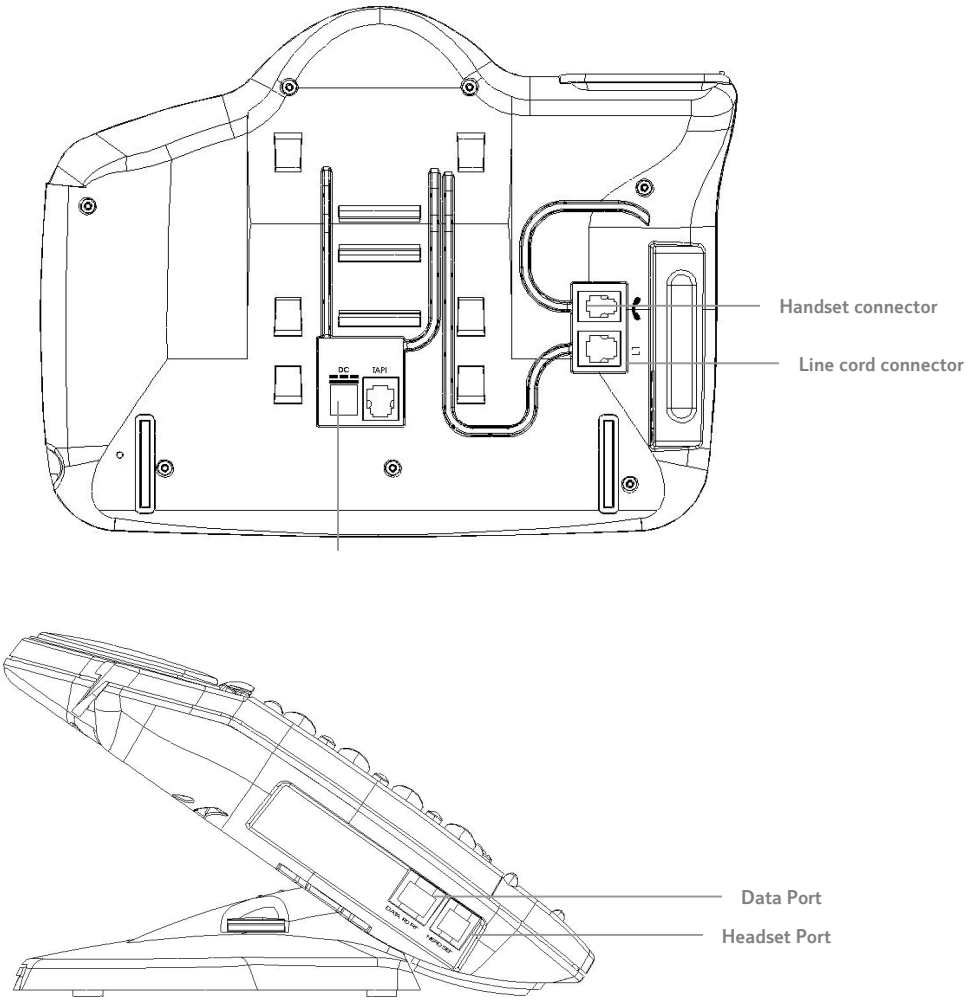


Wall Mounting the BT Micro

The BT Micro can be wall mounted. You can print this page and use it as a template for locating the wall mounting screws supplied

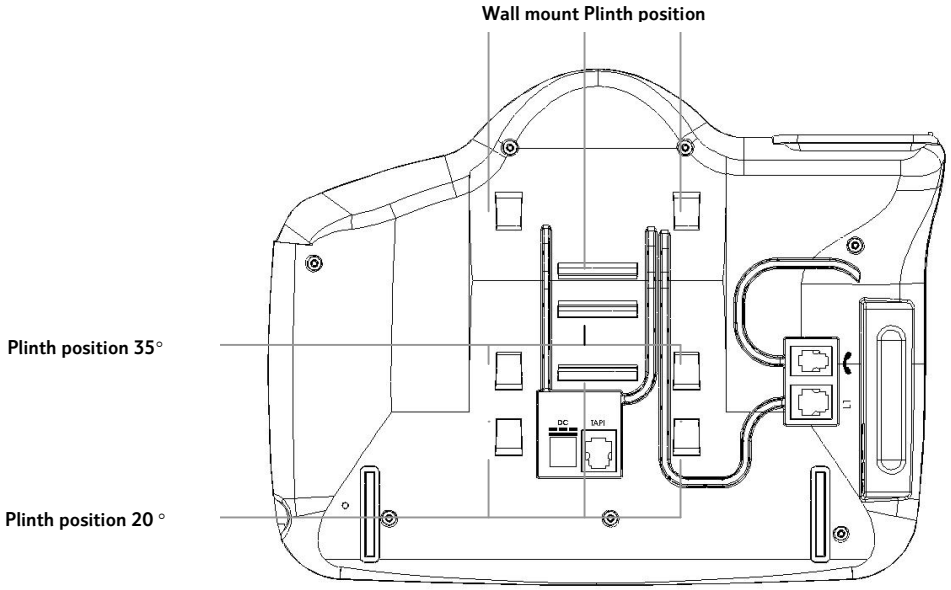
1 to 1 Template (A4 size paper)

V8 Featurephone connections (underside of phone)



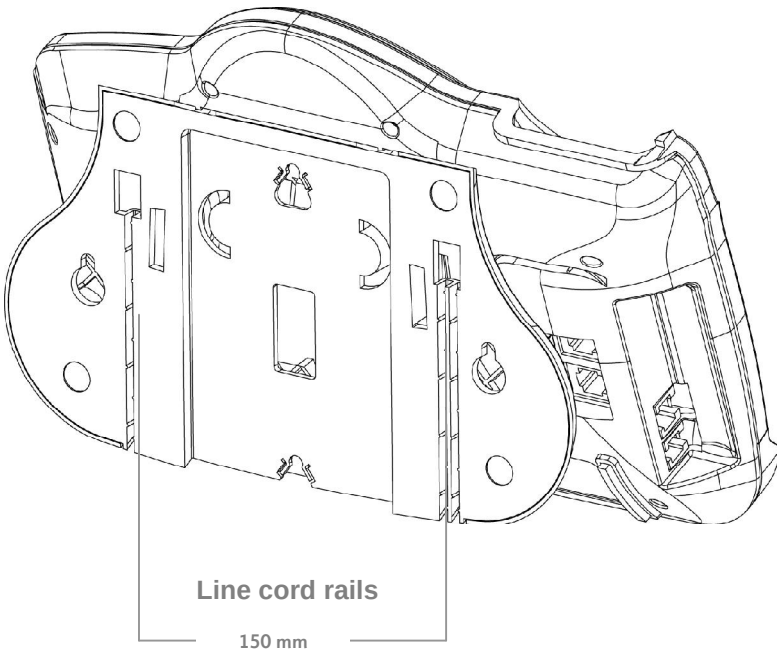
Attaching the Featurephone desk plinth

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

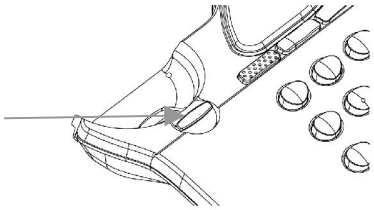


Wall-mounting a Featurephone

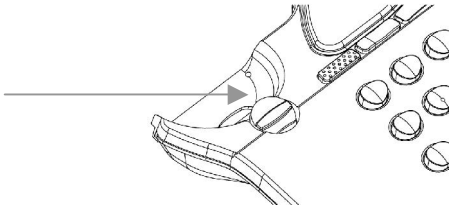
The phone plinth is inverted on the base to wall mount the phone.
Locate, drill and plug the 2 screw locations as shown below. The holes should be deep enough to accept a 2.5 cm screw. Insert the two screws leaving sufficient space to clip the base over them. Locate the phone and base over the screws.



Wall hook when the Featurephone is desk mounted

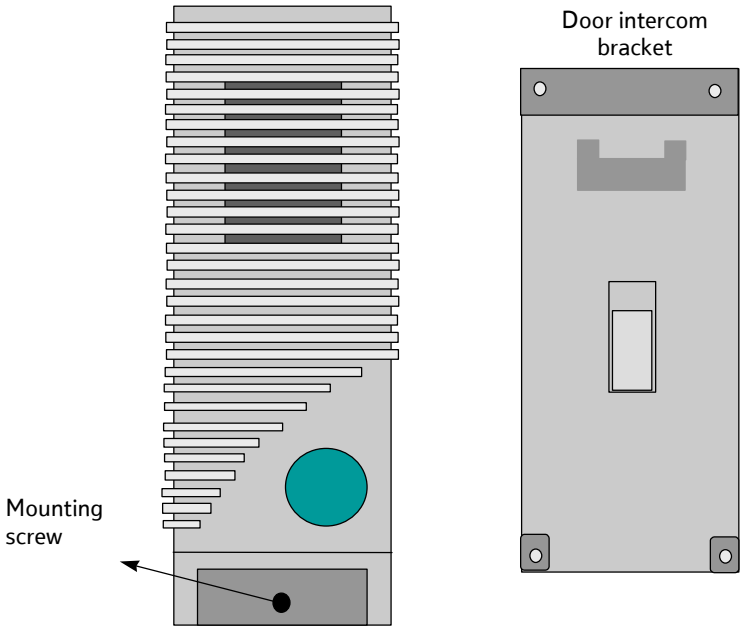


Wall hook when the Featurephone is wall mounted.



Door Intercom

The door intercom is connected to extension 23.



Connect the single pair from the door intercom to the AB connections on extension 23.
The system must be programmed to recognise the Door intercom See page 183 for programming via a featurephone and page 99 for configuration via the Web Management application.

Power Fail Telephone

Connect a standard analogue telephone to the Power Fail connector. When the BT Micro is switched off the analogue line (Line 1) 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

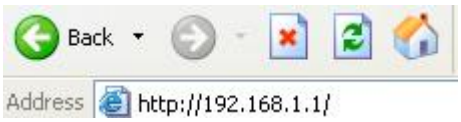
The BT Micro includes a series of Web management pages that provide an interface to the software installed on the BT Micro. It enables you to configure the BT Micro. You can access it through your web browser from any PC connected to the BT Micro via the wired or wireless LAN.

Note

By default the Wireless network card in the BT Micro is disabled. This is as a security measure to prevent unauthorised access to the BT Micro. To turn the Wireless network on, see Page 14.

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

Go to the Management Application of your BT Micro by entering the following address into the web browser, **http://192.168.1.1**



The following Log In screen is displayed

Enter your user name and password.

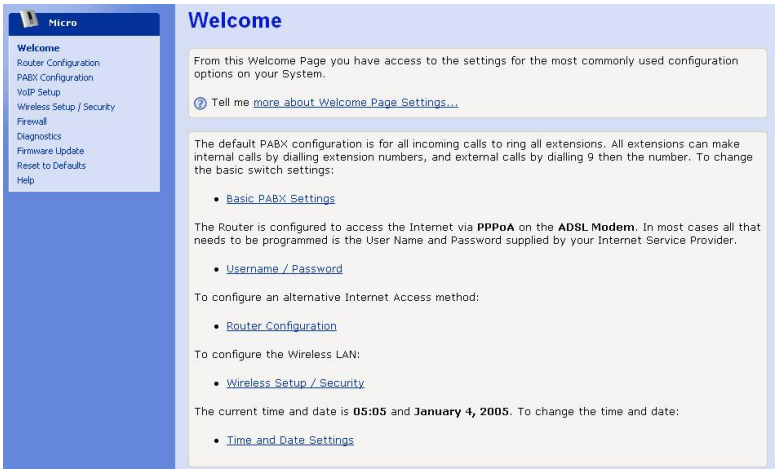
The first time you log into the program, use these defaults:

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

Note

You can change the password at any time or you can configure your BT Micro so that you do not need to enter a password. See Password on page 87

1. Click *OK*. The *Welcome* page is displayed:



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 198.

This is the first page displayed each time you log in to the Web 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 / 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

Extension Names. Programming extension names so that the names rather than extension numbers used on the featurephone

Outgoing Restriction. You can restrict extensions from making calls on particular lines.

Extension 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 Call Diverts. For each incoming line (Line 1, IP Lines 1 & 2) you can define the extension to divert the call to for the cases of No Reply, Busy & All Calls. Divert on Busy only applies if the answering extensions 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 by BT.

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*

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 extension 20.
Also, in both DAY & NIGHT modes, all calls on IP Line 1 might be set to ring on extension 23 only.
To change the settings, select ON or OFF from the relevant drop down box for the line/extension configuration you require.

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

WARNING

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.

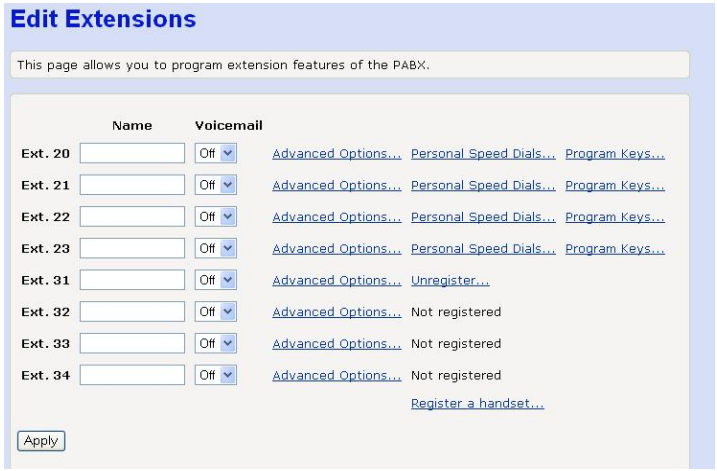
Note

To set Night mode see page 71.

Extension Names

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

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



A maximum of 10 characters per name can be entered.

Voicemail

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

WARNING

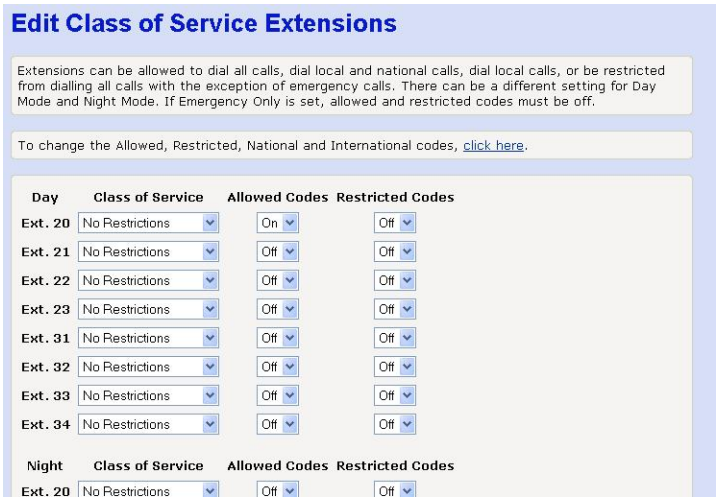
The Apply button must be clicked when the names are entered and voice mail selected. Do not select any of the other options on the page until the Apply has been clicked or the settings for the names and voice mail will be lost.

Outgoing Restriction

You can use this feature to restrict an extension from being able to make outgoing (external) calls on particular lines.
Configure the restriction for each line separately, i.e.
Turn OFF for those extensions that are not allowed to select the particular line to make outgoing calls.

Extension Class of Service

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



The following restrictions can be defined on a per extension basis:
No Restrictions

Restrict International

Local Only

Emergency Calls Only

By default ALL extensions can dial ALL destinations.

WARNING

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 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 extension 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

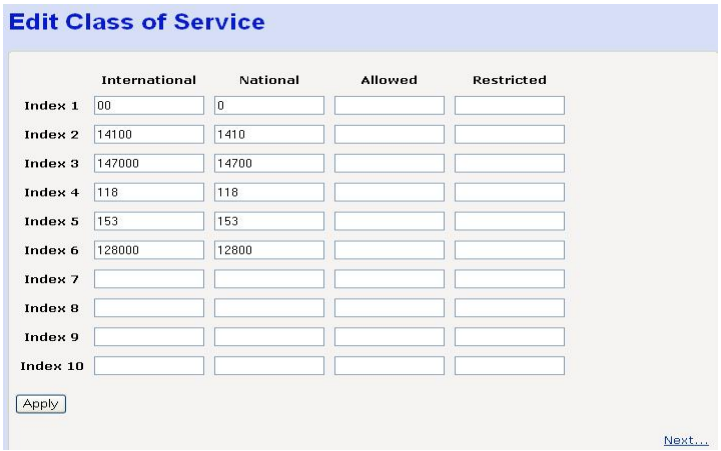
If 'Emergency Only' is set, Allowed and Restricted codes must be OFF.

Day and Night Mode

There are different settings for Day Mode and Night Mode.
To configure Day/Night mode see page 71.

Setting Class of Service Codes

The definition of what constitutes Restricted, Allowed, National & International calls is determined by the leading digits of the dialled number.



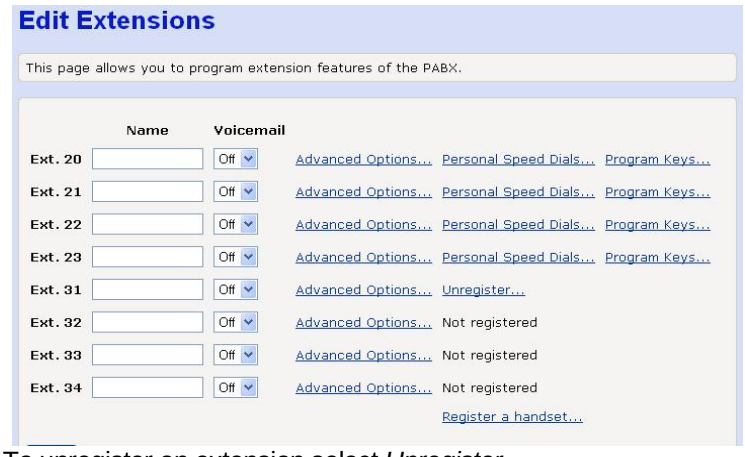
For example, numbers beginning with '00xx' normally are International calls. Numbers beginning with just a single zero '0xx' are normally considered National calls.
The definition of Allowed and Restricted codes is at the user's discretion.
50 entries can be configured in the dialling codes for International, National, Allowed & 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 Extensions'** page.

WARNING

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

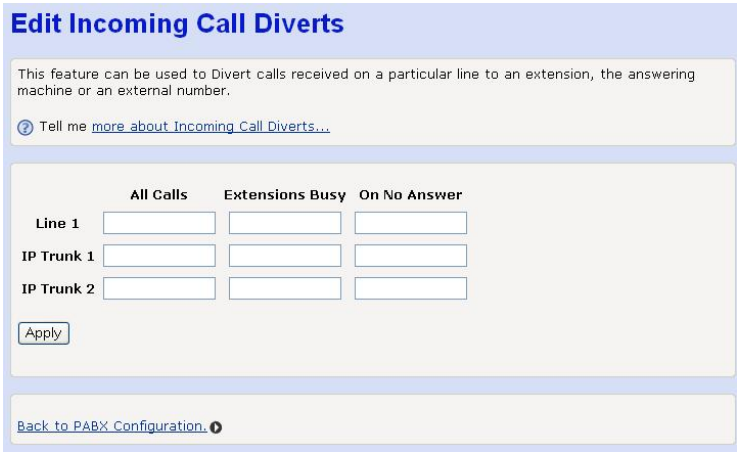
The cordless extensions are shown as registered or not registered. When *Register a handset* is selected a prompt is displayed indicating that the 'Reg' key on the cordless phone should be selected and that the PIN is 1234. The system is set in registration mode for 30 seconds



To unregister an extension select *Unregister.*

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 extension(s) ringing for the call is busy. The calls can be diverted to another extension, the answering machine or an external number.



For each incoming line (Line 1, IP Trunk 1 & 2) you can define a number to divert the call to.
To divert to another extension enter the extension 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 8 followed by the number.
Extensions busy applies if the answering extensions 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 by BT.

Note

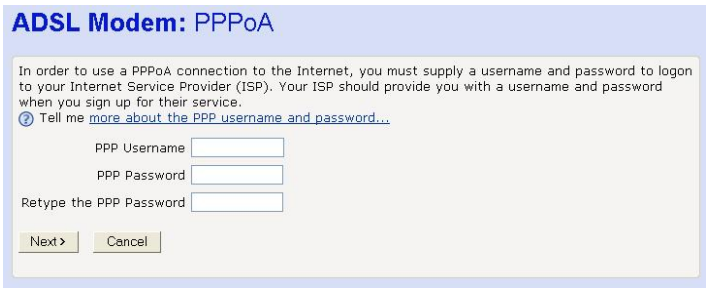
*These diversions apply only to calls received by the switch. If the Line is busy on a call a second call **cannot** be presented to the switch so these diversions **do not apply** in this case*

WARNING

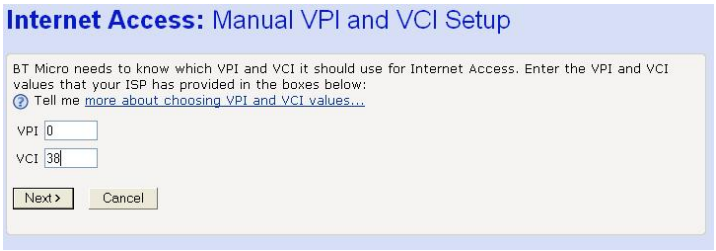
The Apply button must be clicked before the page is exited for the changes to take effect. The settings will be lost if this is not done.

Username / Password

The default settings for Internet Access are set so that the only settings that must be entered to access the Internet on the BT service are the Username and Password as supplied with your broadband service. In some cases the User Name only is supplied. In this case you enter the User Name only.
When User Name / Password is selected on the Welcome page the following page is displayed: -

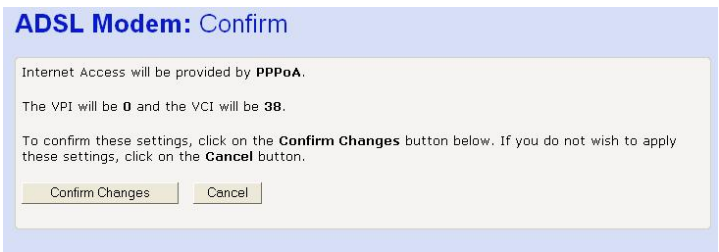


2. Enter the username and password or the username only if no password has been supplied. Type them in the relevant boxes, and then click *Next>*. The following page is displayed:



The settings of VPI =0 and VCI=38 are the correct settings for the BT Broadband service. If you have been provided with different settings from your ISP enter them here

3. Click *Next>*. The following page is displayed:



This page confirms your settings. If you are happy with your settings, click *Confirm Changes*. The *Internet Access* page is displayed.

Router Configuration

If you are using BT Broadband service for your Internet Access the only change you should make here is the *Password* if you want to restrict access to the BT Micro management application.
If your Internet service is provided via a Cable Modem or you wish to connect to a private network please see the Router Configuration section on Page 78.

Password

You can restrict access to your BT Micro's programming pages using password protection. With password protection enabled, users must enter a username and password before gaining access to the programming web pages.
By default, password protection is enabled on your BT Micro, and the usernames and passwords set are as follows:
Username: **admin**
Password: **admin**
Username: **engineer**
Password: **engineer**

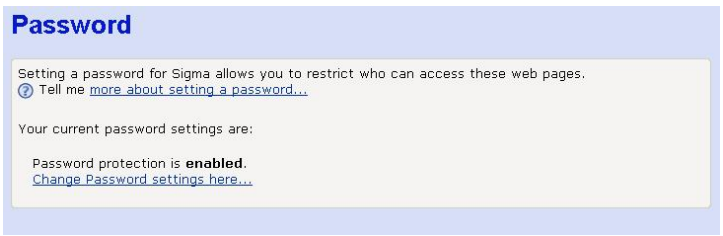
Setting your username and password

Note

Non-authorised users may try to access your system by guessing your username and password. We recommend that you change both of the default usernames and passwords 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:



2. Click on *Change Password settings here…* The following page is displayed:
3. This page allows you to enable or disable password protection. Protection is already enabled by default. Click

Next>. The following page is displayed:

4. This page displays the current username and password 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.
5. Click *Next>.* The following page is displayed:

6. 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 22.

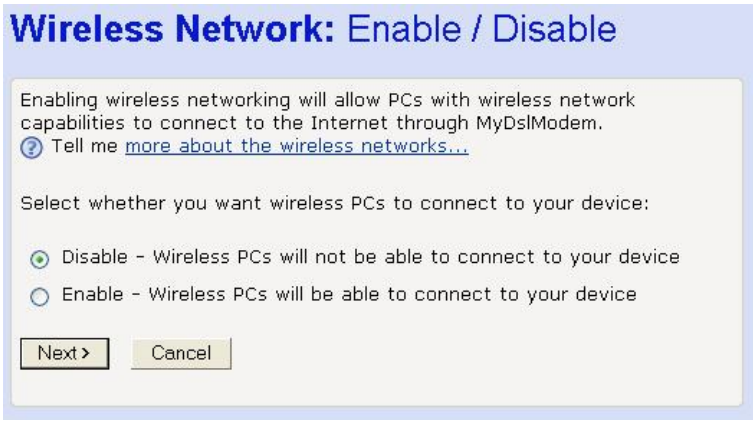
Disabling password protection

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

is displayed.

Wireless Setup / Security

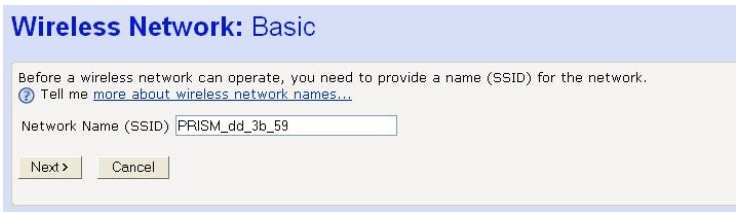
To set up wireless operation on Micro select Wireless Setup/Security on the Welcome Page.
In the *General Settings* section Select *Enable or disable the wireless network here.*
The following screen is displayed: -



To enable the network, click on the Enable radio button and then click Next>. The page allowing the Network Name to be changed is presented.

Set the Wireless Network Name

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



Your BT Micro 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.

Select a Channel

The following page allows you to select a network channel:

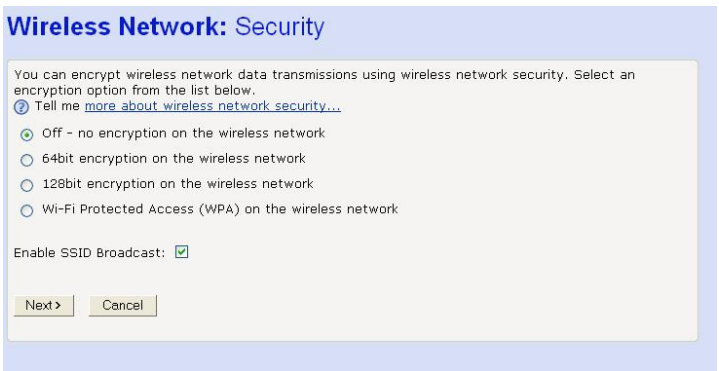
Select *Allow BT Micro to select channel*.
The BT Micro will automatically select a channel.

If you wish to select a particular channel, this may be required if there are many wireless networks in the area, click on the *Select a channel manually* option and then click *Next>.* The following page is displayed: -

Select a suitable channel (as advised by your ISP) from the *Channel* drop-down list and then click *Next>.*

Configure Wireless Network Security

The following page allows you to configure wireless security:



You can protect your wireless data from potential eavesdroppers by encrypting wireless data transmissions. An eavesdropper might set up a compatible wireless adapter within range of your BT Micro and attempt to access your network.

Data encryption is the translation of data into a form that cannot be easily understood by unauthorised users.
There are two methods of wireless security to choose from: Wired Equivalent Privacy (WEP); 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 network key. Each PC on your wireless network must be manually configured with the same key as your BT Micro 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.
Wi-Fi Protected Access (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 PCs on 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 BT Micro.
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>. Off is the default setting, but you are **strongly recommended** to use wireless network security on your BT Micro.

WARNING

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

If you want to use WEP 64bit data encryption, click on the 64bit encryption on the wireless network radio button and then click Next>.
If you want to use WEP 128bit data encryption, click on the 128bit encryption on the wireless network radio button and then click Next>.
If you want to use WPA, click on the *Wi-Fi Protected Access (WPA) on the wireless network* radio button and then click *Next>*.

Note

Not all wireless cards support WPA. If this is the case it is recommended you contact the wireless card vendor's web site where you may find a software upgrade to enable WPA. Failing this you should programme WEP encryption.

Configuring 64bit or 128bit encryption

The example set in this section is for 128bit encryption, however the outline also applies to 64bit encryption.
Once you have selected your WEP encryption method and then clicked *Next>,* the following page is displayed:

Click in the *Key* box and type a unique 26-character hex network key, such as *A6F34B2CE5D68BE90A6F34B2CE*.

Note

Hexadecimal or 'hex' numbers each have a value of 0 to 9 or A to F. Each number represents four bits of binary data.

Note that if you selected 64bit, you will need to type a unique 10-character hex network key.

Click *Next>.*

Configuring WPA security

1. Once you have selected WPA and then clicked *Next>,* the following page is displayed:

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 or numbers or a combination of all of these.
3. Once you have typed a pass phrase, click *Next>*.

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 Address Authentication

The following page allows you to configure which wireless PCs can access the BT Micro:

By default, any wireless PC that is configured with your network's SSID and channel number can connect to your BT Micro. 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 BT Micro, but all other wireless PCs **can**.
A wireless PC whitelist; PCs on this list **can** access the BT Micro, 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 BT Micro, choose one of the following options:
If you want any wireless PCs to have access to your BT Micro, click on the *Allow any wireless PCs to connect* radio button. Click *Next>*.
If you want to create a blacklist of PCs that cannot access your BT Micro, click on the Allow all wireless PCs to connect except those I specify radio button and then click Next>.

If you want to create a whitelist of PCs that can access your BT Micro, 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:

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

3. 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:

4. This page allows you to configure the addresses on the blacklist:

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.

5. 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:

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

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:

This page allows you to configure the addresses on the whitelist:

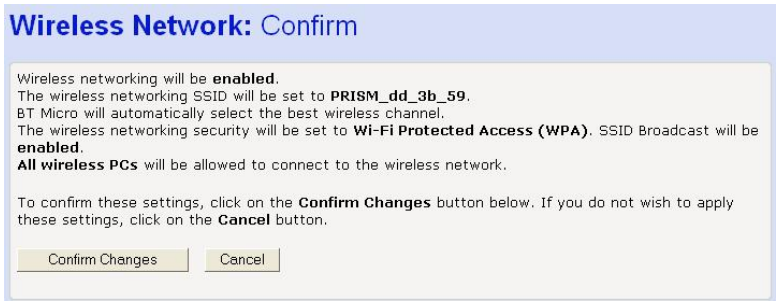
If you want to add another MAC address to the whitelist, click Add an address here… and repeat the instructions.

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>.*

If you are following the *First Time Settings* wizard, the final page in the wizard sequence is displayed, which allows you to confirm the settings.
If you have accessed this page from the *General Settings* section of the *Wireless Network* page, click on the *Confirm Changes* button to apply changes and return to the *Wireless Network* page.

Confirm Wireless network changes

Once you have configured Wireless Address Authentication and clicked on *Next>,* the following page is displayed:



This page confirms the configuration changes made to each page in the wizard. If you are happy with these settings, click on the *Confirm Changes* button. Configuration changes are applied to the BT Micro and the *Wireless Network* page is displayed.

Date & Time Settings

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

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 2006 = 030506

Time

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

5 Using Your BT Micro Phone System

System Description

The BT Micro is an Integrated Communications System supporting all your voice & data needs.

The BT Micro can accommodate 1 external PSTN line and 2 IP lines. The PSTN line can be a standard line or a Featureline.

The BT Micro system can accommodate 4 wired featurephones, standard phones and 4 cordless DECT sets.

The BT Micro featurephone has a simple-to-use menu-driven interface.

A Door Intercom is available that can be programmed to ring any extension. A Doorstrike output is also provided to activate an automatic door opener. (door intercom utilises extn 23)

External Music-on-Hold may also be used. This is provided using the optional Music-on Hold module. If installed it is also connected to an extension position.

Introduction to your BT Micro Phones

There are four wired and four cordless extension positions available on the BT Micro.

The wired positions can be equipped with a featurephone or standard telephone sets.
The cordless positions can be equipped with the proprietary DECT phone or a standard DECT phone.
The proprietary featurephone and DECT cordless phone are designed to simplify the use of the system by providing integrated features on the phones.

Note

If a door intercom is installed it uses a wired extension position (extension 23) thus reducing the wired telephones to three. See page 99 for instructions on programming the door intercom.

Installing the External Music-on-Hold module also uses an extension position. If both are installed the number of available wired telephones is reduced to two. See page 100 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 BT Micro system and its features, with either a featurephone or a standard telephone. It also explains how to programme system settings using your featurephone.

Read the section '**System Featurephone'** on page 40 to understand how to operate the menus and use the other features of your featurephone.

To get up and running with your featurephone, read the section '**Feature phone – Basic Call Features** ' on page 49.

If you are using a standard telephone, read the section '**Using a Standard Telephone**' on page 59.

If you are using a cordless DECT telephone, read the section '**Using a DECT Telephone'** on page 46.

When you are ready to use additional call features, refer to the section '**Additional Call Features'** on page 64.

To control which numbers system users may dial, refer to **'Class of Service**' on page 72.

For '**Programming Additional System Options**', such as Door intercom & Doorstrike, see page 77.

Your BT Micro 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.

System Featurephone

Introduction to your system Featurephone

The system featurephones are highly featured display telephones for use with your BT Micro 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 programme and activate features.
The featurephone 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 extension.
System settings are also programmed via a featurephone using the intuitive menu-driven interface, without the need for special codes.
The featurephone has eight Programmable Keys, which are pre-programmed to access exchange lines, and four function keys that group frequently used features.
The featurephone is fully hands-free, so you can make calls, receive calls and use its features without lifting the handset.
The featurephone is in diagram format below:

Using the Featurephone display

The featurephones' display presents various prompts and information, and provides selectable options to the extension user.

Prompts and information

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 extension will result in the prompt 'Programming refused'.
When your featurephone is not in use, its display shows the time and date on the top line. To set the time and date, see page 71.

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 extension number you dial is displayed. If the extension has been programmed with a name, the name is displayed. The call duration is also displayed.

If CDS 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 featurephone 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. Also, when features such as Extension 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 extensions on which you wish to activate the feature. In this case the Extension Menu lists all the extensions connected to the system. Similarly, a line Menu may be presented listing all the analogue lines and IP 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. Extensions from the Extension 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 a ◊ 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 you are 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.

Using the Keypad

The Keypad can be used to enter digits when dialling or text when programming names or messages.

How to enter text when programming names or messages

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 featurephone. The first key is programmed as line 1. All other keys are blank. The line keys incorporate a light, which is lit on all featurephones when the associated line is selected.
The light is green on the featurephone using the line and red on all other featurephones. When a call on a line is put on hold the associated line Key light flashes on all featurephones, (unless the system programming is changed from the default as detailed on page 186).
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 featurephone 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 featurephone with a headset. (See: **'Using your featurephone with a headset**' on Page 56).
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 featurephone is ringing.

Note

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

Using the Secrecy 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 featurephone. 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 featurephone display. Particular features are grouped under these keys, as follows:

PROGRAMME: This key accesses the options available to customise your featurephone settings. It also accesses system programming from the Programming Extension only.

MESSAGE: This key accesses Voicemail. (See page 72 for Voicemail).

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

ISDN: (Integrated Services Digital Network): This key is used for Featureline Call Divert services when the system is programmed to work on Featureline. (See page 56 for the description of Featureline operation).

Customising your Featurephone

This PROGRAMME Key accesses the options available to customise your featurephone settings.

To turn on Automatic answer mode

You may programme your featurephone 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 featurephone.
From your featurephone, press the PROGRAMME Key
Select 'Auto answer'.
Select the required option – '*Set auto answer' or 'Cancel auto answer'*, to set and cancel the Automatic answer mode respectively.
Press the Hands-free Key to finish programming.

To program a feature onto a Programmable Key on your extension

You may re-programme any or all of the Programmable Keys located on the featurephones. There are eight keys on the V8. You can programme these keys to select lines, extensions, features or speed dial numbers.
From your featurephone, press the PROGRAMME Key
Press the Scroll Down Key (↘) until '*Key Programming'* is displayed.
Select 'Key programming'.
Press the Programmable Key to be programmed. A list of options appears on the display.
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.
Press the Hands-free Key to finish programming.


Note

If you are programming the key to call an external number remember to precede the number with a 9 to select the analogue line or 8 to select an IP 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 PROGRAMME Key
From your featurephone, press the PROGRAMME Key
Press the Scroll Down Key (↘) until 'Headset Mode' is displayed.
Select 'Headset mode'.
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.
Press the Hands-free Key to finish programming.
The handset does not operate in Headset Mode.

To set a ringing tone on your featurephone

You can select one of six ringing tones.
From your featurephone, press the PROGRAMME Key
Press the Scroll Down Key (↘) until 'Ringing options' is displayed.
Select 'Ringing options'.
Select 'Tone 1', 'Tone 2', 'Tone 3', 'Tone 4', 'Tone 5' or 'Tone 6' which will cause the selected tone to sound.
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.
Press the Hands-free Key to finish programming.

To set the display contrast on your featurephone

You may choose from four levels of display contrast.
From your featurephone, press the PROGRAMME Key
Press the Scroll Down Key (↘) until 'Contrast options' is displayed.
Select 'Contrast options'.
Select 'Level 1', 'Level 2', 'Level 3' or 'Level 4' to set a contrast option. The prompt 'Contrast set' appears on the display.
Press the Hands-free Key to finish programming.

To enter system programming

If your extension is the Programming Extension 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 extension the display will show 'Programming Refused'. Again, the default Programming extension is extension 20.
From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

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

Background music

This feature allows an extension to have music played over the speaker of a featurephone while the extension 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 extension.
From your featurephone, press the PROGRAMME Key

Press the Scroll Down Key (↘) until 'Background Music' is displayed.

Select the required option – 'Background music on' or 'Background music off'.

Press the Hands-free Key to finish programming.

Note

The system must be equipped with the optional External Music on Hold module. The feature must also be programmed. See page 176 for programming from the featurephone and page 98 for programming from the management application.

Using the DECT Telephone

The DECT telephone is designed for use with the BT Micro. The keys are as shown. For a detailed description of the functionality see Appendix on page155.

Making a call

Press

Dial the number you want to call. The number appears on the display and is dialled.

Note

Call timer: *The call timer shows the duration of your current call on display.*

Note

Out of range warning: *If you move too far away from the BT Micro during a call, your phone will sound an alert tone and will flash. You need to move closer to the system or your call will be disconnected.*


Note

Low battery warning: *If your phone is almost out of battery during a call, it will sound and alert tone. Place your phone in the charger as soon as possible. Placing the phone in the charger will end the current call.*

Preparatory Dialling (Pre-Dial)

With pre-dial, you can see and edit the number you are calling on the display before dialling it.
Enter the number you want to call. The number appears on the display.

Deleting digits: Press CLEAR to delete an incorrect digit. If you press CLEAR on the last digit, your phone will return to standby.
To Dial the number Press 

Saving a number from pre-dial

You can save a number in the private phone book in the phone.

1. Enter the number in standby. The number appears on the display
2. Press *SAVE.*


Note

Memory Full: *If the phonebook is full, FULL is displayed, and then the phone returns to standby.*

3. Enter the name for the record. You must enter a name.
4. Press 
5. Edit the number for the record if necessary. You must enter a number.
6. Press *SAVE* to confirm. The phone returns to standby.

End a call

1. Press  or place the phone on the base unit or charger.

Answer a call

When you receive a call, the phone will ring and will flash in the display.
Press  to answer the call.

Redial a number

Your phone records the last 10 numbers you have dialled. The most recent call is stored at the top of the list. Only the first 20 digits of each number are stored.
To redial the last number dialled:
Press 
Press *REDIAL*. The last dialled number appears on the display and is dialled.
To redial one of the last 10 dialled numbers:
Press  during standby. The redial list appears on the display.

Press  to select the number you wish to redial. Press 

Handsfree calls

Handsfree provides the convenience of talking to the caller without holding onto the phone. You can communicate by using the speaker/microphone of the phone. Handsfree also allows others in the room to be involved in the conversation.
Press *OPTIONS* when on a call. Select SPEAKER. Press *OK*.

1. You can hear the caller over the loudspeaker and you can speak via the microphone.
2. Repeat step 1 to switch off the speaker.

Turning off the ringer

Press *SILENT* when the phone is ringing to turn off the ringer for the call.

You can also press and hold * when the phone is in standby to turn off the ringer for all the calls. (Press and hold again to turn on the ringer.)

Adjusting the volume on a call

You can increase or decrease the volume during a call. There are 3 volume levels for selection.
To adjust the volume, during a call:
Press  The display shows the current volume level. Press  to adjust the volume.

Using Mute on a call

During a call, if you wish to speak to someone privately without having the caller hear your conversation,
Press *MUTE.* The caller cannot hear you, but you can hear the caller.
Press *UNMUTE* to communicate with your caller again.

For more detailed instructions on the DECT phone see page 155.

Message Waiting Indication

A message indication symbol  appears on your DECT handset and a broken dial tone is heard when going off hook, when a message has been left in the Answering Machine or the extension's voicemail.

To access the message press  and dial *.
To access the answering machine dial 0 as the extension number.
The default password is 1111 for all mailboxes.

Featurephone– Basic Call Features

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 (9 or 8) is dialled to select a line.
If Automatic Line selection is programmed you do not enter the line access code. See page168 for Automatic Line selection programming from a featurephone and page 100 for programming via the web management interface.

Making an external call in normal mode

1. Press the Line Key 1 for Line 1and dial the external number. The other keys may be programmed with the IP lines if equipped. See Key programming on Page 44.

Or

2. Dial 9 (to select Line 1, the standard line) or Dial 8 (to select an IP line). When dial tone is returned dial the external number.

Making an external call with Automatic Line selection programmed

1. Press the Line Key 1 for Line 1 and dial the external number. The other keys may be programmed with the IP Lines if equipped. See Key programming on Page 44.

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 dialled.

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 9 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 extension from the list
2. Dial the extension number (20 – 23 or 31-34) and select '*Dial*'.
3. Lift the handset and dial the extension number.

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

To make an internal call with Automatic Line selection programmed

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

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

Speed Dial list

Each extension 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 the *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 106.
To dial a Personal Speed Dial number
Press the 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 the *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 101.

To dial a System Speed Dial number

Press the *DIRECTORY* Key.
Select 'System 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 answer a call

When the featurephone 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 an extension has two calls on system hold, selecting 'Return to line' will return the extension to the first call that was put on hold.

To transfer a call to another extension

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


Note

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

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 featurephone.

To deflect a call ringing at your extension

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

To deflect a call ringing at your extension to voicemail

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

Note

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

Diverting Calls

To divert all calls from your extension – Extension Divert

Before you leave your extension, you can divert all your internal calls and external calls routed using the CDS to your extension, to ring at another extension.
Alternatively, you can divert all calls presented to your extension to an external number.

1. From the Idle Menu, press the Scroll Down Key (↘) until *'Extension Divert'* is displayed.
2. Select *'Divert All Calls'*.
   a) Enter an internal number if you want to divert all your calls to another extension.
   b) Enter 8 followed by an external number if you want to divert calls to an external number.

c) If your extension 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.105

WARNING

It is possible that an extension may misuse the External Divert facility. The default setting is that external divert is not activated for extensions

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 extension until all call diversion is cancelled.

You cannot divert to an extension 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 extension

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

1. From the featurephone answering the calls, press the Scroll Down Key (↘) until *' Extension Divert'* is displayed.

2. Select '*Follow me'*. You will be prompted to enter your extension number and your Extension Lock Password. (Default Password is 123). Once these details are entered the diversion is activated.

Note

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

Note

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

To divert calls when your extension is busy

The '*Divert On Busy'* feature allows you to divert all your calls to ring at another extension if your extension is busy (engaged). Alternatively, you can divert all external calls to an external number if your extension 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 *'Extension Divert'* is displayed.

2. Select *'Divert when busy'*.

a) Enter an internal number if you want to divert all your calls to another extension.

b) Enter 9 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 on Busy'* from a standard phone the code is '733' followed by the destination number.

WARNING

It is possible that an extension may misuse the External Divert facility. The default setting is that no extension is allowed to set the facility.

Note

When 'Divert On Busy' is enabled on an extension 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 Busy diversion

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

To divert calls when your extension does not answer

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

1. From the Idle Menu, press the Scroll Down Key (↘) until *'Extension Divert'* is displayed.
2. Select *'Divert on no answer'*.

   a) Enter an internal number if you want to divert all your calls to another extension.

   b) Enter 8 followed by an external number if you want to divert external calls to an external number.

3. Press *'Confirm'* to accept the number.

WARNING

It is possible that an extension may misuse the external divert facility. The default setting is that no extension is allowed to set the facility.

If 'Divert On No Answer' is enabled on an extension to divert to an external number, external incoming calls will divert, but internal

Note *calls will not. Diverting an external call to an external number ties up two exchange lines. Such calls are called trunk-to-trunk calls*

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 *'Extension Divert'* is displayed
2. Select *'Divert on no answer'*. The diversion is automatically cancelled and the display returns to the Idle Menu.

Incoming Call Diversion

This feature allows any extension to set a divert for an exchange line or IP Line.

Setting an Incoming Call Divert from a system phone

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

WARNING

It is possible that an extension may misuse the External Divert facility.

Cancel Incoming Call Divert from system phone

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

1. Press the "*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 extensions, or between two extensions and an exchange line, or between two exchange lines and an extension.

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 extension to be included in the conference.
4. When the extension 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 featurephone with a headset

Your featurephone is equipped with a socket for a Headset. Plug the headset into the socket and programme the phone for headset operation.
Press the *'Program'* key on the phone and scroll down to *'Headset Mode'.*
Turn Headset mode on.
The phone is now programmed to operate with a headset.
'Turn Headset Off' is displayed to allow you to revert to handset mode.

To make an internal or external call when using a headset

Press the Hands-free Key and dial your calls in the normal way.

To clear down (end) a call when using headset

Press the Hands-free Key.

To answer a call when using a headset

Select the *'Answer the call'* option on the display, or press the Hands-free Key.

Featureline operation

The PSTN line equipped on the BT Micro can be a BT Featureline. To make an external call on a Featureline all external numbers are preceded by the digit 9 to indicate that the user is making an external call. When working behind a BT Micro this means that the user dials a 9 to select the Featureline and another 9 to call an external number.

A programming option is available to indicate that Line 1 is a Featureline. (See page 168 for programming from the featurephone and page 99 for programming from the Web Management interface).
When the line is programmed as a Featureline the following features are automatically activated

- The additional digit 9 is automatically inserted on external calls on Line 1. A call is made on the Featureline by dialling 9 and the external number. Alternatively Line 1 can be selected by pressing the Line 1 key on a featurephone and dialling the external number.
- Call Divert features on the Featureline are presented under the ISDN key on all featurephones.


Note

As the system automatically inserts the digit 9 on all calls made on a Featureline the only network facilities that can be activated are the Call Divert facilities.

Making an external call on a Featureline

When the system is programmed for Featureline operation external calls are placed on Line 1 by: -

- Dialling 9 to select Line 1 and dialling the external number.
- Selecting the Line 1 key on a featurephone and dialling the external number.
- If Automatic Line selection is programmed, go off hook or select the Line 1 key and dial the external number. (See page 49 for the description of Automatic Line selection).
- Calls are made as normal from speed dial lists. If Line 1 is selected to place the call the system automatically inserts the additional 9. If an IP line is selected the additional 9 is not inserted.


Note

When the Featureline option is programmed calls on IP lines are not affected. Calls are made by dialling 8 to select an IP line, or selecting an IP Line key, and dialling the external number as normal. The additional 9 for the Featureline is not automatically inserted.

Featureline Call Divert

When the Featureline option is turned on the Featureline network divert features are provided under the ISDN key on all featurephones. These diversions are set in the BT network and are additional to the system diversion features available in the system. (See page 52 for the system diversion features).

Select the ISDN key on the featurephone.
Three options are provided: -

- Divert All Calls
- Divert on Busy
- Divert on no reply

Divert All Calls

Press the ISDN key
Select *Divert all calls* on the display
The prompts to *Activate*, *Cancel* and *Check* are shown.

1. To activate the diversion select *Activate.*
2. Enter the telephone number that the calls are to be diverted to. (**Do not** enter the line access code 9).
3. Select *Send.*


Note

To activate the Featureline divert feature Line 1 must be available as the system automatically sends the activation codes to the line. If the line is not free busy tone will be returned when Send is selected and the feature will not be activated

To cancel the diversion press the ISDN key, *select Divert All Calls* and select *Cancel*

To check the diversion press the ISDN key, *select Divert All Calls* and select C*heck.*

Divert on Busy

Press the ISDN Key
Select *Divert on Busy* on the display
The prompts to *Activate*, *Cancel* and *Check* are shown.

1. To activate the diversion select *Activate.*
2. Enter the telephone number that the calls are to be diverted to. (**Do not** enter the line access code 9).
3. Select *Send.*

To cancel the diversion press the ISDN key, *select Divert on Busy* and select *Cancel*
To check the diversion press the ISDN key, *select Divert on Busy* and select C*heck.*

Divert on no reply

Press the ISDN Key
Select *Divert on no reply* on the display
The prompts to *Activate*, *Cancel* and *Check* are shown.

1. To activate the diversion select *Activate.*
2. Enter the telephone number that the calls are to be diverted to. (**Do not** enter the line access code 9).
3. Select *Send.*

To cancel the diversion press the ISDN key, *select Divert on no reply* and select *Cancel*
To check the diversion press the ISDN key, *select Divert on no reply* and select C*heck.*

Using a Standard or DECT Cordless Telephone

Feature Access Code List

You may access the range of BT Micro 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 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. On the DECT cordless phone you can programme codes under the Services (SER) key. See Page 159.

Feature	Code	Feature	Code
Answering machine on/off	737	Incoming call Divert on 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)	Open the Door	731
Conference	R3	Page – featurephones	716
Divert All	732 xx	Park	R712
Divert on Busy	733 xx	Pick up parked call	712
Divert on No Answer	734 xx	Redial	77
Do Not Disturb – set/cancel (Not available to extension 20,)	736	Redial IP call over standard line	R77
Door Open	731 (R731)	Reset telephone	739
Extensions - Wired	20-23	Return to call placed on systemhold	719
Extensions - Cordless	31-34	Return and hold in Two Call handling	R2
Extension 20	0	Return and release in Two Call handling	R1
Extension Lock – change code	714 xxx	Ring Back	R5
Extension Lock - lock/unlock	713 xxx	Saved Number Redial	781-785
External Call Hold	R	Speed Dial – accessing personal numbers	74(01 -30)
Follow Me	735 (Password) xx	Speed Dial – accessing system numbers	400-499
Forward Recall	R722	Speed Dial – programming personal numbers	75(01 -30)
Intrude	709	System voicemail box on/off	737
Line Access – Analog lines	9	Voice call (to page an individual featurephone)	715
Line Access – IP Lines	8	Voice Mail Access	*
Incoming call Divert All Calls	792	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 (9 for Line 1or 8 for an IP line) 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 featurephone see page 168and for programming from the Web Interface see page 100.

To make an external call in normal mode

1. Lift the handset, or use a Hands-free Key, if available on your telephone. On the DECT phone press  .
2. Obtain a free line in one of the following ways:
3. Dial 9 to select Line 1.

4. Dial 8 to select an IP line.
5. 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. On the DECT phone press .
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. On the DECT phone press .
2. Dial the desired extension 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. On the DECT phone press .
2. Press hookflash and dial the desired extension number (20-23 or 31-34). On a DECT phone press *Recall* and dial the extension number

To answer a call

When the telephone rings lift the handset or use a Hands-free Key if available on your telephone. On a DECT phone press

Holding & Transfer Calls

To hold and return to a call

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

If you replace the handset, 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 handset is replaced. 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

To hold the call

1. Place the call on hold by pressing the Recall Key.

To return to the call

1. On a standard phone press the Recall key again to return to the call
2. On a DECT phone with the Recall text beside the key press the key again.
3. On a DECT phone with the Recall text beside the Int key press Cancel on the display and then press the Recall Key.

   To clear the display press Cancel again.

To transfer a call

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

To make an external consultation call

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

1. While on an external call, press the Recall Key (R) on your telephone.
2. Dial the extension number.
3. To return to the external call and place the extension on hold, press R and dial 2.
4. To return to the external call and release the extension, press R and wait, or press R and dial 1.

To transfer the external call to the extension replace the handset when talking to the extension with the external call on hold.

Extension Divert

Divert all calls

1. Lift handset or use hands-free if available.
2. Key 732
3. Key the extension number, or
4. Key the external phone number (including line access code 9)
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 extension number, or
4. Key the external number, (including line access code 9)
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 extension number, or
4. Key the external phone number (including line access code, e.g. 9)
5. 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

Incoming Call 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 extension number, or

Key the external phone number (including line access code 9) 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 (1-3).

Incoming Call Divert- on busy

1. Lift handset or use hands-free if available
2. Key 793 followed by the line number (1-3)

3. Key the extension number, or

Key the external number, (including line access code 9) followed by #.

Cancel Incoming Call Divert - on busy

1. Lift handset or use hands-free if available
2. Key 793 followed by the line number (1-3).

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 (1-3)
3. Key the extension number, or
4. Key the external phone number (including line access code, e.g. 9)
5. 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 - 3).

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.

Note

The line access codes 'e.g. 9' 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

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

To divert on no answer to your voicemail Key 734 followed by 710.

Additional Call Features

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

Saved Number Redial

In addition to the Last external number the previous 5 numbers dialled are also stored and may be redialled.
From the Idle Menu, select *'Saved Numbers'.*
Select the number to be dialled.
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 extension.
These calls include
Internal calls
External calls
CDS Routed calls
Incoming ringing calls routed to a single extension
To pick up a call ringing at another extension
From the Idle Menu, select the *'Call Pick-Up'* option on the display.
From a standard telephone, the code is 727.

Ring Back

If the extension you call is busy, use the Ring Back feature to have the extension call you back when it becomes free. If you dial for an exchange 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 extension call you back when it becomes free

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

To receive an exchange line as soon as one is available

When you have dialled for a line and none are free, select *'Ring back'* on the display.
When the line becomes free, your extension will ring.
Select *'Answer the Call'* or pick up the handset to select the line.
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 extension call a busy extension as soon as it becomes free.
When you call an extension and get a busy (engaged) tone, stay off-hook and when the called extension becomes free it will start ringing.

Intrude

The Intrude feature allows extensions to break in on other extension calls. When an extension is programmed to have the intrusion feature, the prompt "Intrude" is added to the idle menu on the featurephone. See Page 106 for programming from the management application and page 171 for programming from the programming featurephone.

To intrude on an extension select "Intrude" on the idle menu. The extension list is displayed. Select the extension to intrude on. The extension must be on a call and this is indicated by a "♦".
If the intrusion is successful the text "Intruded" is displayed.
A programming option is available that disables the warning tone when intrusion is activated. See page 100 for programming from the web application and Page 172 for programming from the programming featurephone.
A further option is provided to protect extensions from being intruded on. See page 106 for programming from the management application and Page 172 for programming from the programming featurephone.
If an attempt is made to intrude on a protected extension the display shows "Intrusion prohibited".
If the intrusion is unsuccessful for any other reason the display shows "Intrusion failed".


Note

Intrusion is not allowed if the extension selected is not on a call, is transferring a call, is listening to voice mail or is in a three-way conference call.


Note

A maximum of three simultaneous intrusion and conference calls is allowed in the system.

From a standard analogue or cordless telephone, dialling the code 709 followed by the extension number, activates Intrusion.

Call Waiting from another extension

If you get a busy tone, when you call an extension, you can alert the busy extension that you wish to contact provided the extension is not protected against receiving Call Waiting tones. (See 'Call Waiting Tone Protection' on page 171). An audible tone will sound on the called extension, 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 extension with a Call Waiting tone

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

To accept a waiting call

If another extension presents you with call waiting, this will be indicated on your display and you will hear the call waiting tone, provided your extension 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 extension is presented with an external call you will hear a call waiting tone provided your extension 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 extension may then pick up the call.
To park and retrieve a call
On a featurephone, select *'Call Park'* on the display.
'Pick up park' is then displayed on the top line on the display on all featurephones. 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

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 Display Service (CDS), the network sends the telephone number of callers to the BT Micro (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 featurephones.
The CDS information is also shown if the extension is equipped with a standard phone which supports the CDS service.
Your telephone number will also be presented to persons you call, unless you restrict your number from being presented.
The CDS 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 CDS Store can be allocated as one central store of data on calls received. This store alerts extension 20 (default), by means of a display prompt, that new calls have been stored. You can also programme all 4 extensions to store up to ten numbers each.

To examine and redial stored caller numbers

Select *'Missed Calls - Personal'* to examine the numbers in the personal store of your featurephone.

Select *'Missed calls - System'* to examine the system store.
This can be selected from any extension.
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 extension 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 (CDS service)

For configuration via the web interface, see page 109.
For configuration via the featurephone interface, see page 167.

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

For configuration via the web interface, see page 116.
For configuration via the featurephone interface, see page 167.

CDS Stores storing all calls or unanswered calls

To programme the CDS Store to store all calls or unanswered calls only.

To set up extensions with an individual CDS Store

For configuration via the web interface, see page 104.
For configuration via the featurephone interface, see page 168.

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 featurephones

The *'Page All Featurephones'* allows any extension to make an announcement over the speakers of all featurephones. Only featurephones that are page-protected will not be paged.
From the Idle Menu, press the Scroll Down Key (↘) until '*Page all Featurephones'* is displayed.
Select 'Page all Featurephones'.
Make your announcement.
From a standard telephone, the code is 795.

To make a call over the speaker of another featurephone

The Voice Call feature allows you to speak over the speaker of an individual featurephone. If the featurephone is page-protected the voice call will fail.
From the Idle Menu, press the Scroll Down Key (↘) until 'Voice call' is displayed.
Select 'Voice call'.
Select the extension you wish to page.
Make your announcement.
From a standard telephone, the code is 715.
To answer a Voice Call at your extension
Press the Secrecy Key and speak in Hands-free Mode, or pick up the handset.
To protect featurephones against Announcements and Voice Calls
For configuration via the web interface, see page 104.
For configuration via the featurephone interface, see page 169.

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.
In addition, you can choose to route the calls over different lines at various times of the day for optimum call rates. 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

Select a line Key, or dial a code for a line (9, 8) and select 'Send digits'.
Dial a valid input code.
When a line is selected, dial the telephone number you wish to reach.
Your call will then be connected with the output code being dialled before the telephone number.
Any line Key or line code (9, 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

For configuration via the web interface, see page 114.
For configuration via the featurephone interface, see page 170.

Least cost Routing activated automatically at set times

For configuration via the web interface, see page 113.
For configuration via the featurephone interface, see page 170.

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 BT Micro 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

From a featurephone, select 'Forward recall' on the display.

From a standard telephone, the code is R722.

Extension Set-Up options

Do Not Disturb

If your extension 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 a featurephone, '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 extension

From the Idle Menu, press the Scroll Down Key (↘) until *'Do Not Disturb'* is displayed.
Select 'Do Not Disturb'.
'Do Not Disturb' is unavailable on extension 20.

To cancel Do Not Disturb on your extension

From the Idle Menu, Select *'Cancel do-not-disturb'.* This option is displayed only when the feature is set.
When '*Do Not Disturb'* is set, you will hear a broken dial tone when you lift the handset.
From a standard telephone, the code 736 is used to set and cancel this feature.

Extension Lock

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

To lock your extension

From the Idle Menu, Press the Scroll Down Key (↘) until *'Extension Lock'* is displayed.
Select 'Extension Lock'.
Select 'Lock the Extension'.
Dial your 3-digit Lock Password. (The default Lock Password is 123).
Press the Hands-free Key to finish programming.
From a standard telephone, the code is 713.

To unlock your extension

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

To make a call from a locked extension

Press a line Key, or dial the code for a line (9 or 8), as if to select a line.
Dial your 3-digit Lock Password. (The default Lock Password is 123).
A line is selected.
Dial the number you require.

To change your extension Lock Password

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

To examine Extension Lock Passwords

For configuration via the web interface, see page 105.
For configuration via the featurephone interface, see page 171.

Alarm call

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

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

From the Idle Menu, press the Scroll Down Key (↘) until *'Alarm call'* is displayed.
Select 'Alarm call'.
Enter the time in the 24-hour clock format, for example, 0930 for 9.30 am.
At the programmed time the extension will give ten rings. If not answered, it will ring twice more at two-minute intervals and will then cancel.
Alarm calls must be set daily and therefore cannot be set more than 24hrs ahead.

To review and cancel a Alarm call

To review a 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.
To cancel the alarm call, select *'Change'* followed by *'Confirm'.*
From a standard telephone, the code 718 is used to set a Alarm call, and the code 718* is used to cancel it. A standard telephone cannot query the Alarm call time.

Extension Reset

You can reset your extension 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 featurephone

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

Incoming Call Handling

General

Calls can be presented to the BT Micro on Analogue lines and IP lines.
Calls can be programmed to ring any number of extensions. For configuration via the web interface, see page 97.
For configuration via the featurephone interface, see page 172.
When calls are received on a line all, free, programmed extensions are rung.
All Incoming Call Divert Options set for the line are acted on.


Note

Any Diversions set on an extension are ignored for incoming calls unless a single extension has been programmed to ring for the line, calls are routed to the extension by Caller ID programming or a caller has dialled through the Answering Machine or a voice mail box to the extension.

Distinctive Ringing / Fax number

This feature is primarily intended to support Fax. BT can provide a second number on the standard line that rings with a different signal (BT Call Sign™). See page 109 and 117 for distinctive ringing programming on the web application and page 173 for programming from the programming featurephone. The system is then programmed to ring an extension that can be equipped with a Fax machine when this ringing is detected. All calls with the normal cadence ring the extensions programmed in the Incoming ringing programming.

Restricting Outgoing Calls

This feature lets you decide which lines each extension can access for outgoing calls. By default, all extensions have access to all lines.
For configuration via the web interface, see page 116.
For configuration via the featurephone interface, see page 173.

Day/Night Service

The 'Day Service' / 'Night Service' feature allows you to change the extensions which ring on incoming calls, change the Class of Service at each extension, 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.
For configuration via the web interface, see page 98.
For configuration via the featurephone interface, see page 174.

System Time/Date

For configuration via the web interface, see page 100.
For configuration via the featurephone interface, see page 175.

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.
For configuration via the web interface, see page 98.

For configuration via the featurephone interface, see page 176.

Hotline

Extensions can be programmed so that they automatically dial a number when they go off-hook. The number dialled can be an extension or an external number.
For configuration via the web interface, see page 104.
For configuration via the featurephone interface, see page 176.

Assigning Extension Names

You may assign names to extensions. When an extension receives an internal call, its display will show the calling extension name in the place of the calling extension number.
For configuration via the web interface, see page 102.
For configuration via the featurephone interface, see page 177.

Class of Service

Each extension may be programmed for a Class of Service. This determines the type of call the extension is allowed to dial. Four tables, which can be programmed with up to fifty codes, are used to implement six Classes of Service:
For configuration via the web interface, see page 110.
For configuration via the featurephone interface, see page 178.

Using Voicemail

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

Voicemail

To allocate a Voice Mailbox to an extension

For configuration via the web interface, see page 103.
For configuration via the featurephone interface, see page 180.
To turn on your Voice Mailbox
For configuration via the web interface, see page 103.
For configuration via the featurephone interface, see page 181.
To access your Voice Mailbox
Press  the MESSAGE Key.
Select 'Voice Messaging'.
Enter your extension number, (which is your Voice Mailbox number).
Enter your Voicemail Password, (1111 in default), followed by #.
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 featurephone, will be on. In addition, the top line on your featurephone display will show 'New voice messages'.
Select 'New voice messages'.
Enter your extension number.
Enter your Voicemail Password, which is 1111 by default, followed by #.
Select *'Play'*. The new messages are played.


Note

Each message is time stamped to tell you when the message was received. When all new messages are played, you are informed of the total number of messages in your box. You may skip the time stamp by dialling 8, which jumps forward ten

seconds.

Forward a message from a system phone extension

A user can forward a message from their voice box to another voice box.
While you are listening to the message select the 'Forward message' option
Select the extension to forward to from the menu on the phone
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.
When you have listened to a message in the Voicemail select the *'Return Call'* option
The system initiates a call to that number
Note: To return calls to external callers the CDS service must be available on the lines.

To record your own Voice Mailbox greeting:

Each extension, 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.
At your extension, press  the MESSAGE Key.
Select 'Voice Messaging'.
Enter your extension number when prompted.
Enter your Voicemail Password, (1111 by default), followed by #.
Select 'Greeting'.
Select 'Record greeting'
Speak to record a personalised greeting when prompted.
Press 'Confirm'.
Press the Hands-free Key to finish programming

To replay the Voice Mailbox greeting

At your extension, press the MESSAGE Key.
Select 'Voice Messaging'.
Enter your extension number when prompted.
Enter your Voicemail Password, (1111 by default), followed by #.
Select 'Greeting'.
Select 'Replay greeting'
The greeting will then be replayed for you.

Transferring calls to Voice Boxes

You can transfer calls to any Voice Box without calling the extension.
When you are on a call select *'Transfer to Voice Mail'*
The menu is updated showing those extensions equipped with voice boxes. Select the extension.
Select *'Transfer'* or replace the handset.
For standard telephones the user should press the recall key and key 710 followed by the extension 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 extension.
You can also have your call transferred to your voice Mailbox.
If a line is programmed to ring directly at your extension and your Voice Mailbox is turned on, dial the line number.
Call in on a line which you know will be answered and have the call transferred to your Mailbox.
When answered by your voicemail greeting, access your Voice Mailbox by dialling the code 711, followed by your extension number, Voicemail Password and #.
Then dial the following numbers to access your messages
While listening to the Greeting

Dial 1 Playback commences at the first message
Dial 91 Change the outgoing greeting
Dial 92 Check the outgoing greeting
Dial 93 Delete the outgoing greeting
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 extension
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 extension is free, the call is relayed over the speaker of your featurephone. If you lift your handset you can intercept the call in which case no message is left in the Voice Mailbox.
Press  the MESSAGE Key.
Select 'Voice Messaging'.
Enter your extension number when prompted.
Enter your Voicemail Password, (1111 by default), followed by #.
Press the Scroll Down Key (↘) until *'Monitor'* is displayed.
Select '*Monitor'*.
Select 'Monitor on' or 'Monitor off'.
Press the Hands-free Key to finish programming.

To change your Voicemail Password

By default, each extension is allocated the same Voicemail Password, (1111). You can enter your own password, which can be up to eight digits long, as follows:
Press  the MESSAGE Key.
Select 'Voice Messaging'.

Enter your extension number when prompted.
Enter your Voicemail Password, (1111 by default), followed by #.
Select 'Change password'.
Enter your new Voicemail Password, which can be up to eight digits long.
Press 'Confirm'.
Press the Hands-free Key to finish programming.


Note

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

To check all Voicemail Passwords

For configuration via the web interface, see page 106.
For configuration via the featurephone interface, see page 182.

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 extension. You can set 'Divert All Calls' or 'Divert On Busy' to the Mailbox as well by setting the Divert to 710.
732 for 'Divert all calls'
733 for 'Divert on busy'
734 for 'Divert on no answer'
Your telephone will be rung if any messages have been left in your own Mailbox or the Answering Machine. If your extension is equipped with a phone that can detect CDS information an indication will be given on the phone that you have new voice messages. If your phone does not have CDS capability you should manually access your Voice Mailbox for messages.
To access the Voice Mailbox, dial the code 711, followed by your extension number, Voicemail Password and #. Then dial the following numbers to access your messages:

While listening to the Greeting

Dial 1 Playback commences at the first message
Dial 91 Change the outgoing greeting
Dial 92 Check the outgoing greeting
Dial 93 Delete the outgoing greeting
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 extension
Dial 0 Return Call. Automatically make a call to the caller who left the message.

Answering Machine

This feature allows you to set up the Answering Machine so that it can be turned on and off as required. You can also set the

timer so that the answering machine answers calls immediately or after ringing for a period
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 IP Lines.
All messages received are stored in an answering machine, which is controlled by extension 20. Extension 20 can also customise the greeting. You can turn the Answering Machine service on and off at any time at extension 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 an extension number, in which case the call will be transferred through to that extension.

On power up the answering machine can be turned on and off at extension 20 from the display prompts or by dialling 737 from any other extension. When Turned on all incoming calls on any of the lines will be answered after a 10 second delay.

To turn the Answering Machine on and off

For configuration via the web interface, see page 98.
For configuration via the featurephone interface, see page 182.

To programme lines to be answered by the Answering machine

For configuration via the web interface, see page 98.
For configuration via the featurephone interface, see page 183.

To retrieve messages left on the Answering machine

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

Enter 0 as the extension number.

Enter the Voicemail Password and select the option you require.

Extension 20 can have its own Voice Mailbox, accessed by using extension number 20. The Answering machine has its own Mailbox, accessed by using extension number 0. Both can have their own Voicemail Passwords.

To change the greeting on the Answering machine

Press  the MESSAGE Key.

Select 'Voice Messaging'.

Enter 0 as the extension number, (which is your Voice Mailbox number).

Enter your Voicemail Password, (1111 by default), followed by #.

You are presented with the Voice Messaging Control Menu. The options displayed are *'Play', 'Erase all messages', 'Greeting', 'Change Password', 'Monitor'* and *'Cancel'*.

Select 'Greeting'.

Select 'Record greeting'

Speak to record a personalised greeting when prompted.

Press 'Confirm'.

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 featurephone interface, see page 183.

Programming Additional System Options

Using a Door Intercom

You can equip your BT Micro with a Door Intercom. The Door Intercom has a button which, when pressed, rings at programmed extensions, and has a microphone/speaker for communication. With a Door Intercom 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 BT Micro also features a Doorstrike relay output, which can be used to operate a Doorstrike mechanism, to allow you open the door from your extension. You must purchase the Doorstrike mechanism yourself and arrange for a qualified electrician to install it.
For configuration via the web interface, see page 99.
For configuration via the featurephone interface, see page 183.

Answering a Door Intercom call

You can answer a Door Intercom call if your extension is programmed to ring when someone calls at the Door Intercom. To answer a 'Door Intercom' call, lift the handset and speak. There is no code to dial.
An extension cannot make a call to a Door Intercom

To open a door using the Doorstrike

When your extension is ringing with a Door Intercom 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 Door Intercom will be disconnected.
From a standard telephone, the code is R731 if you are on a call and 731 if you are not.

External Diversion Options

This allows you to decide if external callers or external and internal callers to your extension are diverted externally if you have set an external divert. It also allows extensions to be prohibited from activating an external diversion.
For configuration via the web interface, see page 105.

Note

The Divert on no answer timer is set at 18 seconds in default. This timer can be changed. See Page 112 for changing it via the Management interface and Page 190 to change it via the programming systemphone

For configuration via the featurephone interface, see page 184.

6 Router Configuration using the web interface

ADSL Modem

This section describes how to configure the way that your BT Micro connects to the Internet. Your ISP determines what type of Internet access you should use and provides you with any information that you need in order to configure the Internet access to your BT Micro.
Your BT Micro needs the following address information in order to access the Internet:

IP address and subnet mask:	The IP address and subnet mask assigned to your WAN interface.
Default gateway:	The gateway address that identifies the ISP server through which your Internet connection will be routed.
DNS servers:	The Dynamic Name System (DNS) servers used by your ISP to dynamically assign addresses to each of the computers attached to your LAN.

In most cases, you **will not** need to configure your BT Micro with these addresses because your ISP is likely to use an Internet access type, which automatically assigns addresses to your BT Micro.

Types of Internet Access

PPP Internet access – your BT Micro uses a Point to Point Protocol (PPP) to carry data between your ISP and your computer. To use PPP Internet access, you must enter a PPP login username and password the first time to log on. The IP addresses required to access your ISP's Internet service are automatically configured.

Your BT Micro supports two types of PPP – PPPoE (over Ethernet) and PPPoA (over ATM).
DHCP – your ISP uses a protocol called Dynamic Host Configuration Protocol (DHCP) to assign addresses and manage your BT Micro. The BT Micro is automatically assigned the IP addresses that it needs to access the Internet.

Manual – you manually assign the addresses that your BT Micro needs in order to access the Internet. Your ISP should provide you with the necessary addresses.

Configuring your PPP DSL connection

If your ISP's Internet service uses PPPoA or PPPoE you need to set up a PPP login account. The first time that you login to the Internet, your ISP will ask you to enter a username and password so they can check that you are a legitimate, registered Internet service user. Your BT Micro stores these

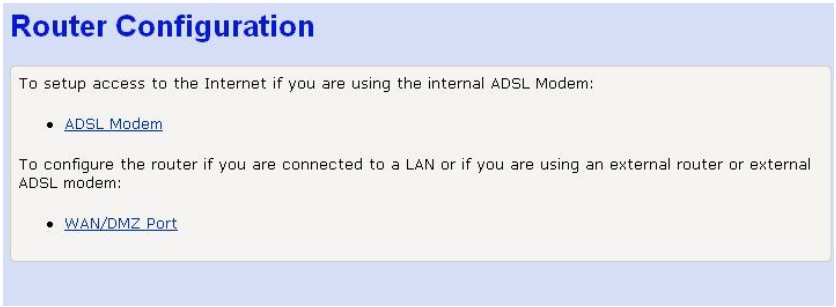
authentication details, so you will not have to enter this username and password every time you login.
Your ISP may also tell you to set unique path and circuit numbers (called VPI and VCI) in order to connect your BT Micro to the ISP's Internet service. In most cases, your BT Micro will use default settings, so you may not need to enter these values.

Note

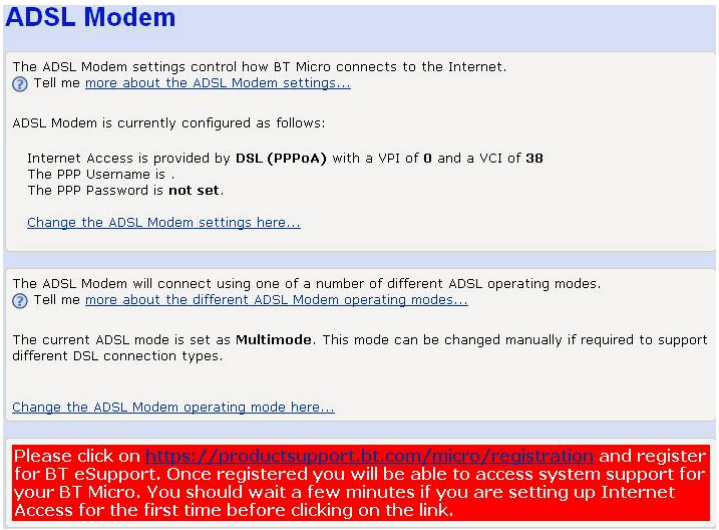
Your ISP will provide you with the login details and VPI/VCI values necessary to set up a PPP login account.

If your ISP wants you to connect to the Internet using PPP, follow the instructions below.

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



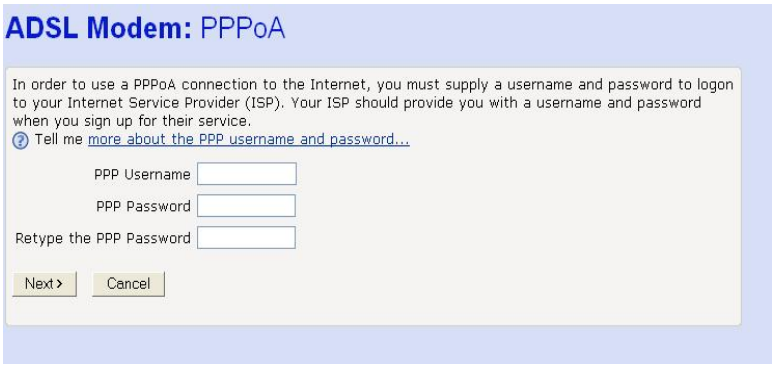
2. Click on ADSL Modem. The following page is displayed:



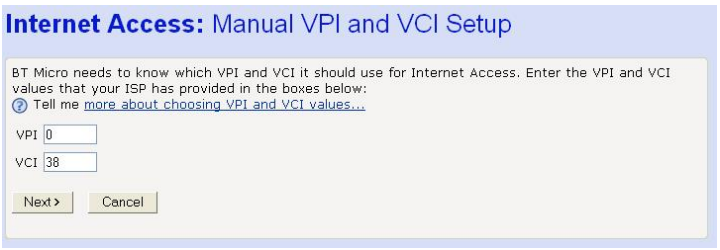
This page displays information about your current Internet access configuration.

3. Select *Change the ADSL Modem settings here*. The following page is displayed

4. Select either *PPPoA* or *PPPoE*, depending on which PPP type your ISP wants you to use. In this example, PPPoA is selected, but the instructions for PPPoE are identical. Click *Next*>. The following page is displayed:



5. Enter the PPP username and password provided by your ISP. Type them in the relevant boxes, and then click *Next*>. The following page is displayed:



The settings of VPI=0 and VCI=38 are the correct settings for BT Broadband. If your ISP has supplied you with different values enter them here.

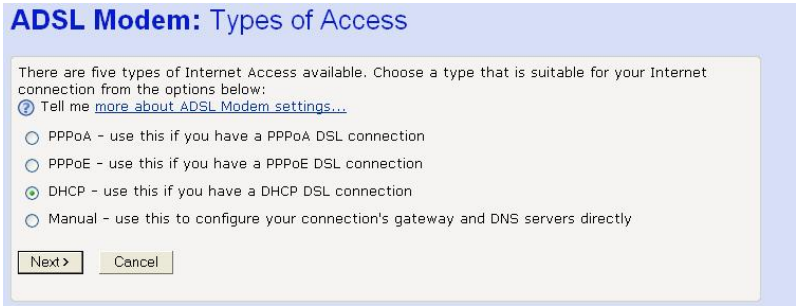
6. If you are happy with your settings, click *Confirm Changes*. The *Internet Access* page is displayed.

Configuring a DHCP DSL connection

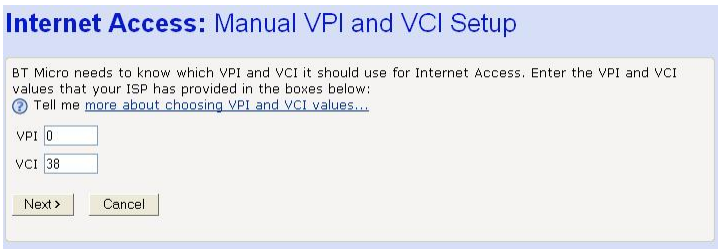
If your ISP uses a DHCP DSL connection, your ISP may tell you to set unique path and circuit numbers (called VPI and VCI) in order to connect your BT Micro to the ISP's Internet service. In most cases, your BT Micro will use default settings, so you may not need to enter these values.

Note

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



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



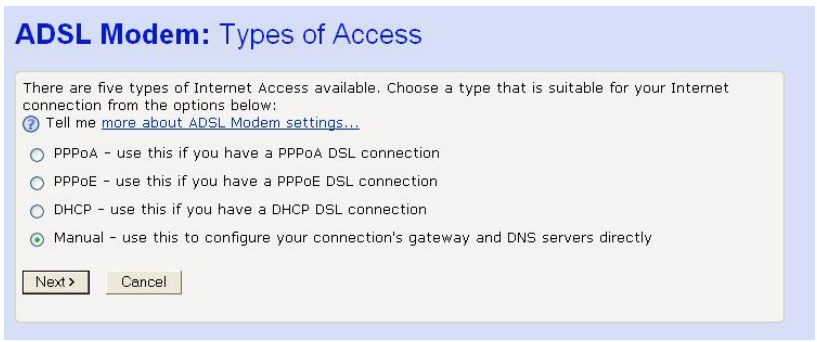
Enter the VPI and VCI settings supplied by your ISP

Configuring your Internet Access manually

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 BT Micro
The Internet Gateway address
The primary and secondary DNS addresses

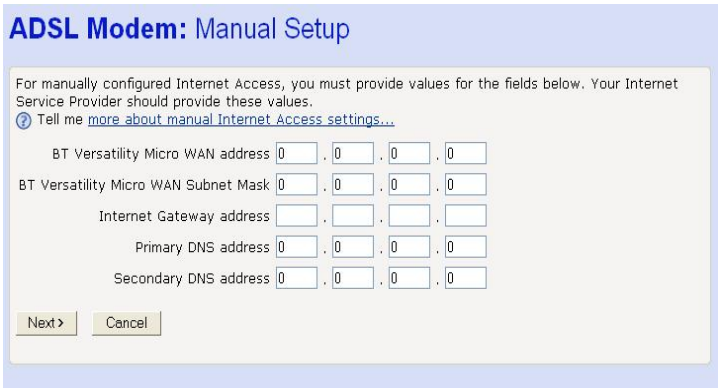
Note

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.

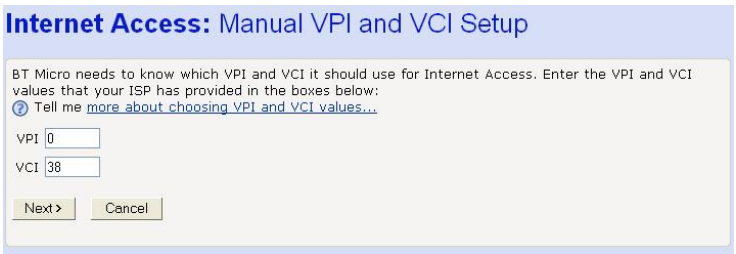


1. From the ADSL Modem: Types of Access page Select *Manual* then click *Next>*.

   The following page is displayed:

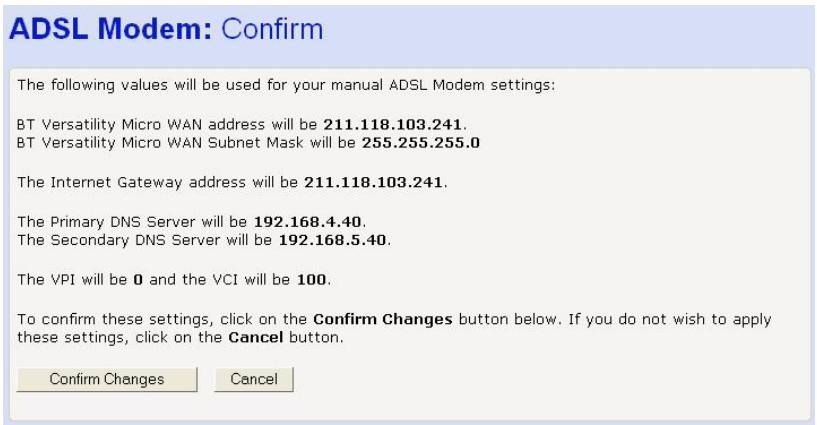


2. Click in each box and type the relevant address information provided by your ISP. Click *Next*>. The following page is displayed:



Enter the VPI and VCI values supplied by your ISP.

3. Click *Next*>. The following page is displayed:



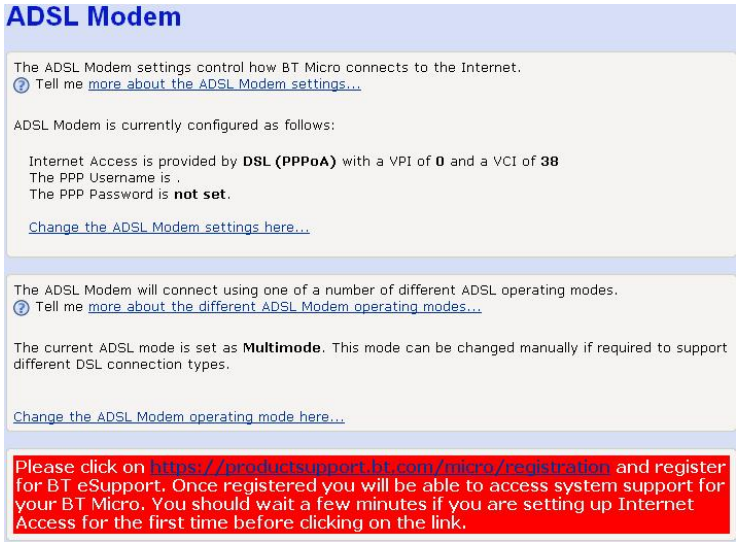
This page confirms the address settings that you have manually configured (the values displayed above are for example purposes only). If you selected the *Manual* option at step 5, the VPI and VCI values that you entered are also displayed on this page.

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

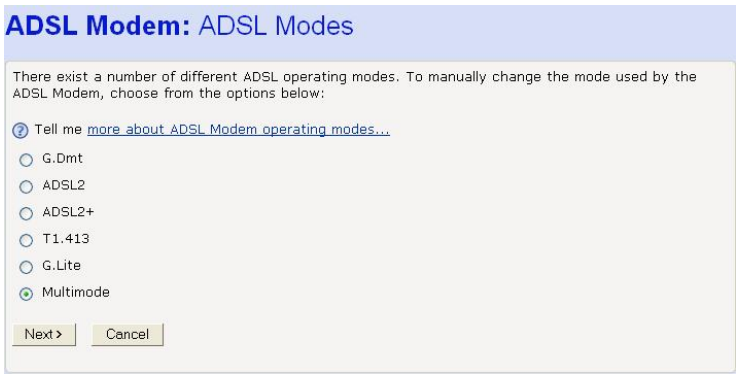
ADSL Mode – ADSL 2 and ADSL 2+

The default setting for the ADSL mode is set at Multimode. This will automatically configure the ADSL line to the correct mode for an ADSL service. However if the service is providing ADSL2

or ADSL 2+ these can be manually selected. From the ADSL modem page, shown here, select *'Change the ADSL Modem operating mode here'.*



The following page is displayed: -



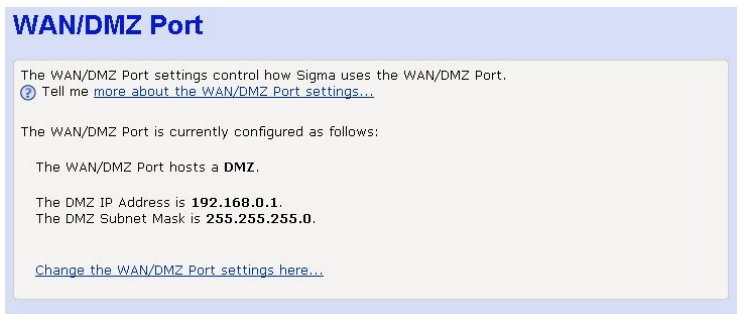
The default setting is Multimode. Select ADSL2 or ADSL2+ if this service is provided on your ADSL line.

WAN/DMZ Port

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

1. Select *Router Configuration* from the main menu

2. Select *WAN/DMZ Port* from the sub-menu. The following screen is displayed



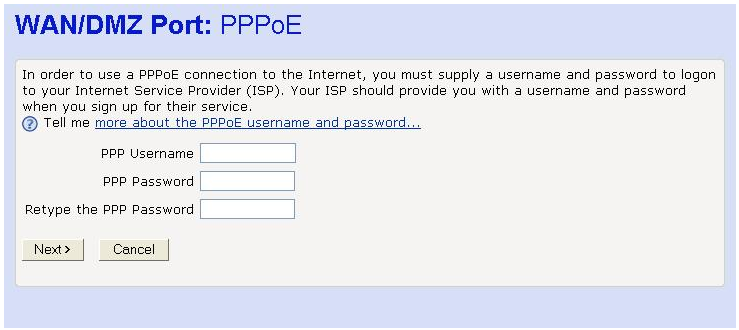
3. Select the *Change the WAN/DMZ settings here*. The following screen is displayed

Three options are presented, PPPoE, IP Gateway and DMZ

PPPoE

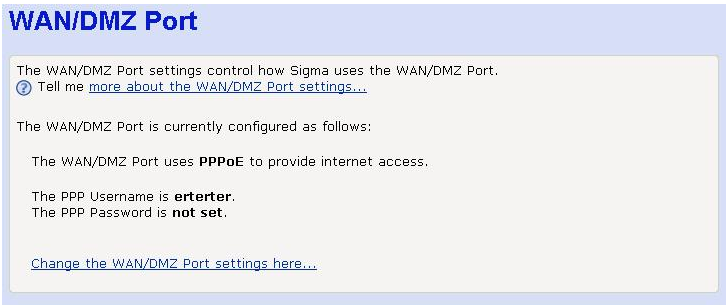
PPPoE is used when connecting to an external broadband modem.

1. Select "*PPPoE*". Click Next. The following screen is displayed



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

3. Select *Confirm Changes*. The following screen is displayed

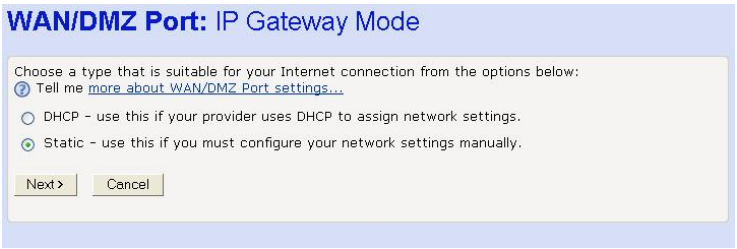


The PPPoE setup is now complete

IP Gateway

IP Gateway is typically used when connecting to another LAN or WAN.

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



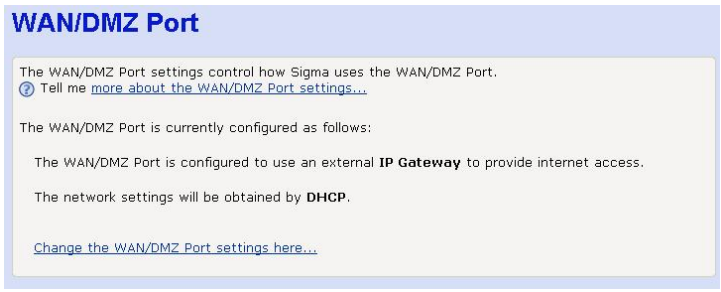
Two options are presented: -
DHCP - automatically assigns IP addresses

Static - allows the IP addresses to be entered manually

DHCP

Select *DHCP*. Click *Next.* The following screen is displayed

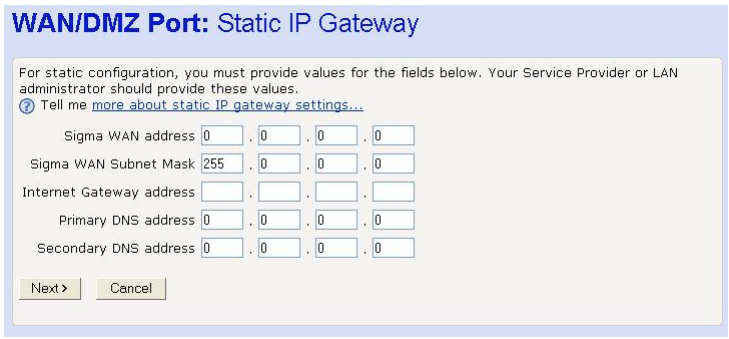
Select *Confirm Changes*. The following screen is displayed



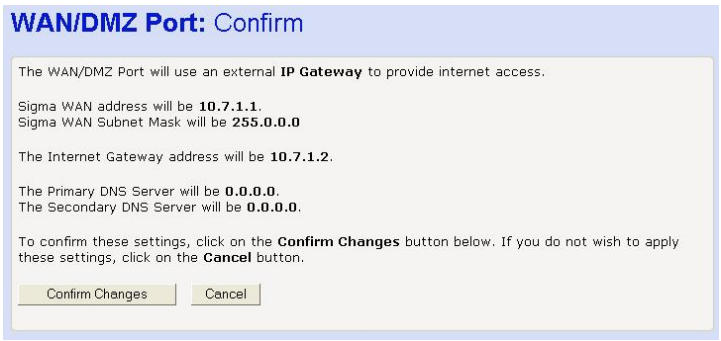
The DHCP IP Gateway setup is now complete.

Static

Select *Static*. Click *Next*. The following screen is displayed.



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

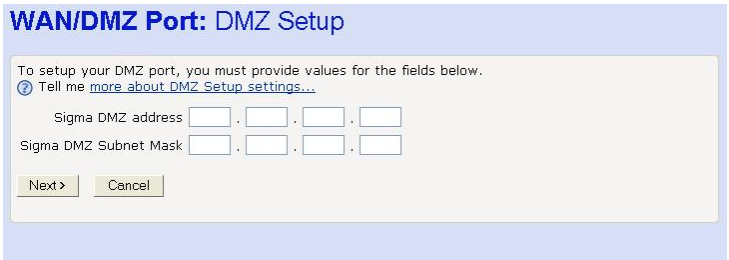


Select *Confirm Changes*. The following screen is displayed

The Static IP Gateway setup is now complete.

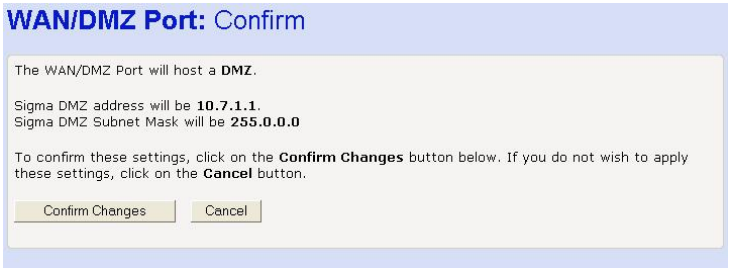
DMZ

A host can be connected to the WAN/DMZ Port.



1. Select *DMZ*. Click *Next.* The following screen is displayed

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



3. Select *Confirm Changes*. The following screen is displayed

The DMZ setup is now complete.

Password

You can restrict access to your BT Micro'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 BT Micro, and the username and password set are as follows:
Username: **admin**
Password: **admin**
For more information, see *Accessing the Web pages* on page 22.

Setting your username and password

Note

Non-authorised 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:

This page displays the current status of password protection.

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

3. 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 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.

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

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 22.

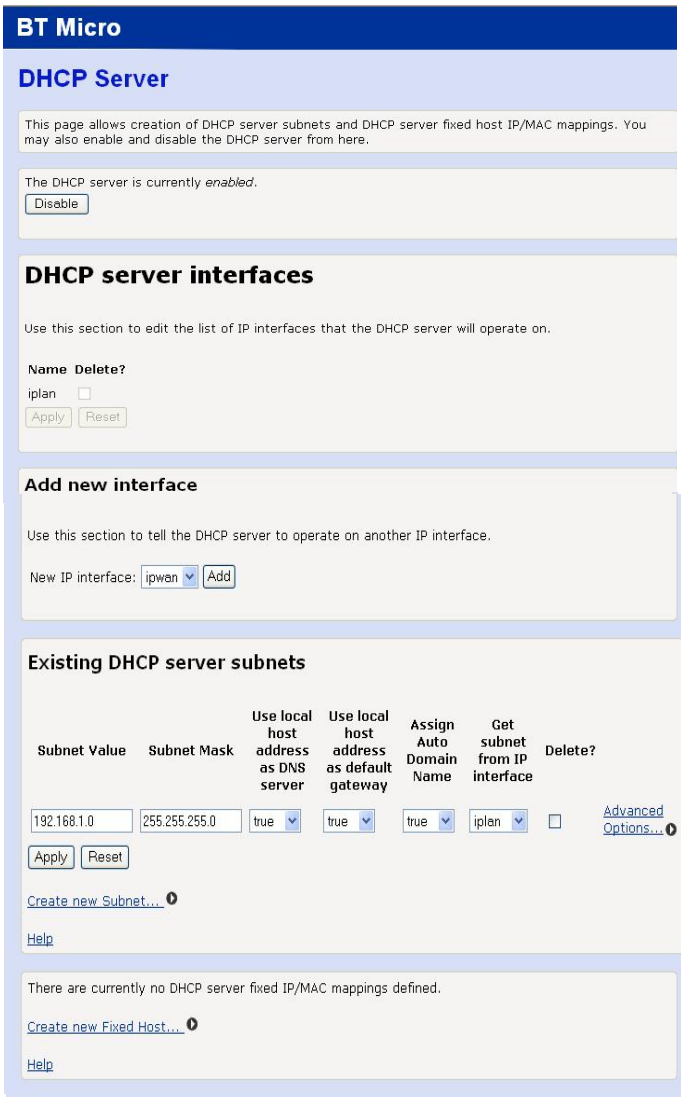
Disabling password protection

If you do not want to use password protection, follow the instructions in 'Setting your username and password' on page 87 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 page is presented.



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

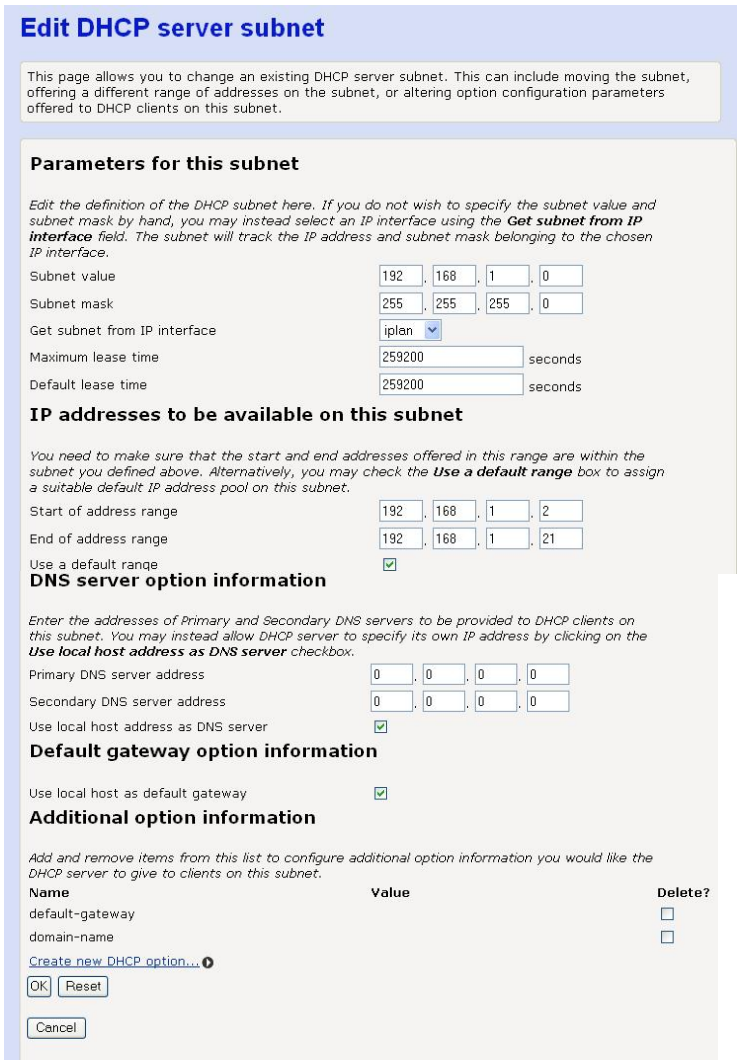
There is an option to tell the DHCP server to operate on the ipdmz interface as well as the iplan.

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

Select "Advanced Options"
The following screen is displayed



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

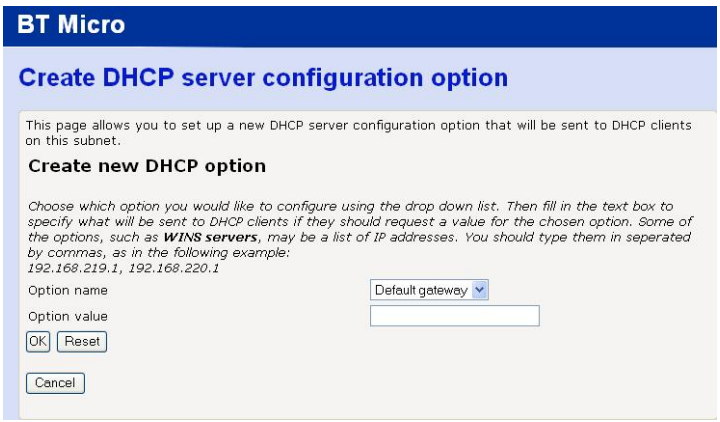
The default setting is use local host as the DNS server - all DNS requests are sent to the default gateway 192.168.1.1 which then relays the request to the DNS addresses negotiated at start up.
Specific DNS servers can be defined if required.

Default gateway option information

Use local host as default gateway is checked by default.

Additional option information

Select Create new DHCP option …
The following screen is displayed
Select on of the following options from the drop down menu:



Select the option required from the drop down menu.
Default gateway
Domain name
IRC server
HTTP server
SMTP server
POP3 server
NNTP server
WINS server
Time server

Enter the option value in the field below.
Select OK

To create a new subnet

Select Create new subnet …

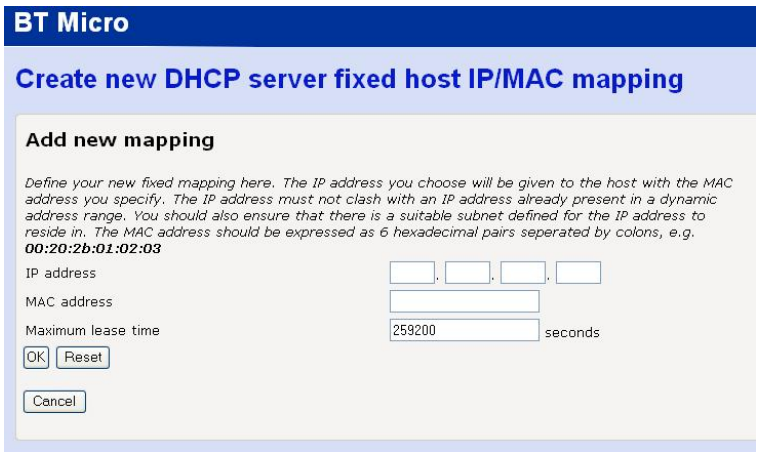
The screen displayed is the same as Edit DHCP server subnet with the Additional option information option.

To always assign the same IP address to a host

The same IP address is always assigned to a specific host with the specified MAC address.

Select "Create new Fixed Host …"

The following screen is displayed



Enter the IP address to be assigned to the host
Enter the MAC address of the host
Enter the maximum lease time in seconds
Select "OK".

IP Address

The *IP Address* page displays information about your LAN IP address and allows you to change the address and subnet mask assigned to your BT Micro.

Note

You should only change the addressing 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.

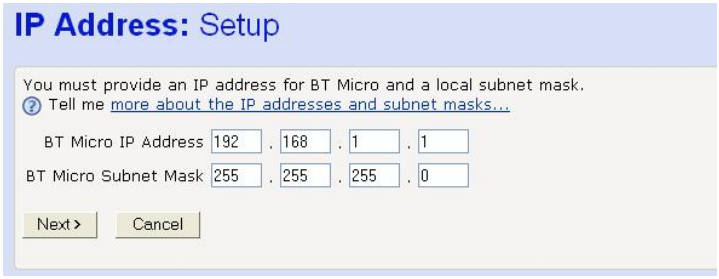
Changing the LAN IP address and subnet mask

Select *Router Configuration* from the main menu.

1. From the submenu, click on *IP Address*. The following page is displayed:

This page displays the current IP address and subnet mask assigned to your BT Micro. The default LAN IP configuration is IP address *192.168.1.1*, subnet mask *255.255.255.0*.

2. Click on *Change BT Micro Address settings here…* The following page is displayed:



3. Click in the IP Address and Subnet Mask boxes and type the new address details.

Note

Your LAN PCs must remain on the same subnet as your BT Micro (that is, the subnet masks must be the same) For more information about IP addresses and subnets, see 164. If necessary, reconfigure the LAN PCs so that their IP addresses place them in the same subnet as the new BT Micro IP address.

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

This page displays the new IP address and subnet mask and asks you to confirm whether these are correct. Click *Confirm Changes*. The *Addressing* page is displayed, confirming your new LAN address settings.

Note

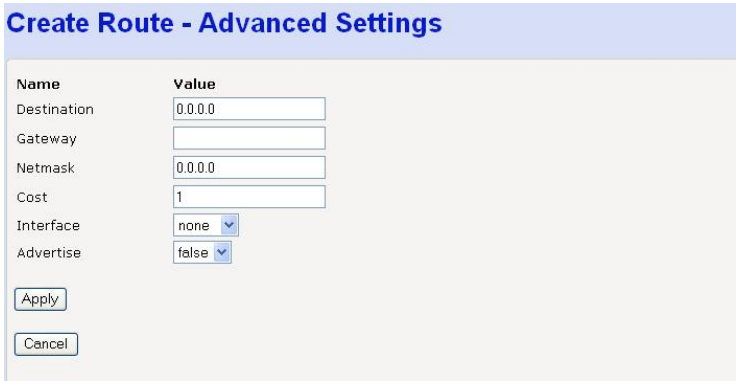
If you change the LAN IP address of the BT Micro while connected through your Web browser, you will be disconnected. You must open a new connection by entering your new LAN IP address as the URL. See Accessing the Web pages on page 22.

IP Routes

This allows static routes to be defined.

Select *IP Routes* in the Router Configuration menu. The following page is displayed: -

Select *Create new Route*



Enter the following parameters:

- Destination IP address
- Gateway IP address
- Netmask
- 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

Select "*Apply*"

The list of routes is displayed again.

Configuring Multiple Static IP

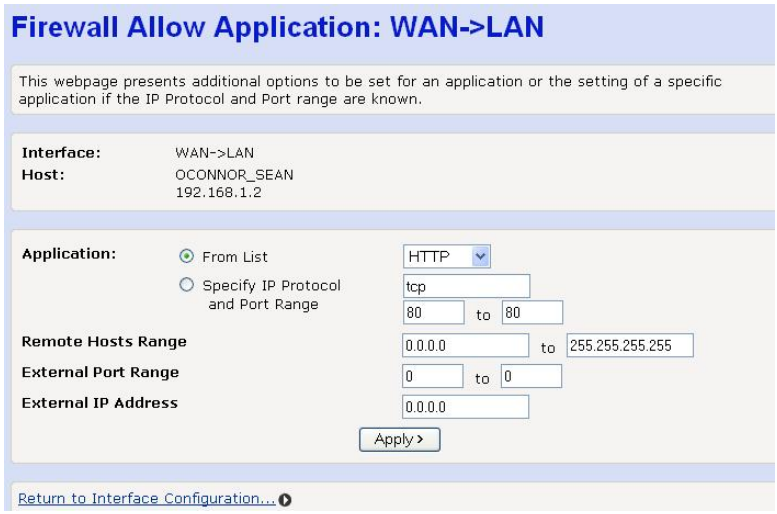
You must have subscribed to the Multiple Static IP service from BT. If the service is provided the following are the steps required to configure the BT Micro.

1. Select the Global Address programming page in Firewall/WAN->LAN/ Advanced NAT configuration.

Select '*Add Global Address Pool'*

In the IP Address Field enter the router (hub) address. This can be found in the Welcome e-mails and letters from BT.
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.

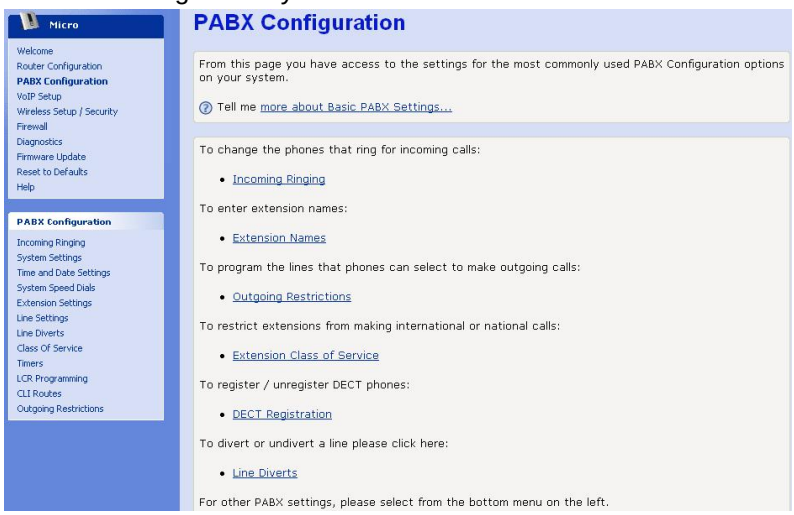
2. Associate the IP addresses with a host. Select Firewall/ Wan->LAN/Add Application/Advanced Settings



The External IP Address field is used to associate the external.IP address with the host

7 PABX Configuration using the web interface

Your PABX (Phone System) can be completely configured via the web management system.



The web management Welcome page contain a link to Basic PABX Settings, which are the configuration options that the user will most likely wish to change.
The Basic PABX Settings are:
Incoming Ringing

Extension Names

Outgoing Restriction

Extension Class of Service

DECT Registration

Incoming Call Diverts

Instruction for setting these basic options are given below. Additional instructions are also included for all other PABX configuration options. These may be accessed by selecting PABX Configuration from the main menu and then using the sub-menu below to access individual functions.

WARNING

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 page.

Incoming Ringing

By associating lines with individual extensions, you can have lines ringing different extensions 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 extension 20.
Also, in both DAY & NIGHT modes, all calls on IP Line (VoIP) 1 might be set to ring on extension 23 only.
To change the settings, select ON or OFF from the relevant drop down box for the line/extension configuration you require.

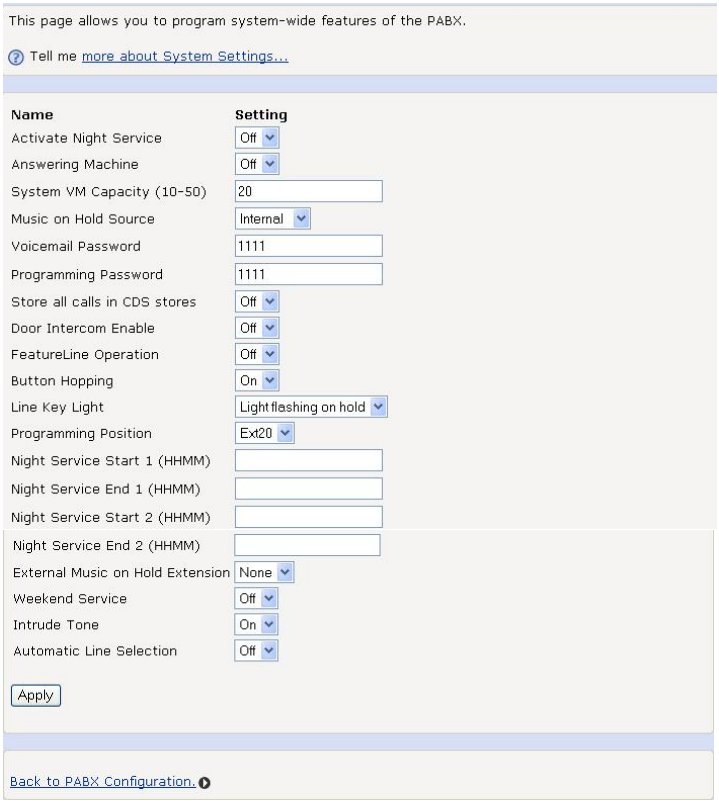
The default is that ALL lines ring ALL extensions in both Day and Night Modes.

Note

If more than one extension is programmed to ring for a line Incoming Call divert is activated if set and any diversions set by extensions will be ignored. If a single extension is programmed to ring then any diversion set for the extension will be activated.

System Settings

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 extension rings on incoming calls, what the Class of Service is for each extension and what type of voice greeting is played.
The system operates in DAY MODE unless the night service option is specifically programmed to operate.

System Voicemail

Enable a system-wide voice box, which operates like an answering machine for calls to the system not routed to specific extensions (see CDS routing)

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 an extension. See Music on Hold Extension, 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 the system answering machine from extension 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 a featurephone programming position

Store All Calls in CDS Stores

Use this setting to determine what received calls are recorded by the system in the Calling Line Identity (CDS) 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 CDS store.

Door Intercom Enable

Use this to enable the operation of a Door intercom connected via the system.

Featureline Operation

Use this setting to turn Featureline operation on and off. If the unit is equipped with a Featureline on line 1 and this option is turned on the system automatically inserts the additional digit 9 needed to make external calls on the Featureline.

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 featurephone. In default it is extension 20 but can be changed to any of the wired extension 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) at which night service 1 is deactivated on the system.

Night Service Start 2 (HHMM)

The time in 24-hour clock formats (HHMM) at which night service 2 is activated on the system.

Night Service End 2 (HHMM)

The time in 24-hour clock formats (HHMM) at which night service 2 is deactivated on the system.

Music On Hold Extension

Select an extension position to connect to an external music-on-hold source. The drop down menu displays all available extension 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

Intrusion Tone

Intrusion can be provided with or without a warning tone. The default is that tone is provided.

Automatic Line selection

When Automatic Line selection is turned on when an extension 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 featurephones or by pressing hookflash and dialling the extension number.

Edit Time & Date Settings

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

Date

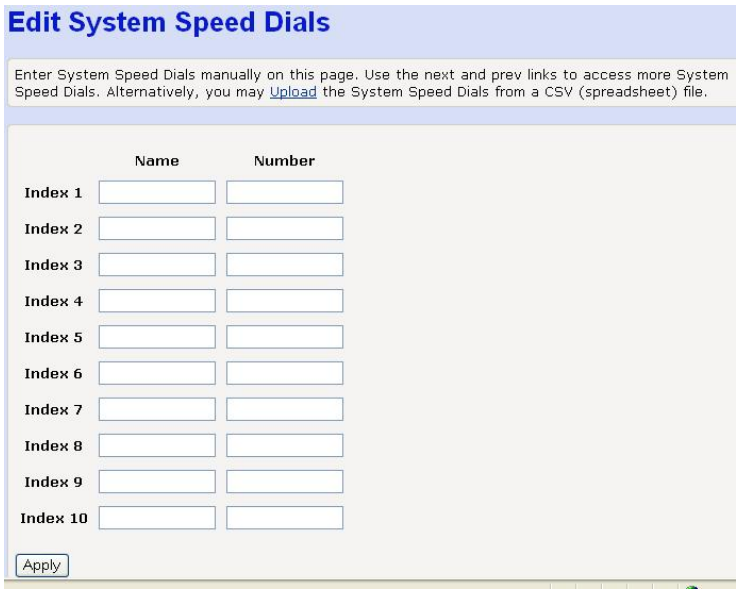
Use this field to enter the system Date - the time is in the DDMMYY format, where DD is the day, MM is the month & YY is the year.
For example, 3rd May 2006 = 030506

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 featurephone menu or by dialling the appropriate short code access from any POTS (analogue) phone.



This option allows the user to enter up to 99 System speed dial numbers, which will be available to all extensions. 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 24 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 page.

WARNING

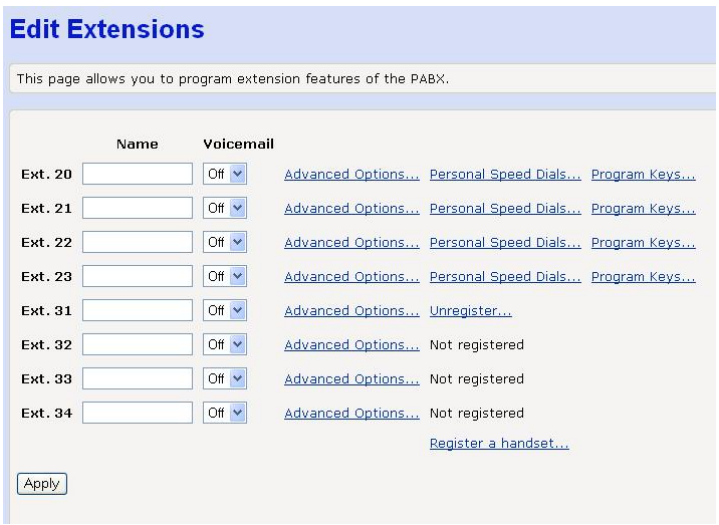
Make sure you select the APPLY button before proceeding to additional pages to complete more entries (e.g. Index 11 – 20), otherwise your changes will be lost.

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 page 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

Extension Settings

The settings on this page have an effect on an extension by extension basis. Individual features can be set or unset for particular extensions on the system.



Basic Settings

Extension Name
You may assign names to extensions. When an extension receives an internal call, its 'display' will show the calling extension name in the place of the calling extension number.
To set the extension name, left mouse click on the field and enter the name associated with the extension
A maximum of 10 characters per name can be entered.

Voicemail

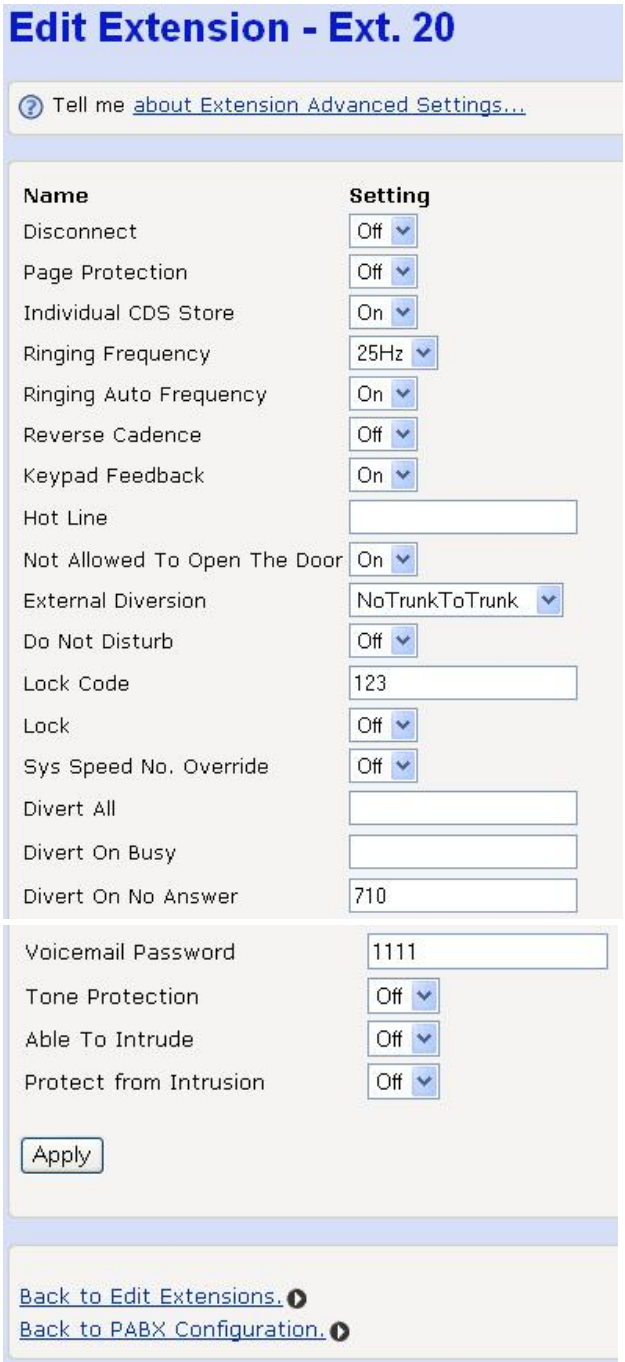
Use this setting to turn ON/OFF individual voicemail boxes for each extension.

Advanced Options

Select this option to edit Advanced Options for individual extensions.

Note

Advanced Options for the cordless extensions contain only a subset of the below features, as some of the features are not relevant for cordless extensions.



Disconnect

The system assumes that all available extension interfaces have telephones connected to them. If an extension interface does not have a telephone connected, ensure correct system operation by disconnecting the extension interface using the system programming
Use this option to functionally disconnected the extension from the system (this option does not physically disconnect the extension).

Page Protection

When selected the extension in question will not receive pages from featurephone 'Page-all' calls.

Not Allowed to Open the Door

The selected extension cannot be used to open the door when a call is placed over the door intercom.

Individual CDS Store

You can programme each extension to store five numbers each. Each of these extensions will have a separate record of calls that ring on exchange lines programmed to ring their extensions only.

Hot Line

Extensions can be programmed so that they automatically dial a number when they go off-hook. The number dialled can be an extension or an external number.
Left mouse click on the field and enter the hotline number associated with the extension. This is a telephone number up to 24 digits in length.
The user can enter another extension number, or an external number as required (include 9 to seize the outside line).

Ringtone Frequency / Ringtone Auto Frequency

This option allows the ringing frequency to be changed from the default 25Hz to 50 Hz on individual extensions.
If Auto Frequency is Off, then all extensions (featurephones and POTS phones) will ring at the selected frequency.
If "Auto Detect Featurephones" is ON, then only POTS extensions will ring at the selected frequency, (i.e. featurephone will Auto select their ringing frequency)

Reverse Cadence

Certain devices connected to an extension 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.
Divert All
Before you leave your extension, you can divert all your calls to ring at another extension. Alternatively, you can divert all external calls presented to your extension to an external number.
This function can be set for all extensions
Left mouse click on the data entry field for each extension.
Enter up to 24 digits in this field (include the trunk access digit of diverting to outside lines).


Note

Extension diversions only apply for calls specifically to that extension. So, or example, calls routed to the extension as part of a general Incoming Ringing group will not be subjected to

individual extension level diverts.

Divert on Busy

The 'Divert On Busy' feature allows you to divert all your calls to ring at another extension if your extension is busy (engaged). Alternatively, you can divert all external calls to an external number if your extension 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 extensions

Divert on No Answer

The 'Divert On No Answer' allows you to divert all your calls to ring at another extension if there is no answer at your extension after four rings. Alternatively, you can divert all external calls to an external number if your extension has not answered after four rings. In this case, internal calls will not be diverted but will continue to ring your extension.
This function can be set for all extensions

Left mouse click on the data entry field for each extension. Enter up to 24 digits in this field (include the trunk access digit of diverting to outside lines).

External Diversion

This option allows the administrator to enable or disable each extension'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)

WARNING

It is possible that an extension may misuse the External Divert facility. The Default setting is that no extension is allowed to set the facility.

Note

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

You cannot divert to an extension that has the 'Do Not Disturb' feature set.

Do Not Disturb

If your extension 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 a featurephone, '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. Extensions may be set not to ring.
This option cannot be set for extension 20.

Lock Code

You use a Lock Password to lock, unlock, or to make calls from a locked extension. The default Lock Password for all

extensions is 123, but each extension may change its password. Extension Lock Passwords can be examined from the Programming Extension.
The allowable range is a three digit code in the range 000 to 999.

Lock

This feature allows you to lock your extension to prevent unauthorised users from making external calls. Turn extension lock ON or OFF.

Voicemail Password

This is the password used to access individual extension voicemail boxes. By default, each extension 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 of conference tone is audible to the user. Where these tones are not required, the feature should be disabled.

Able to Intrude

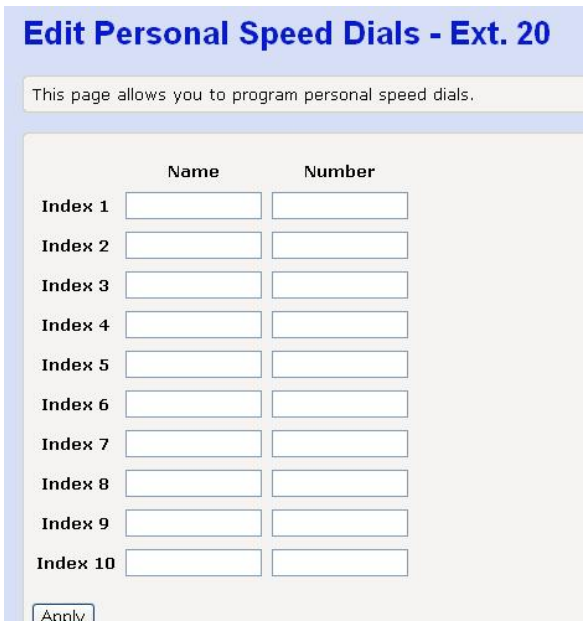
This allows the extension to intrude on other extensions on a call. When set On the Intrude option appears on the idle display of the featurephone.

Protect from Intrusion

Extension can be protected from being intruded on by other extensions.

Personal Speed Dials

You can dial your personal speed dials from the relevant option on your featurephone menu or by dialling the appropriate short code access from your POTS (analogue) phone.
This page allows the user to enter up to 30 personal speed dial numbers for each extension. The personal speed dials are referred to as Index 1 – 30.



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 page. You cannot divert to an extension that has the 'Do Not Disturb' feature set.*

WARNING

Make sure you select the APPLY button before proceeding to additional pages to complete more entries (e.g. Index 11 – 20), otherwise your changes might be lost.

Program Keys

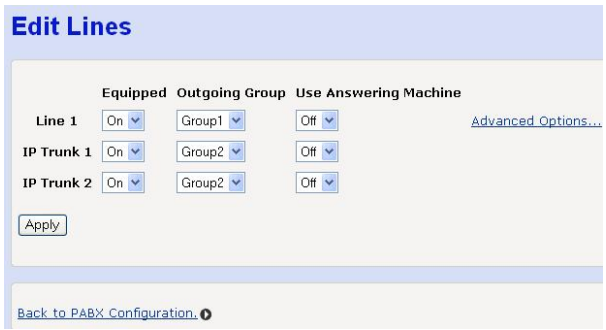
This option applies to featurephones only.
There are 8 programmable Function Keys on your system featurephone.
In default mode, the featurephone 'Program Keys' are programmed to select the external lines available on the system, the first key for Line 1 the second for Line 2 and so on.
Using your mouse, left click on the 'Function' menu option next to the Key you wish to programme. From the drop down list available, select the required setting.

Note

Some settings require additional data to be entered. e.g. Selecting "Extension" as the program function will require you to enter the actual extension number (e.g. 21, 32 etc..) in the associated 'Number' field.

Line Settings

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.



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 unequipping 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

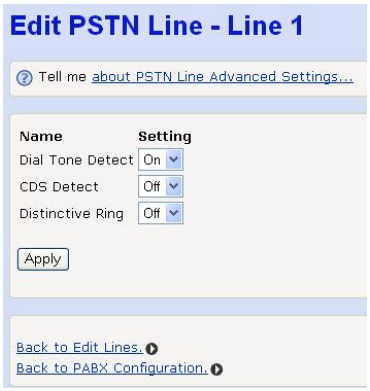
External lines can be grouped together in up to 2 Outgoing Groups.
Each Outgoing Group is associated with a code. These codes are 9 &, with Group 1 being associated with 9, etc.
Dialling a code selects a line from the associated Outgoing Group.
This option allows you to select the required Group for 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.
All messages received are stored in the answering machine, which is controlled by extension 20 or dialling 737 to turn it on and off from all extensions. Extension 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 an extension number, in which case the call will be transferred through to that extension.

Select this option to allow incoming calls only on the line to be answered by the answering machine.

Advanced Options



Dial Tone Detect

This option requires the system to detect dial tone before calls can be made.
If set to FALSE, this feature prevents the system from dropping the line when dial tone has not been detected.
In this case, the line is released if no digit is dialled until the expiration of a timer.

CDS (Caller ID) Detection

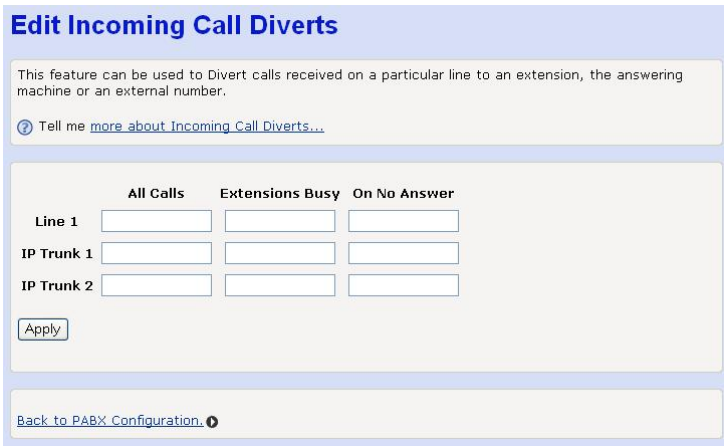
This option enables the system to detect incoming caller ID information received from the network and to display it on featurephones.

Distinctive Ring

If the distinctive ringing facility is required it is turned on here. See page 71 for a detailed description of the facility.

Incoming Call Diverts

You can use this feature to Divert (On Busy, No Reply or All Calls) calls received on a particular line to an extension or an answering machine.



For each incoming line (Line 1, IP Lines 1 & 2) you can define the extension to divert the call to for the cases of No Reply, Busy & All Calls. Divert on Busy only applies if the answering extensions 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 by BT.

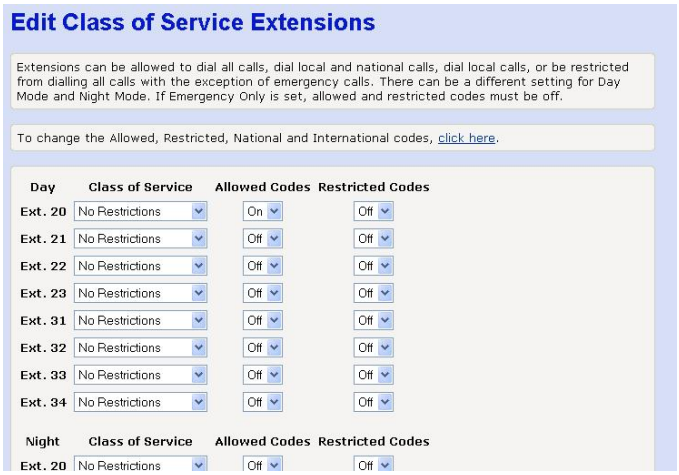
Note

*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 -> Extension Settings -> Advanced Options)

Class of Service

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



The following restrictions can be defined on a per extension basis:
No Restrictions

Restrict International

Local Only

Emergency Calls Only

By default ALL extensions 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 extension 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

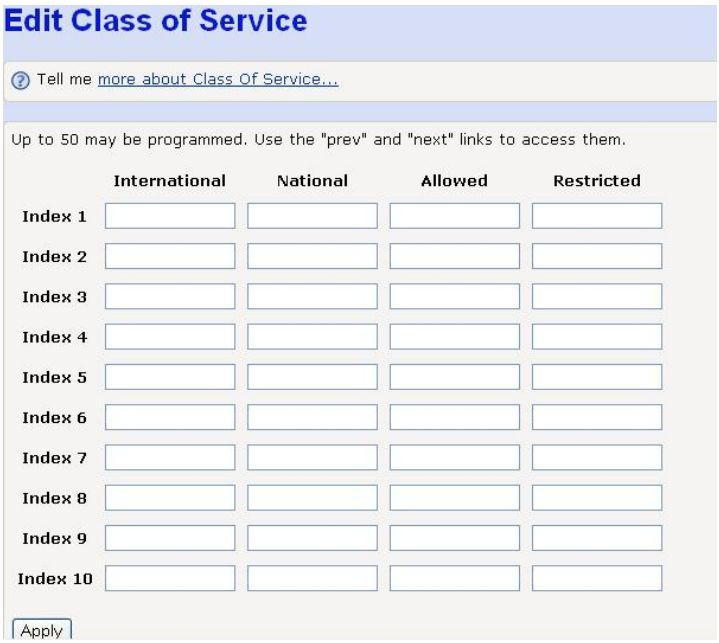
If 'Emergency Only' is set, Allowed and Restricted codes must be OFF.

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

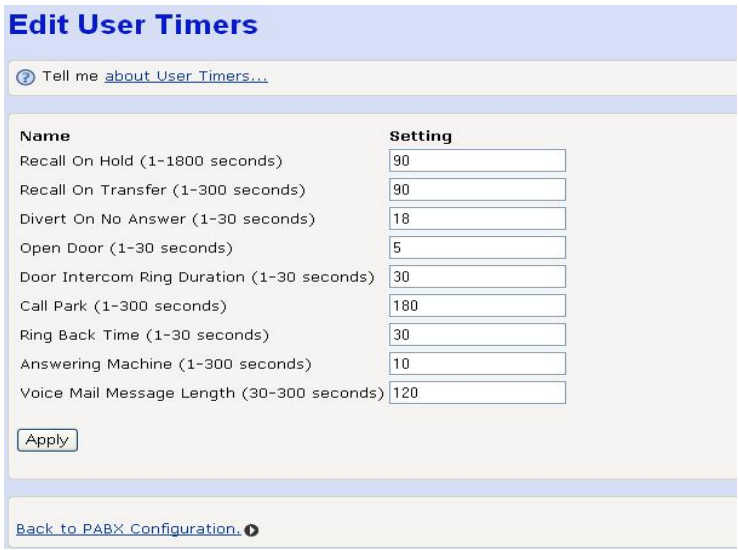
The definition of what constitutes Restricted, Allowed, National & International calls is determined by the leading digits of the dialled number.



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 Extensions'** page.

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 is within the individual timers limits.



Recall On Hold

This is the time that elapses before a call, which has been placed on hold, rings back the extension 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 extension that attempted the transfer.

Divert On No Answer

This is the time that elapses before a call ringing at an extension, with 'Divert On No Answer' set, is diverted.

Open Door

This is the time that the Doorstrike relay will remain open following activation.

Door intercom Ring Duration

This is the time that extensions will ring when the Door Intercom is pressed.

Call Park

This is the time that elapses before a call placed on 'Call Park' rings back the parked call extension.

Ring Back Time

This is the time an extension 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

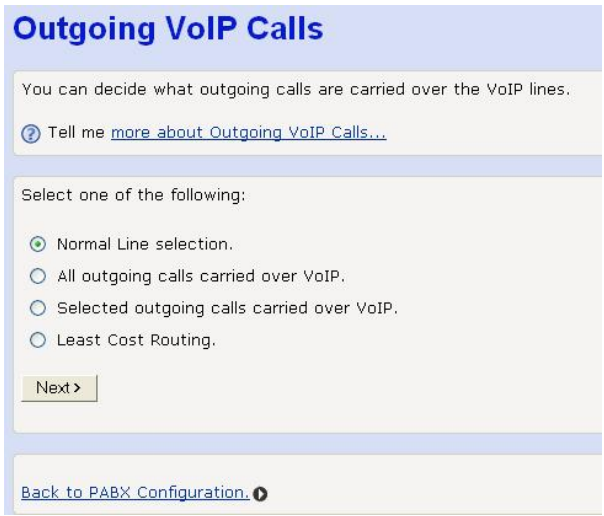
This is the maximum length of a message left in a Mailbox or a Greeting for a Mailbox, Auto Attendant or Courtesy service.

Outgoing VoIP Calls

In normal operation to make an outgoing call a line access code, 9 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 BT Micro 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.
Select Outgoing VoIP calls from the left-hand side menu. Four options are displayed.

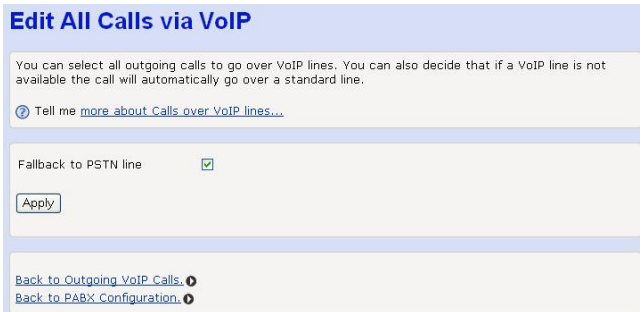
Normal Line selection

The default setting, Normal Line Selection means that a line access digit, 9 or 8, is dialled to select the line the call is made on. Nine is dialled to select Line 1 and 8 to select a VoIP line.



All Outgoing calls carried over VoIP

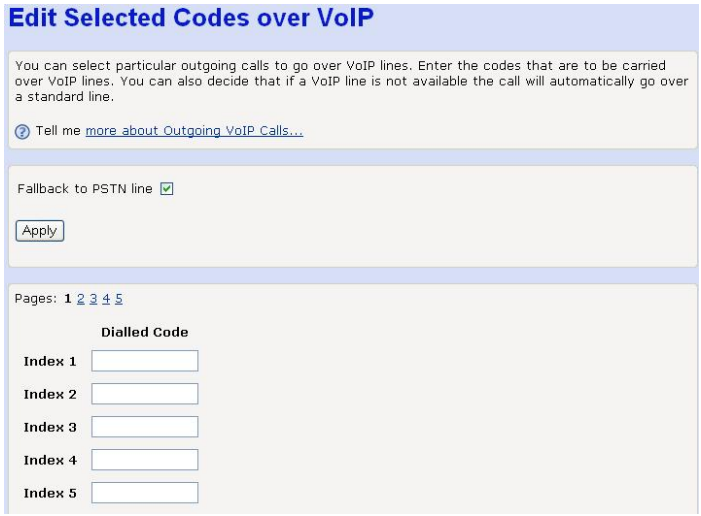
This option is selected if all external calls are to select the IP line.
The line access code 9 or 8 must still be dialled, or a Line key selected, to make an external call.
As soon as the first digit of the external number is dialled a free IP line will be selected.
An option is then provided so that if the IP trunk is not available or is busy the call will be placed over Line 1.
Select 'All outgoing calls carried over VoIP' and select '*Next*'.
The following screen is displayed: -



If you want calls to be dialled over Line 1 if the IP lines are busy then select *'Fallback to PSTN Line'*.
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'* box is not selected. Click *'Apply'*.

Selected Calls carried over 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.
In this case choose *'Selected outgoing calls carried over VoIP'*.
The following page is displayed: -

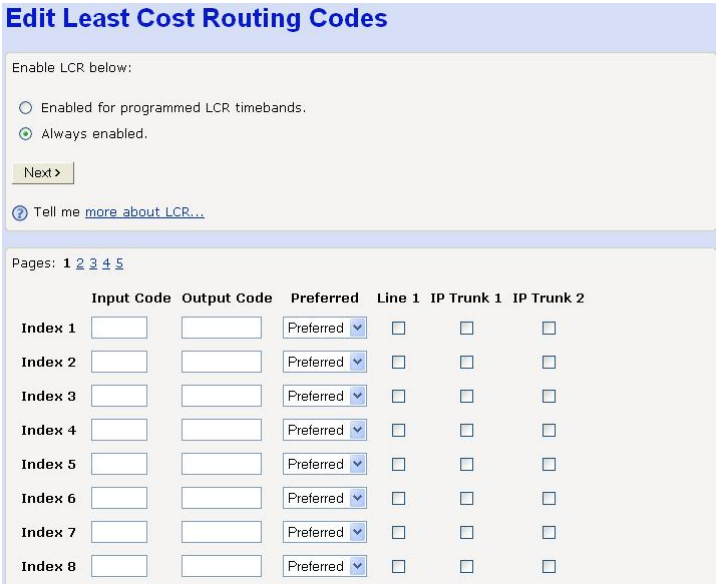


Enter the codes for the particular calls. For all international calls to be carried over the IP trunk enter 00 in Index 1.
If you want calls to be dialled over Line 1 if the IP lines are busy then select *'Fallback to PSTN Line'*.
If you only want calls to be dialled over the IP lines and busy tone to be returned if they are not available make sure that the *'Fallback to PSTN line'* box is not selected. 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 page you may define the Least Cost Routing criteria. Up to 30 LCR rules may be defined (Index 1 – 30).
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).
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 would typically match the Input Code.



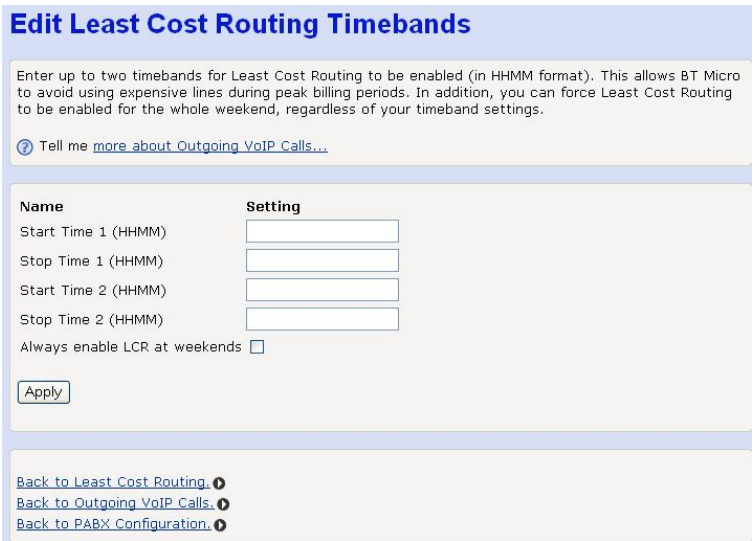
If you require to enter a network operator specific access code (sometimes referred to as an Indirect Access Code), enter this before the relevant dialled digits in the 'Output Code' field. The 'Output Code' entered will be dialled automatically by the system on front of the user dialled digits.

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 which 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 busy tone will be returned.

LCR Timebands

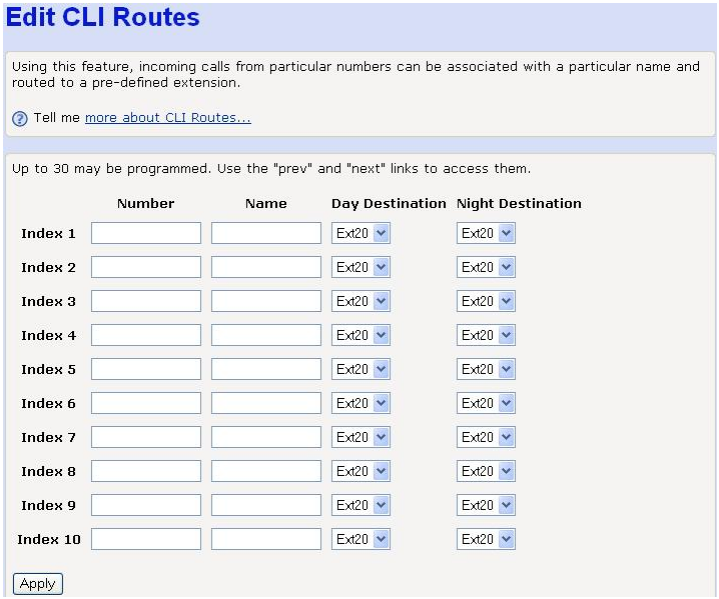
The option to turn Least Cost Routing on and off automatically is also provided. *Select Enabled for programmed LCR timebands* and select *Next*. The following page is displayed: -



Two start and stop times can be selected. Also the option to enable LCR throughout the weekend is also available

CDS Routes

Using this feature, incoming calls from particular numbers (Caller Identities – CDS) can be associated with a particular name and routed to a pre-defined extension.



You can use this feature, for example, to ensure that all calls from important customers are routed to the managers office, or that all calls from your children's friends are routed to their individual extensions.
In the number field, enter the callers number (CDS) as is delivered by the network. You may choose to associate a name with this number. This name will be displayed for calls routed to a featurephone extension.
You may then define which extension calls from this CDS shall route to. Options for Day & Night routing exist. To set the system Day & Night mode times see PABX Configuration -> System Settings.
Up to 30 individual entries can be made, refereed to as Index 1-30.
To access the entries for Index 11 – 30, use the *Next* button on the bottom right hand corner of *the Edit CDS Routes* page.

Note

If no name is entered for the incoming CDS, the system will compare the incoming CDS against the speed dial list to match for a name.

Outgoing Restriction

You can use this feature to restrict an extension from being able to make outgoing (external) calls on particular lines
Configure the restriction for each line separately, i.e.
Turn OFF for those extensions that are not allowed to select the particular line to make outgoing calls.

Distinctive Ringing

This feature is primarily intended to support Fax. BT can provide a second number on the standard line that rings with a different signal (BT Call Sign™). The system is then programmed to ring an extension that can be equipped with a Fax machine when this ringing is detected. The recommended use for this facility is to have a separate number for Fax calls and route these calls to an extension equipped with a fax machine.
There are two elements to programme distinctive ringing. The first turns distinctive ringing on for Line 1, see page 109 and the second determines which extensions are to ring when the second cadence is detected.

Select those extensions to ring when the second ringing signal type is detected on the line. Different extensions can be selected when the system is in day or night mode.

Note

All calls ringing with the normal cadence ring the extensions programmed in the Incoming ringing programming see page 97.

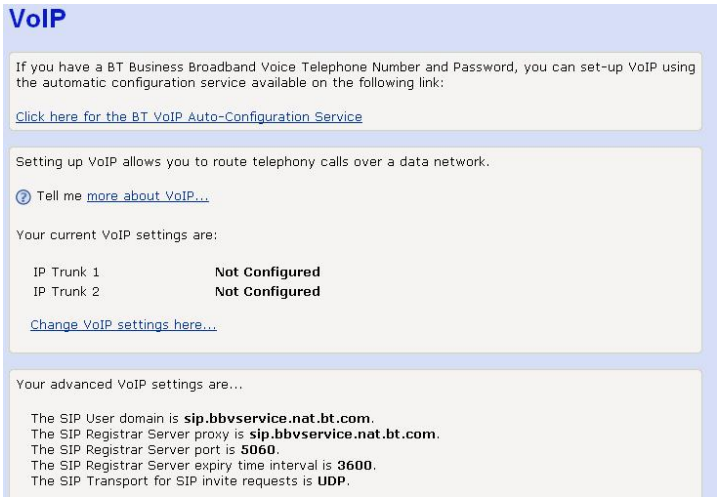
8 VoIP / Broadband Voice Settings

VoIP (Broadband Voice) is a way to make and receive phone calls using your broadband Internet connection instead of your standard phone line. BT Micro converts your phone calls into data that is sent over your high-speed Internet connection.

Automatic VoIP configuration

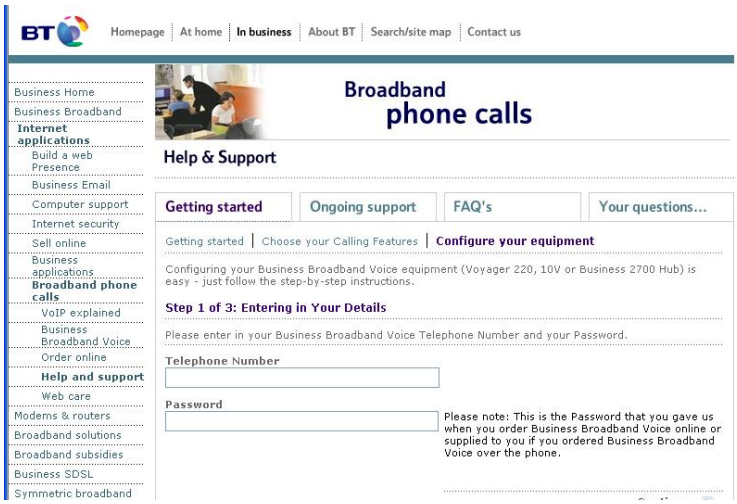
If you have ordered a Broadband Voice line from BT you will have been given a telephone number and password. This is used to automatically configure your system.

Select VoIP from the left-hand side menu

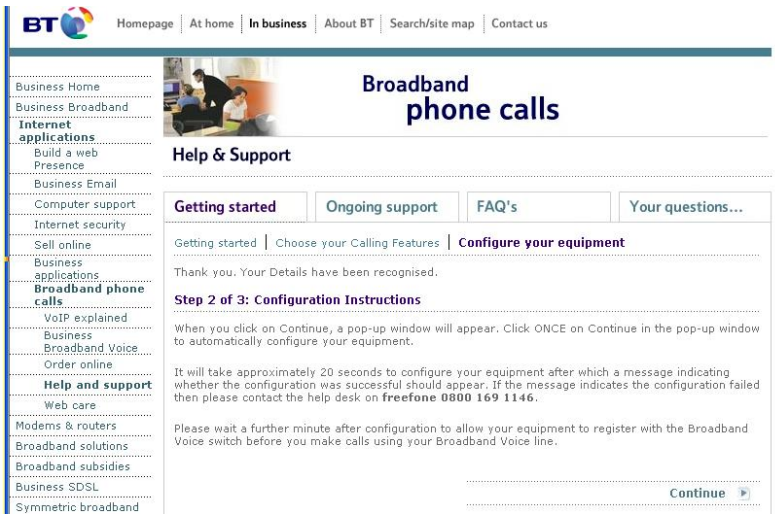


Select 'Click here for the BT VoIP Auto-Configuration service'

The following web page is displayed.

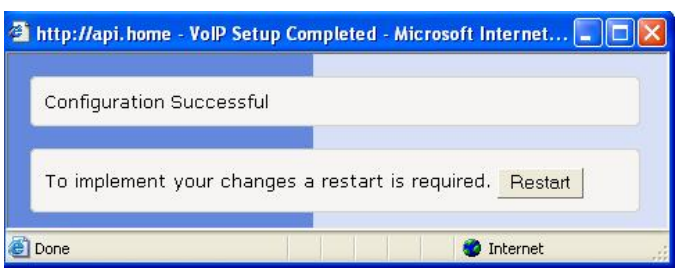


Enter the supplied Telephone number and password

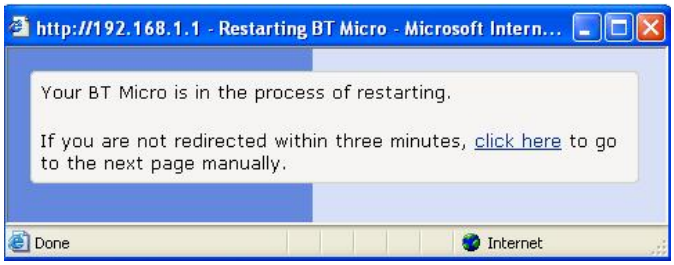


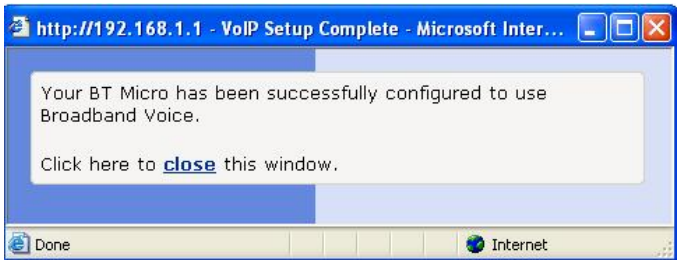
Select Continue

Select Continue



Select Restart





There may be some instances where the following screen is presented.

Enter the user name and password used to access the web management pages. This is 'admin' 'admin' in default.

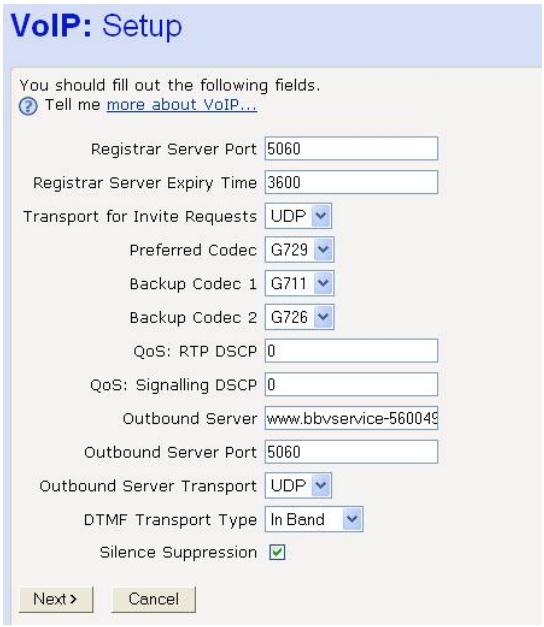
Basic VoIP Settings

The option to manually configure the IP Trunks is not provided. The automatic VoIP configuration process listed above must be used to activate IP trunk operation.

Advanced VoIP Settings

Your system uses Session Initiation Protocol (SIP), an internationally recognised standard for implementing Voice over Internet Protocol (VoIP).

You can change the VoIP settings by selecting *Change Advanced VoIP settings here.* These should not normally be changed.



Registrar Server Port
The registrar server port may be any value between 1 and 65535. It is the port used by the SIP proxy server.

Registrar Server Expiry Time

The SIP registrar server expiry time interval can be any number between 1 and 86400. The timer is in seconds, and sets the frequency with which BT Micro refreshes its registration with the SIP proxy server.

Transport for Invite Requests

The transport for SIP invite requests may be either TCP or UDP

Preferred Codec

The following codecs are supported on the system:
G.729

G.711

G.726.

A Codec (Coder/Decoder) converts analogue voice signals into digital signals for transmission over the IP network.

Definition

Use this field to select the type of voice codec that you want the system to use. The choice of voice codec is a trade-off between transmission speed, sound quality and desired bandwidth usage.

The G.711 codec provides higher voice quality than G.729 but requires 82.8kbps of bandwidth as opposed to 26.8kbps for G.729. The system can connect to other VoIP systems that use the same codec.

Backup Codec 1

This field specifies the first backup codec to use in the event that the far end does not support the Preferred Codec.

Backup Codec 2

This field specifies the second backup codec to use in the event that the far end does not support the Backup Codec 1.

Definition

About Quality of Service (QoS) Differentiated Services Code Point (DSCP) is a field in an IP packet that enables different levels of service to be assigned to network traffic. This is achieved by marking each packet on the network with a DSCP code and appropriating to it the corresponding level of service or priority.

If supported, the DSCP QoS can give you a better quality connection by using the DSCP QoS field to increase the priority for your traffic.

QoS: RTP DSCP

This field sets the DSCP code to be used for voice/payload (RTP) traffic in your VoIP call.

QoS: Signalling DSCP

This field sets the DSCP code to be used for signalling traffic in your VoIP call.

Outbound Server

This field sets the name of the Outbound Server.

Outbound Server Port

This field sets the Outbound Server Port.

Outbound Server Transport

This field sets the type of the Outbound Server transport used.

DTMF transport

This determines the method of handling DTMF signalling when on a call. In Band is the normal setting for BT Broadband Voice. The alternative settings of RFC 1483 and SIP Info are available if required on other VoIP services.

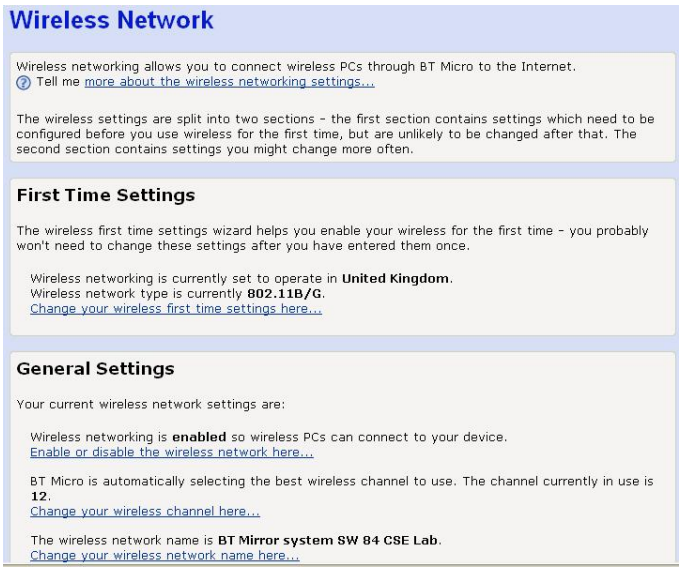
Silence suppression

This is set off in default. This may be turned on if required. There may be cases where the silence suppression increases the delay on a call to a noticeable level causing packet losses resulting in clicking. In some of these cases turning silence suppression off may improve the situation.

9 Wireless LAN Setup / Security

The instructions in this chapter assume that the PCs or other devices you want to operate on the Wireless LAN are set up and equipped with wireless LAN cards.

The *Wireless Network* page allows you to configure the Wireless features of your BT Micro.
From the left-hand *Setup* menu, click on *Wireless Setup / Security*. The following page is displayed:



The settings on this page are split into two sections:
First Time Settings; contains a hyperlink wizard that takes you through a sequence of pages, with each page corresponding to a specific wireless network setting. You should only need to change all of these settings once; i.e., when you initially setup your wireless network. See Wireless Network First Time Settings Wizard on page 124.

This section also displays the country that the wireless network is set to operate in and the type of wireless network used.
General Settings; contains details of the current wireless configuration and hyperlinks relating to individual wireless network settings previously configured by completing the First Time Settings wizard. This allows you to make changes to specific wireless settings without going through the entire wizard. See Wireless Network General Settings on page 133.

Wireless Network First Time Settings Wizard

This section describes how to follow the wireless network wizard in order to configure your wireless network settings for the first time. The wizard sequence allows you to configure each of the following Wireless settings in order:
The country that your network is operating in

The specification standard used by the wireless network

The wireless network name

The wireless network channel

Wireless network security

Wireless network address authentication

Note

Each page of the wizard contains a Cancel *button. Click on this if you want to exit the wizard at any time.*

Setting the Country

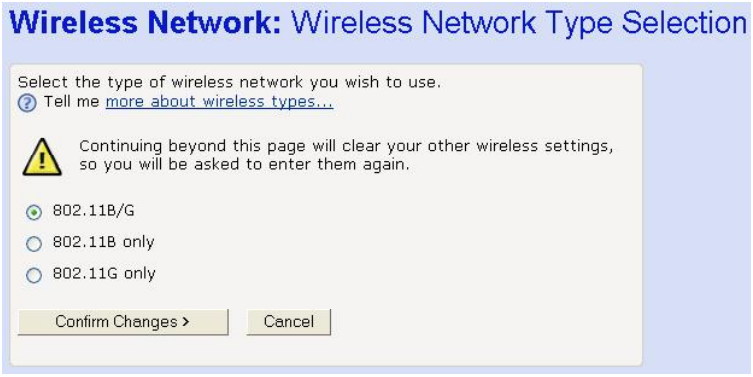
1. From the *First Time Settings* section of the *Wireless Network* page, click *Change your wireless first time settings here…* The first page of the wizard is displayed:

The number of valid wireless network frequencies varies from country to country and you need to identify which country you are operating the BT Micro in to ensure that your network will transmit on the correct frequency.

2. From the *Country* drop-down list, select the appropriate country. Click on the *Confirm Changes>* button to apply configuration changes and move on to the next page in the wizard sequence, which allows you to *Select your Wireless Network Type*.

Select your Wireless Network Type

The following page allows you to select the Institute of Electrical and Electronics Engineers (IEEE) specification supported by your network:



Each specification transmits at a certain speed (measured in Mbits per second) over a specific frequency. The frequency indicates the range at which wireless traffic can be transmitted or received between the BT Micro and the wireless PC(s). Supported specifications are:
802.11B only – provides slower rates at a longer range than 802.11G (11 Mbps in the 2.4 GHz band)

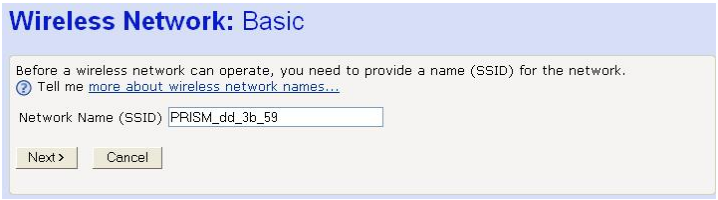
802.11G only – provides faster rates at a shorter range than 802.11B (20+ Mbps in the 2.4 GHz band)

802.11B/G – supports both of the above specifications, but 802.11G rates will be slower than they are in a G-only network

To select a network type, click on a single radio button.
Click on the *Confirm Changes>* button to apply configuration changes and move on to the next page in the wizard sequence, which allows you to set the wireless network name.

Set the Wireless Network Name

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



Your BT Micro 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. It also ensures that only those PCs configured with the same name as the one set on your BT Micro can obtain access to it. By default, the network name starts with *PRISM_* and ends with the last six digits of your BT Micro's MAC address. For security reasons, we recommend that you replace the default network name with a unique value of your own.
To do this:

1. Click in the *Network Name (SSID)* box and type a new name. The name can be any combination of numbers and/or letters with a maximum length of 32 characters.
2. Click *Next>.*

If you are following the *First Time Settings* wizard, the next page in the wizard sequence is displayed, which allows you to *Select a channel.*

If you have accessed this page from the *General Settings* section of the *Wireless Network* page, click on the *Confirm Changes* button to apply changes and return to the *Wireless Network* page.

Select a Channel

The following page allows you to select a network channel:

Your BT Micro and all of the wireless PCs in your wireless LAN must share the same channel number. Each channel represents a regulatory channel frequency (MHz). Some countries may regulate the use of certain channel frequencies. Your ISP determines which channels are available and whether you should allow automatic or manual channel selection.

To configure channel selection, choose one of the following options:

If you want the BT Micro to automatically select the best channel for your network, click on the *Allow BT Micro* to select channel option and then click *Next>*.

If you want to manually select a channel, click on the *Select a channel manually* option and then click *Next>*. The following page is displayed:

Select a suitable channel (as advised by your ISP) from the *Channel* drop-down list and then click *Next>.*

If you are following the *First Time Settings* wizard, the next page in the wizard sequence is displayed, which allows you to *Configure Wireless Network Security.*

If you have accessed this page from the *General Settings* section of the *Wireless Network* page, click on the *Confirm Changes* button to apply changes and return to the *Wireless Network* page.

WARNING

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

Configure Wireless Network Security

The following page allows you to configure wireless security:

You can protect your wireless data from potential *eavesdroppers* by encrypting wireless data transmissions. An eavesdropper might set up a compatible wireless adapter within range of your BT Micro and attempt to access your network. Data encryption is the translation of data into a form that cannot be easily understood by unauthorised users.
There are two methods of wireless security to choose from: Wired Equivalent Privacy (WEP); 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 network key. Each PC on your wireless network must be manually configured with the same key as your BT Micro 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.

Wi-Fi Protected Access (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 PCs 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 BT Micro.

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>*. Off is the default setting, but you are **strongly recommended** to use wireless network security on your BT Micro.

If you are following the *First Time Settings* wizard, the next page in the wizard sequence is displayed, which allows you to *Configure Wireless Address Authentication.*

If you have accessed this page from the *General Settings* section of the *Wireless Network* page, click on the *Confirm Changes* button to apply changes and return to the *Wireless Network* page.

If you want to use WEP 64bit data encryption, click on the 64bit encryption on the wireless network radio button and then click Next>. Now follow the instructions in Configuring 64bit or 128bit encryption on page 128.

If you want to use WEP 128bit data encryption, click on the 128bit encryption on the wireless network radio button and then

click Next>. Now follow the instructions in Configuring 64bit or 128bit encryption on page 128.

If you want to use WPA, click on the Wi-Fi Protected Access (WPA) on the wireless network radio button and then click Next>. Now follow the instructions in Configuring WPA security on page 128.

Configuring 64bit or 128bit encryption

The example set in this section is for 128bit encryption, however the outline also applies to 64bit encryption.
Once you have selected your WEP encryption method and then clicked *Next>,* the following page is displayed:

Click in the *Key* box and type a unique 26-character hex network key, such as *A6F34B2CE5D68BE90A6F34B2CE*.

Note

Hexadecimal or 'hex' numbers each have a value of 0 to 9 or A to F. Each number represents four bits of binary data.

Note that if you selected 64bit, you will need to type a unique 10-character hex network key.

Click *Next>.*
If you are following the *First Time Settings* wizard, the next page in the wizard sequence is displayed, which allows you to *Configure Wireless Address Authentication.*
If you have accessed this page from the *General Settings* section of the *Wireless Network* page, click on the *Confirm Changes* button to apply changes and return to the *Wireless Network* page.

Configuring WPA security

Once you have selected WPA and then clicked *Next>,* the following page is displayed:

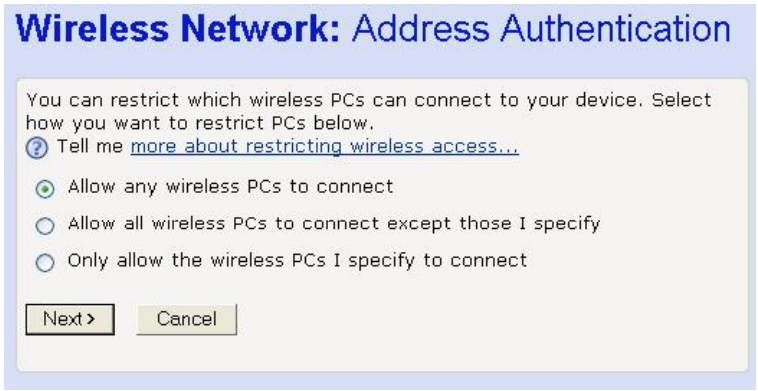
1. Type a unique pass phrase in the *Pass phrase* text box. Your pass phrase should be at least 20 characters long in order to deter potential intruders.
2. Once you have typed a pass phrase, click *Next>*.

If you are following the *First Time Settings* wizard, the next page in the wizard sequence is displayed, which allows you to *Configure Wireless Address Authentication.*

If you have accessed this page from the *General Settings* section of the *Wireless Network* page, click on the *Confirm Changes* button to apply changes and return to the *Wireless Network* page.

Configure Wireless Address Authentication

The following page allows you to configure which wireless PCs can access the BT Micro:



By default, any wireless PC that is configured with your network's SSID and channel number can connect to your BT Micro. 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 BT Micro, but all other wireless PCs **can**.

a wireless PC whitelist; PCs on this list **can** access the BT Micro, 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*.

If you want any wireless PCs to have access to your BT Micro, click on the *Allow any wireless PCs to connect* radio button. Click *Next*>.
If you are following the First Time Settings wizard, the final page in the wizard sequence is displayed, which allows you to Confirm Wireless network changes.

If you have accessed this page from the General Settings section of the Wireless Network page, click on *the Confirm changes* button to apply changes and return to the Wireless Network page.

If you want to create a blacklist of PCs that cannot access your BT Micro, click on the *Allow all wireless PCs* to connect except those I specify radio button and then click *Next*>. Now follow the instructions in Configuring the wireless PC blacklist on page 130.

If you want to create a whitelist of PCs that can access your BT Micro, click on *the 'Only allow the wireless PCs I specify to connect'* radio button and then click *Next*>. Now follow the

instructions in Configuring the wireless PC whitelist on page 131.

Configuring the wireless PC blacklist

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:

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

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:

This page allows you to configure the addresses on the blacklist:

If you want to add another MAC address to the blacklist, click Add an address here… and repeat the instructions described in step 0.

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>.*
If you are following the *First Time Settings* wizard, the final page in the wizard sequence is displayed, which allows you to *Confirm Wireless network changes*.
If you have accessed this page from the *General Settings* section of the *Wireless Network* page, click on the *Confirm Changes* button to apply changes and return to the *Wireless Network* page.

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:

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

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:

This page allows you to configure the addresses on the whitelist:
If you want to add another MAC address to the whitelist, click Add an address here… and repeat the instructions described in step 0.

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>.*
If you are following the *First Time Settings* wizard, the final page in the wizard sequence is displayed, which allows you to *Confirm Wireless network changes*.
If you have accessed this page from the *General Settings* section of the *Wireless Network* page, click on the *Confirm Changes* button to apply changes and return to the *Wireless Network* page.

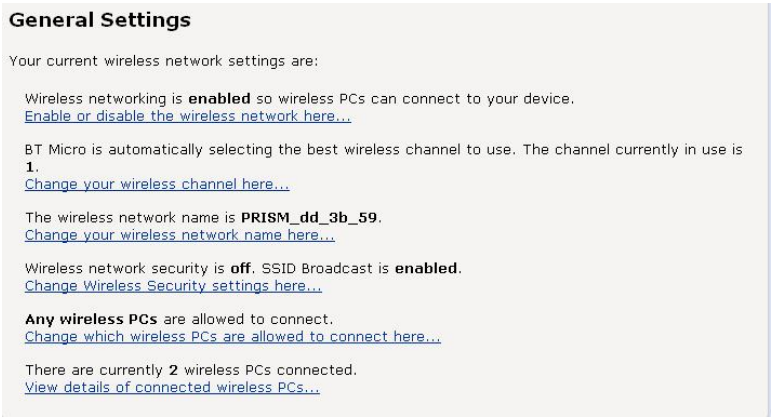
Confirm Wireless network changes

Once you have configured Wireless Address Authentication and clicked on *Next>,* the following page is displayed:

This page confirms the configuration changes made to each page in the wizard. If you are happy with these settings, click on the *Confirm Changes* button. Configuration changes are applied to the BT Micro and the *Wireless Network* page is displayed.
Once you have completed the *First Time Settings* wizard, you can edit specific wireless settings using the hyperlinks displayed in the *General Settings* section of the *Wireless Network* page.

Wireless Network General Settings

The *General Settings* section of the *Wireless Network* page displays details of the BT Micro's current wireless configuration. For example:



The hyperlinks in this section allow you to:
Enable/disable wireless networking; see Enabling/disabling wireless networking on page 133.

Change the channel currently in use; click Change your wireless channel here… and follow the instructions in Select a Channel on page 126.

Change the network name (SSID); click Change your wireless network name here… and follow the instructions in

Set the Wireless Network Name on page 125.

Configure wireless security; click Change Wireless Security settings here… and follow the instruction in Configure Wireless Network Security on page 127.

Configure address authentication; click Change which wireless PCs are allowed to connect here… and follow the instructions in Configure Wireless Address Authentication on page 129.

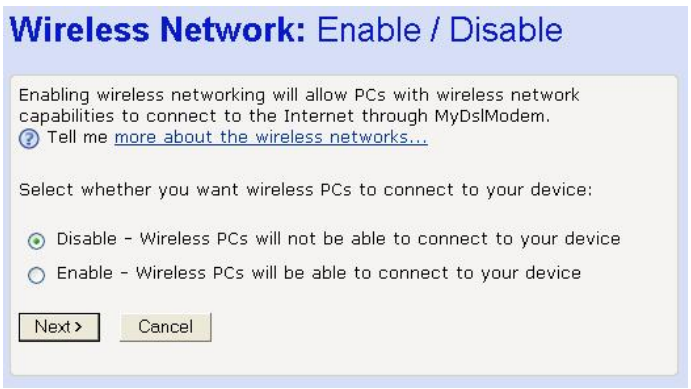
Display information about the wireless PCs connected to the BT Micro; see Displaying details of Wireless PCs on page 134.

Enabling/disabling wireless networking


Note

Once you have completed the First Time Settings wizard, wireless networking is enabled on the BT Micro by default.

At the *Wireless Network* page, click on *Enable or disable the wireless network here…* The following page is displayed:



Choose whether to enable or disable wireless networking:
To enable the network, click on the Enable radio button and then click Next>. This takes you through a subset of the First Time Setting wizard, starting with the page that allows you to configure the current Wireless Network Name. Follow the instructions starting from

Set the Wireless Network Name on page 125.

To disable the network, click on the Disable radio button and then click Next>. The next page confirms the disabled state of the wireless network. If you are happy with this configuration, click on Confirm Changes. The Wireless Network page is displayed.

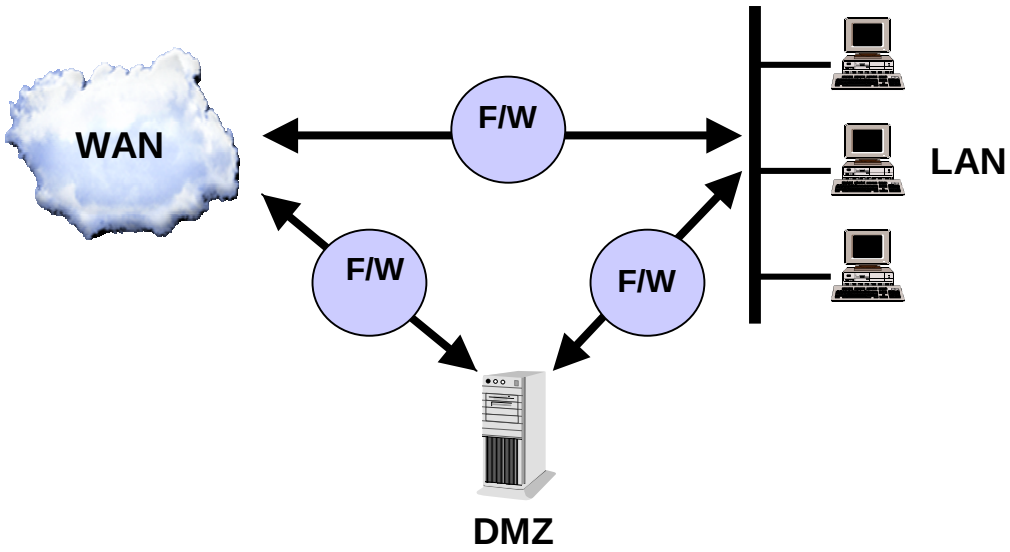
Displaying details of Wireless PCs

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

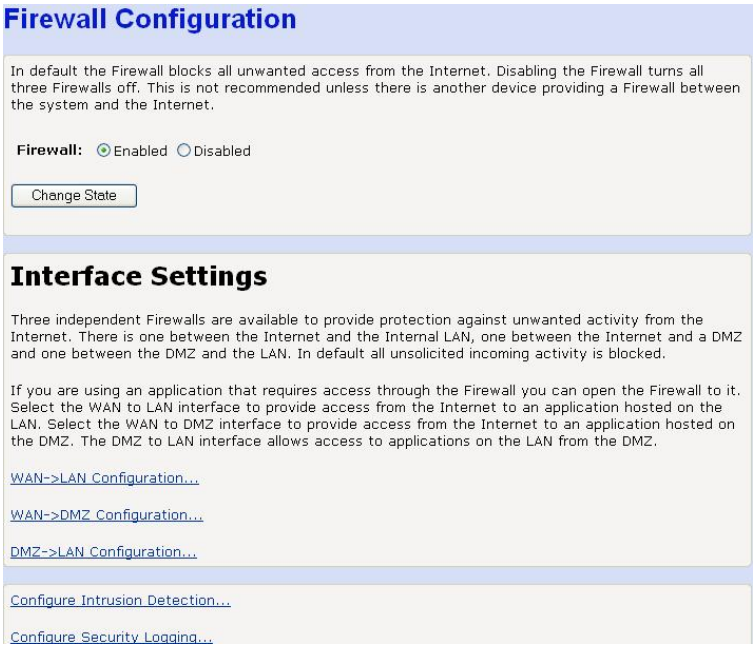
This page displays the MAC address of the PC currently connected to your BT Micro, together with the signal strength. The signal strength is the measure of radio frequency (RF) energy detected by the BT Micro on a specific channel. Signal strength may vary depending on the position of the PC(s) in relation to the BT Micro.
To return to *Wireless Network* page, click on *Return to the wireless status page*.

10 Firewall

Three independent Firewalls are available to provide protection against unwanted activity from the Internet. There is one between the Internet (WAN) and the Internal LAN, one between the Internet (WAN) and a DMZ and one between the DMZ and the LAN.
In default all unsolicited incoming activity is blocked.



Select Firewall from the left-hand side menu. The following page is displayed: -



The Firewall is enabled on all three interfaces in default. Selecting the 'Disabled' button and selecting 'Change State' disables the Firewalls.

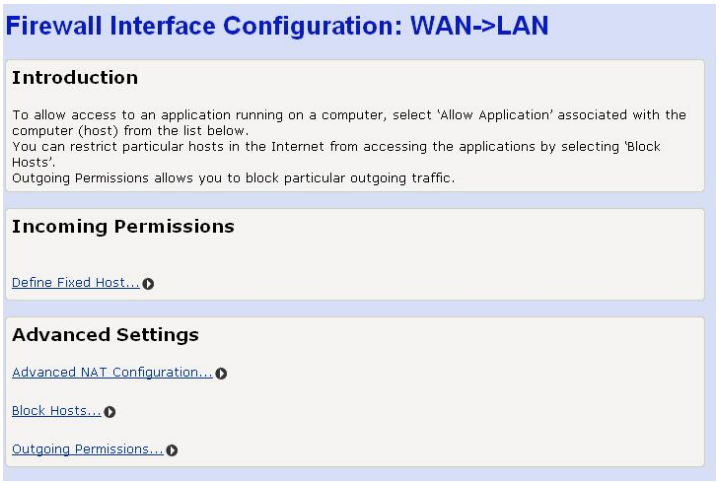
WARNING

Disabling the Firewall turns all three Firewalls off and allows all external traffic access to the internal networks.. This is not recommended unless there is another device providing a Firewall between the system and the Internet.

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.

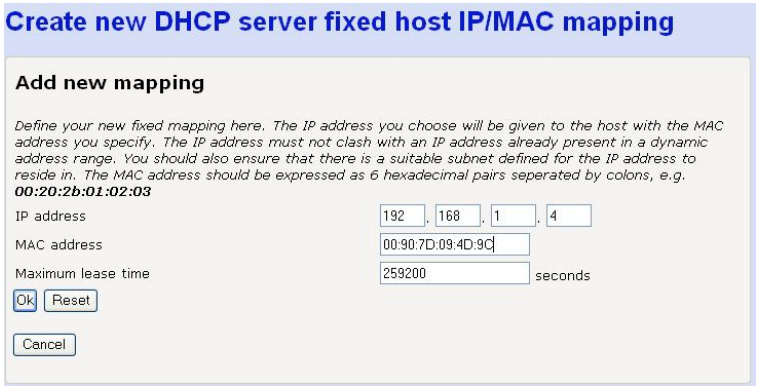
It is recommended that applications that are accessed from the Internet are located PCs connected to the DMZ. Locating these applications here allows them to be isolated from your own network by the Firewall between the DMZ and LAN.

Select the interface the application is to be hosted on. The following page is displayed when WAN to LAN is selected. A similar page is displayed when WAN to DMZ or DMZ to LAN is selected.



The PC hosting the application needs to be assigned an IP address that does not change. In normal operation the DHCP server may change the IP address so this must be changed. To do this select the *'Define Fixed Host'* link in the *Incoming Permissions* field above. The following page is displayed: -

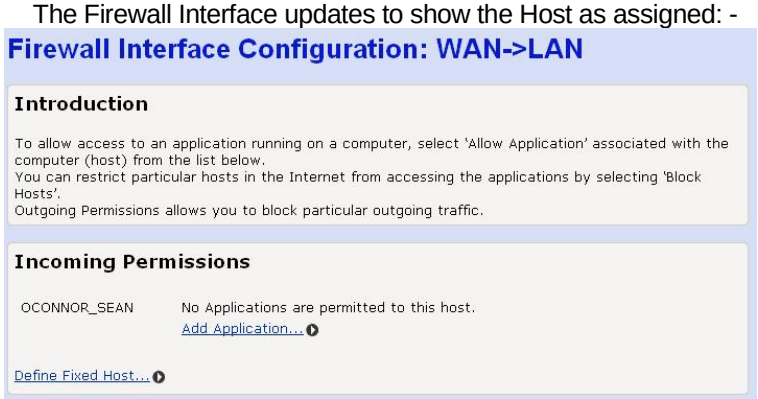
Enter the IP address of the PC and the MAC address .See Page 203 for instructions on finding the MAC address.



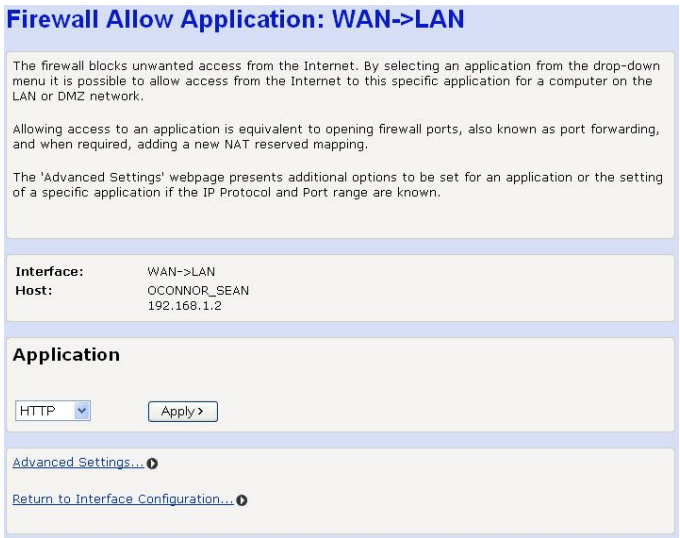
Note

The screen to input the IP and MAC addresses are part of the Router Configuration. You will notice that the Router Configuration is highlighted on the left-hand screen. When the IP and MAC address are entered please select 'Firewall' from the left-hand side menu and select the Interface again.

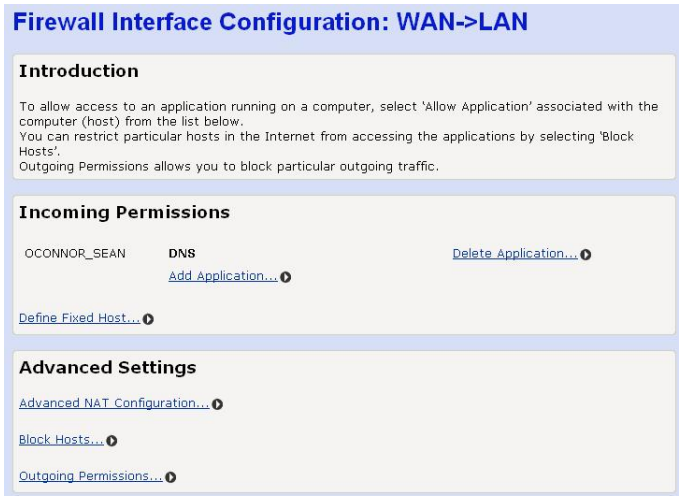
The Firewall Interface updates to show the Host as assigned: -



Select *'Add Application'.*

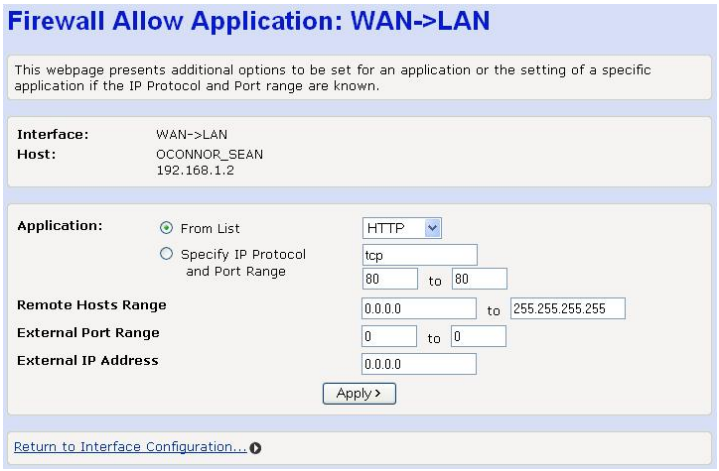


Select the application from the drop down list and *'Apply'*



In the example shown above DNS has been added to the host.

If it is necessary to define an application or assign particular ports for an application select *'Advanced Settings'* on the *'Firewall allow Application'* page



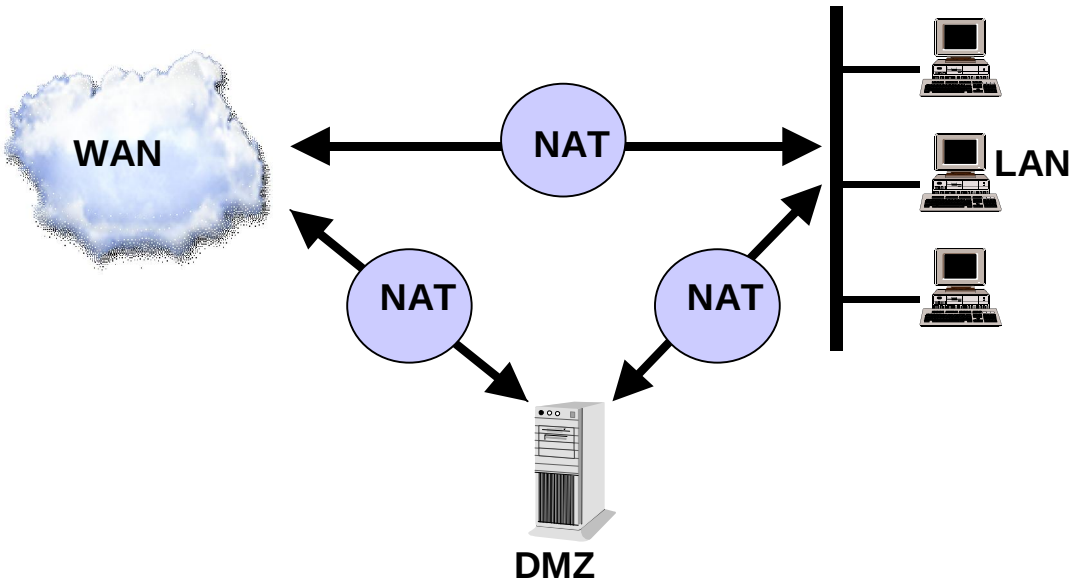
Select the Application from the Drop-down menu or select the *'Specify IP Protocol and Port Range'.* If there is more than one Protocol required for the Application then each protocol must be separately entered i.e. enter one protocol and the port range and apply it. Re-enter the Advanced Settings page and enter the next protocol etc.

If you wish to restrict the devices on the Internet that can access the application enter the IP address range that is allowed access. The default entries of 0.0.0.0 and 255.255.255.255 means all devices on the Internet can access the application. To restrict the access, enter the IP address range here by entering an IP address in each box. You can restrict access to one device by entering its address in the two boxes.

See Page 94 for assigning Multiple Static IP which used the External IP Address

NAT (Network Address Translation)

NAT operates independently on each interface and is enabled by default on each of the three interfaces.



To disable NAT

From the Firewall Interface Configuration page select Advanced NAT configuration.

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.
Select "*Add Global Address Pool …"* . The following screen is displayed: -

Select an interface from the drop down list
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.
Select "*Blocked Hosts* …" in the Advanced settings pane of the *Firewall Interface Configuration* page.
The following screen is displayed

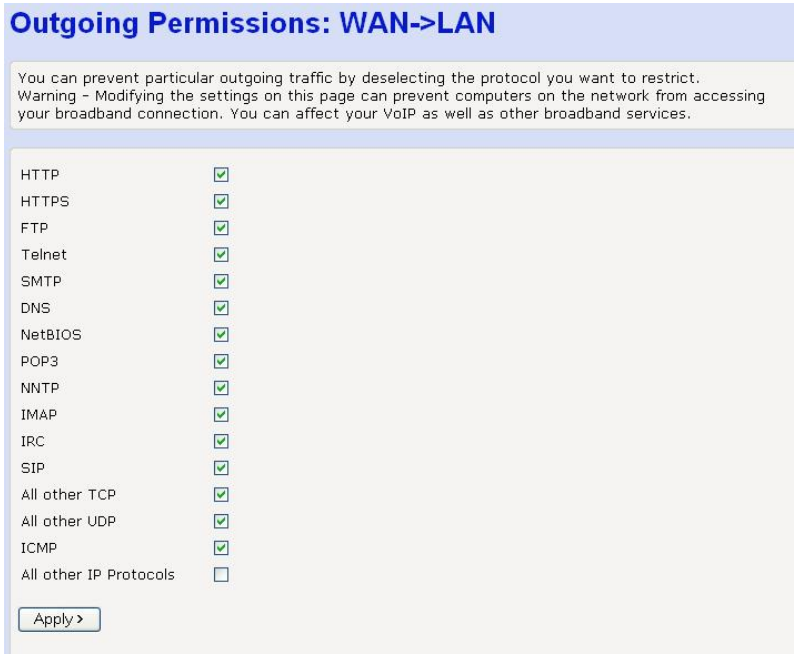
Select "*Add Blocked Host …* " for the selected interface

The following screen is displayed

Enter the host IP address and Subnet mask
Select the direction, "Inbound", "Outbound" or "Both"
Select "Apply"
Save the new configuration
Restart the system.

Outgoing Permissions

You can restrict outgoing access for particular protocols.
Select "*Outgoing Permissions* …" in the Advanced settings pane of the *Firewall Interface Configuration* page.



The protocols allowed are shown with a √

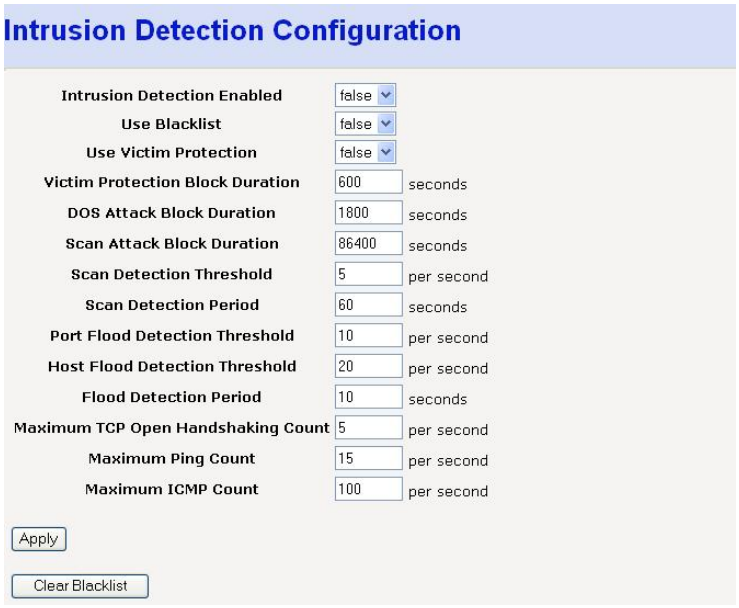
WARNING

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.

Intrusion Detection

This is used to detect and block incoming attempts to attack or block traffic to the site.
Select "*Intrusion Detection …* " from the left-hand side Firewall sub-menu.

The following screen is displayed



Enter the following parameters

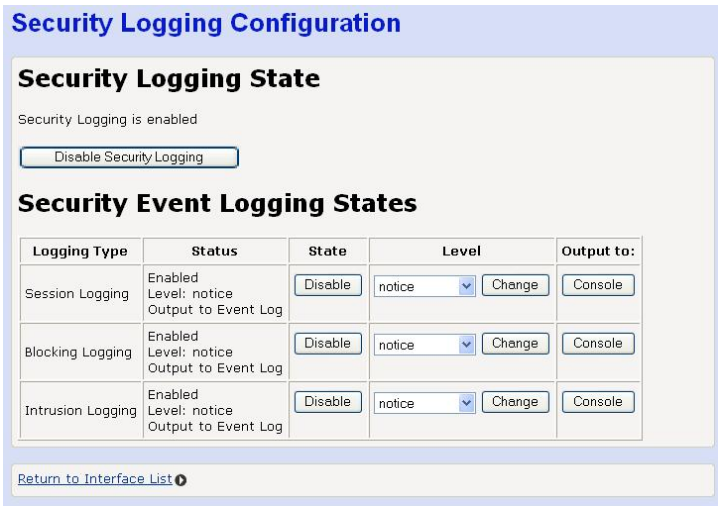
Use Blacklist	Enables or disables blacklisting of an external host if the firewall has detected an intrusion from that host. Access is denied to that host for 10 minutes.
Use Victim Protection	Enables or disables the blocking of incoming broadcast Ping commands for the period specified in Victim Protection Block duration.
Victim Protection Block Duration	The period for which incoming broadcast Pings are 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.

Select "*Clear Blacklist*" if you wish to clear all external hosts from the blacklist.
Select "*Apply"*
Save Configuration
Restart the BT Micro

Security Logging

Select "Security Logging …" from the left-hand side Firewall sub-menu.

The following page is displayed



Logging is enabled by default for Session Logging, Blocking Logging and Intrusion Logging.

To disable all logging:

Select "*Disable Security Logging*"

Session Logging, Blocking Logging and Intrusion Logging.

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

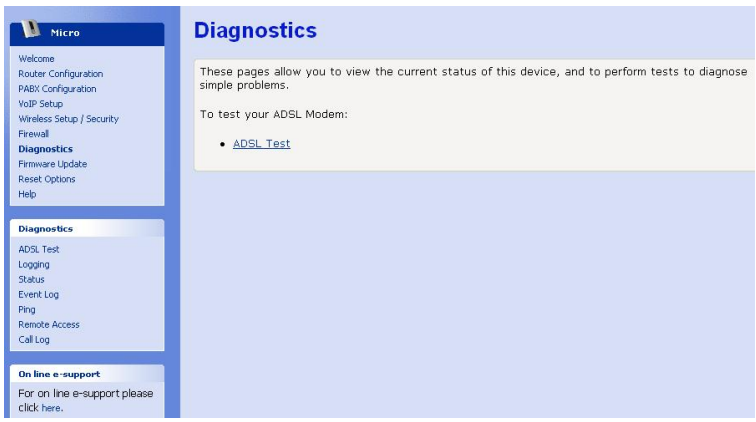
There are certain applications that NAT and Firewall configurations cannot manage. In many cases, ALGs (Application Level Gateways) are needed to translate and transport packets correctly. An ALG provides a service for a specific application such as FTP (File Transfer Protocol).

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 Messenger)	5190	N/A
FTP (File Transfer Protocol)	21	N/A
IKE (Internet Key Exchange)	N/A	500
ILS (Internet Locator 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

11 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: -

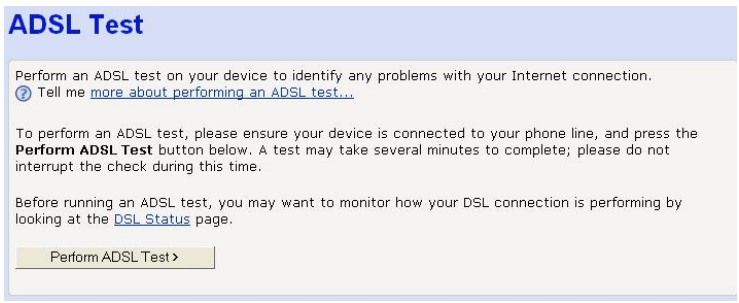


ADSL Test / ADSL Status

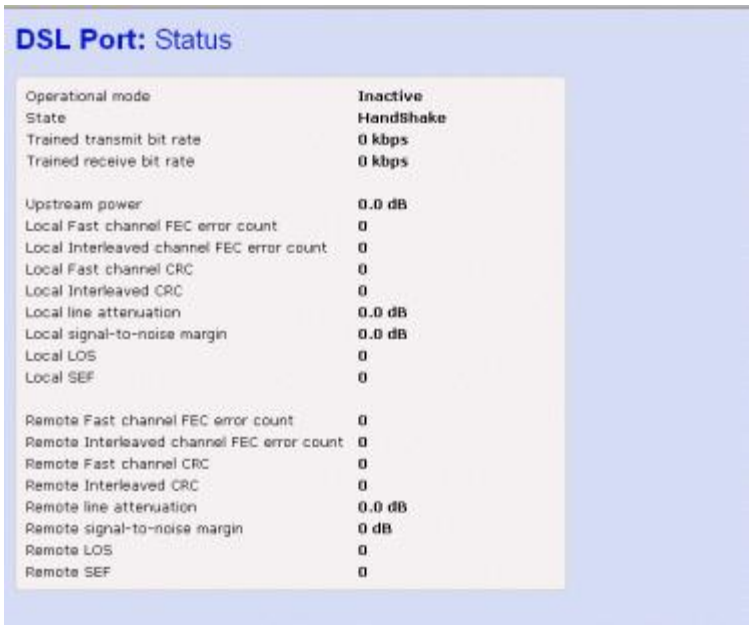
You can use the ADSL Test to identify any problems with your Internet connection. The ADSL Test will run a set of tests on your Internet connection and report back on anything preventing your connection from working.

When should I run an ADSL Test?

Run an ADSL Test if you cannot access the Internet. If you are contacting BT to report a connection problem, it may help to run an ADSL Test so you can give their support staff additional information.



Before running the ADSL Test it is advisable to check the status of the ADSL connection.
Select *DSL status* in the text *'Before running an ADSL test, you may want to monitor how your DSL connection is performing by looking at the DSL status page.'*
The following page is displayed: -



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 Micro 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.

Select "Perform ADSL Test"

The tests are performed and the results are displayed.

Result	**Test**	**Diagnostic**	**Cause**
Passed	User diagnostics complete	-	ADSL connection OK
Failed	Physical connection	WAN port connecting: handshaking	ADSL line disconnected
Aborted	User's ppp connection	Configuration changed during test	Incorrect username or password
Failed	User's ppp connection	ppp connection establish	Incorrect protocol (Type of Access) Incorrect VPI or VCI

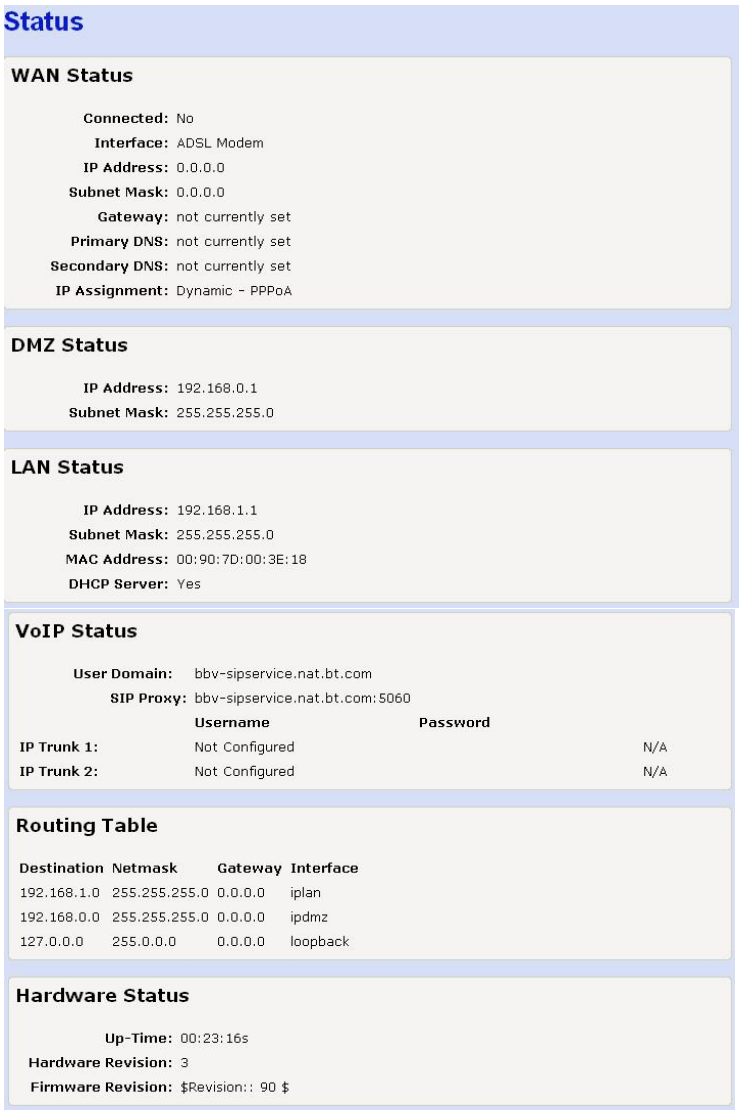
Logging

If your system is having some problems which are not easily diagnosed 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: - 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: -



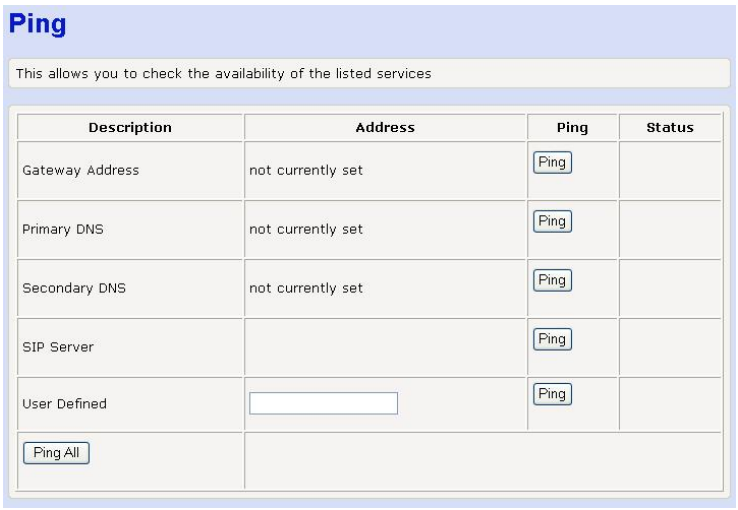
Note

If an IP Trunk is configured but not registered an X will be displayed after the Password. If the trunk is configured and registered a √ is displayed

Event Log

Ping

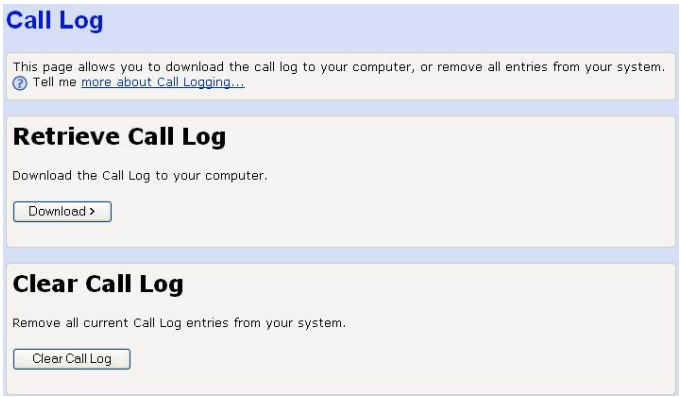
You can Ping to defined or user defined addresses



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: -



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.

The call log can be cleared by selecting *Clear Call Log.*

12 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 BT Micro

About firmware versions

Firmware is a software program. It is stored as read-only memory on your BT Micro. There may be software updates available from time to time. You can check if an update is available by logging onto the e-support web site. This is shown on the left-hand side of the management web pages.

Note

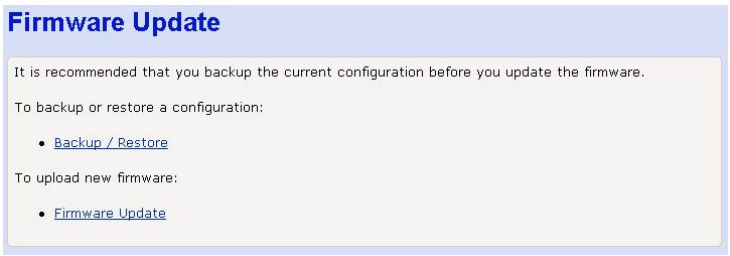
If there is a firmware update available you are strongly advised to install it on your BT Micro to ensure that you take full advantage of any new feature developments.

Firmware update

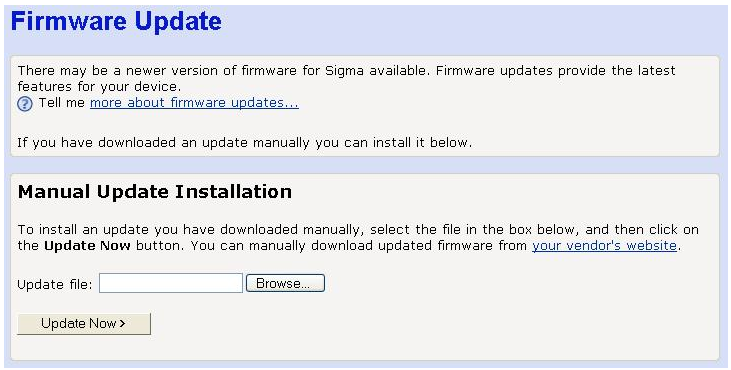
Note

Before proceeding to update the system firmware, you must have downloaded the required firmware file from the e-support web site. Selecting the e-support link on the left-hand side of the Management application accesses this web site. The new firmware version must be saved to the PC before it can be downloaded to the system.

1. Access the BT e-support web site using the e-support link on the left-hand side of the Management Application.
2. Check the latest firmware version available.
3. Check the current firmware version in the BT Micro. Select *Diagnostics* and then select *Status*. The firmware revision is shown under *Hardware status*. If the new revision has a higher revision number it should be uploaded to your PC so that you can download it from there to your BT Micro.
4. From the left-hand menu, click on *Firmware Update*. The following page is displayed:



5. Click *Firmware Update*. The following page is displayed.



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.

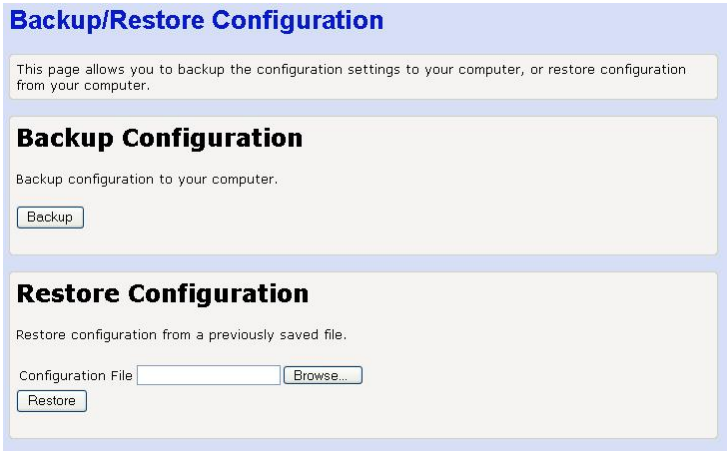
9. The page tells you that the firmware update is currently being downloaded and installed on your BT Micro.

   Once installation is complete, the following page is displayed:

You must restart your BT Micro in order to make the BT Micro aware that a new firmware version has been installed. To do this, click *Restart*.

Backup/Restore Configuration

This page allows you to backup the BT Micro 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.



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: -

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 BT Micro once the file is uploaded.

13 Reset to Defaults

This page allows you to reset your BT Micro to its default factory settings.
The configuration settings of your BT Micro are stored in a configuration file. When you set up your BT Micro and access the web pages for the very first time, the configuration file contains a default factory configuration. This configuration has been set by your provider 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 BT Micro to factory defaults.
You may need to reset to defaults if you have made changes to BT Micro's settings causing it not to function properly.
If you are having problems connecting to your Internet Service Provider, their support staff may request that you reset to defaults to help in the connection process.
Remember that all your previous settings will be replaced.

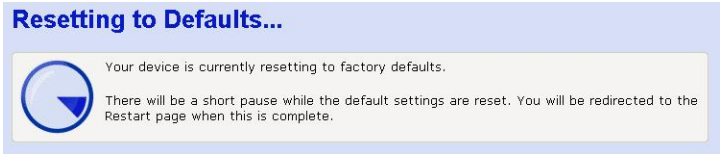
Resetting to Defaults


Note

If you reset your BT Micro to factory defaults, all previous configuration changes that you have made are overwritten by the factory default configuration.

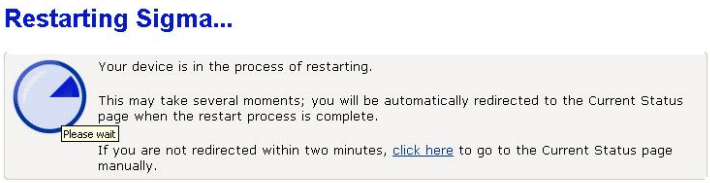
1. From the left-hand menu, click on *Reset to Defaults*. The following page is displayed:

2. This page reminds you that resetting to factory defaults cannot be undone – any changes that you have made to the basic settings will be replaced. If you are happy with this, click in the *Confirm* box to tick it, then click *Reset to Defaults*. The following page is displayed:

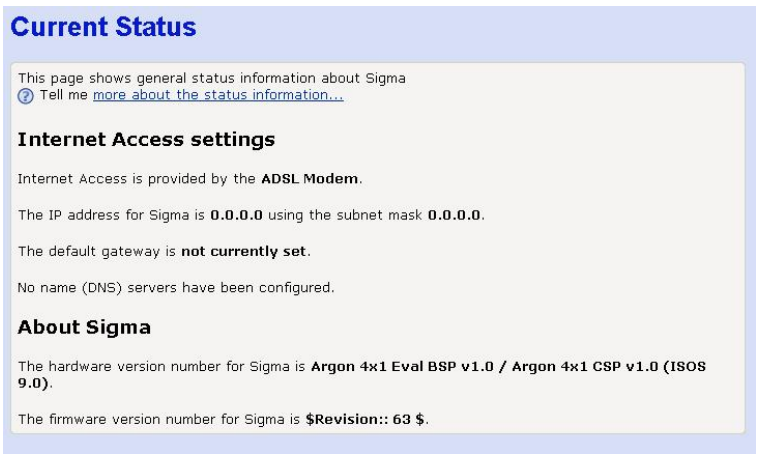


This page confirms that the BT Micro is currently resetting to factory defaults. Once the reset is complete, Restart page is displayed.

3. Click *Restart*. The following page is displayed.



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 page 87, the Enter Current Password login box will be displayed. Once you have entered the default settings (admin, admin) and clicked OK, the Current Status page is displayed.



A. DECT Phone Detailed Instructions

Battery requirements: The handset requires power source of two rechargeable NiMH batteries, size AAA 1.2V 750mAh (HR10/44).

Safety precautions:

- Do not allow the handset to come into contact with liquids or moisture.
- Do not allow the charging contacts or the battery to come into contact with conductive materials.
- There is a slight chance that the telephone can be damaged by an electrical storm. It is recommended that users unplug the phone from the mains supply during a storm.
- Do not use the handset in an explosive hazard area such as where there is gas leaking.
- Because the phone 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 this phone should not be used near intensive care medical equipment or by persons with pacemakers.
- Your phone 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 BT Micro at least one meter from such appliance

WARNING

Use only the mains adapter supplied with this telephone. Incorrect adapter polarity or voltage can seriously damage the telephone. 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 nonrechargeable 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.

Setting up your phone

1. Connect the output plug of the mains adapter to the socket on the back of the charger unit and the mains adapter to the wall mains supply.
2. Place the 2 rechargeable NiMH AAA batteries (included), observing their polarities, into the battery compartment on the handset. Slide the battery door firmly into place.
3. Place the handset on the base unit and let the batteries charge for a full 14 hours before using it for the first time.

Note

The handset may get warm during the initial charge.

Switch on/off your phone

To switch off the power of your phone press and hold during standby.
To switch on the power of your phone press . The battery icon will display in 10 seconds. If the battery level is too low, the handset may not power up.

To set your handset's clock

Your clock resets to 12:00AM or 00:00, depending on time format you are using, each time you replace the batteries or switch off the phone.
To set your clock:

1. Press MENU during standby.
2. Press to select DISPLAY, and then press OK.
3. Press to select CLOCK, and then press OK.
4. Press to change the HOUR, and then press
5. Press to change the MINUTE.

If you set the time format of your clock to 12 hours, go to step 6. If you set it to 24 hours, go to step 7.

6. Press. Press to select AM/PM.
7. Press OK to confirm.

SET THE CLOCK TO 12 HOURS/24 HOURS
To change your phone's time format:
1. Press MENU.
2. Press to select DISPLAY. Press OK.
3. Press to select TIME FORMAT. Press OK.
4. Press to select 12 HOURS or 24 HOURS.
5. Press OK to confirm.

Using your phonebook

You can use your phonebook to manage your contacts. Your phone has a private phonebook and a shared phonebook. The information in your private phonebook is stored in your handset. If you have more than one handset, each handset has its own phonebook.
The information in your shared phonebook is stored in System Speed dial list in the BT Micro. The information is shared by all the handsets cordless and wired. See system speed dial on page 50 on programming the list from a featurephone.
Your phone must have a link with the base unit in order to use the shared phonebook.
Your private phonebook can store 100 records and the system phonebook has 99 records.

To store a name and number in the private phonebook

Press *NAMES.*

Select the private phonebook and press *OK*.

Press to select *ADD ENTRY*, and then press *OK.*

Enter the name for the record. You must enter a name.

Enter the number. In the Private phone book the line access code 9 or 8 must be entered.

Press *SAVE* to confirm the information you have entered.

To store a name and number in the shared phonebook

Press *NAMES.*

Select the shared phonebook and press *OK*.

Press to select *ADD ENTRY*, and then press *OK.*

Enter the name for the record. You must enter a name.

Enter the number. In the Shared phone book enter the external number only. The line Access code must NOT be entered.

Press *SAVE* to confirm the information you have entered.

Note

The shared phonebook is the system speed dial list. Numbers can be entered from a featurephone or the web management interface as well as the DECT phones

Managing your contacts

1. Press *NAMES* and select *PRIVATE*. Press *OK*.
2. Press OK to select *VIEW*
3. Scroll to the contacts you wish to view or search by letter.

To view the details of your contacts press *OPTIONS*. Select DETAILS. Press *OK*. The details of the contact you selected are displayed.

Programming Quick Dial Keys

This feature allows you to dial to the contacts in your private phonebook by pressing and holding a quick dial key that you have assigned. You can assign 9 quick dial keys (keys 1-9).

Assign a quick dial key

1. Press *NAMES*.
2. Select *PRIVATE,* and then press *OK*.
3. Select *QUICK DIAL*. Press *OK*. The first quick dial key is displayed.
4. Scroll to the quick dial key you wish to use. If no number is assigned to the quick dial key, the display shows EMPTY. To assign a number, press *SELECT*, If there is already a number assigned to the quick dial key, the display shows the name and number of the contact.
5. To assign a new number press *OPTIONS*. Select *CHANGE*. Press *OK*. The display shows the list of contacts in your private phonebook.
6. Select the contact.
7. Press *DETAILS*. The display shows the details of the contact that you selected. Press *OK* to confirm.

Delete a quick dial key

1. Press *NAMES*.
2. Select *PRIVATE*, and then press *OK*.
3. Select *QUICK DIAL*, and then press *OK*. The first quick dial key is displayed.
4. Scroll to the quick dial key you wish to delete.
5. Press *OPTIONS*. and select *DELETE*. Press OK.

6. *CONFIRM?* is displayed. Press *OK* to confirm.

Delete a contact from your private phonebook

Press *NAMES*. and select, *PRIVATE* Press *OK.*
Select *VIEW.* Press *OK*.
Scroll to the contact you wish to delete or search by letter. To view the details of your contacts before deleting, go to step 4. If not, go to step 6.
Press *OPTIONS*. Select *DETAILS*. Press *OK*. The details of the contact you selected are displayed.
Press *OPTIONS*.
Select *DELETE*. Press *OK.* CONFIRM? is displayed. Press *OK* to confirm.

Delete all contacts in your private phonebook

Press *NAMES*
Select *PRIVATE* and press *OK*.
Select *DELETE ALL*. Press *OK*. CONFIRM? is displayed. Press *OK* to confirm.

Status of the private phonebook

Your phone keeps track of how much memory you have used and how much is still available in your phonebook.
Press *NAMES*
*S*elect *PRIVATE* and press *OK*
*S*elect STATUS. Press *OK* to view the status. The number of used and free locations are displayed. Press *OK* when finished.

Call a number in your phonebook

1. Press *NAMES.* Select *PRIVATE* and Press *OK.*
2. Select *VIEW*. Press *OK*. Scroll to the contact you wish to call or search by letter.
3. To view the details of the contact before calling, go to step 4. If not, go to step 6.
4. Press *OPTIONS*.
5. Select *DETAILS.* Press *OK*. The details of the contact you selected are displayed.
6. . Press 

Find out who has called you and whom you have called

Your phone keeps a record each time you make, receive or miss a call. You can access a list of the last 20 calls that you have missed and a list of the last 10 calls you have dialled and the last 10 calls you have received. You can keep track of whom you've talked to and for how long.

Check your call records

1. Press the *CALLS* Key
2. Select *MISSED*, *DIALLED* or *RECEIVED*.
3. Press *OK*. A list of call records is displayed. Scroll through the list.
4. Press *OPTIONS*. Select *DETAILS*. Press *OK*.

Transfer the call records to your private phonebook

You can transfer the call records to your private phonebook
1. Press the *CALLS* Key

2. Select *MISSED, DIALLED* or *RECEIVED*. Press *OK*. A list of call records is displayed. Scroll to the entry you want. To view the details of the call records entry, go to step 3. If not, go to step 4.
3. Press *OPTIONS.* Press to select DETAILS. Press *OK*.
4. Press *OPTIONS*. Select *TO PRIVATE* to copy to the private phonebook. Press *OK*.
5. You must enter a name. Add or edit the name using the keypad. Press *CLEAR* to erase a character or digit.
6. Press . Add or edit the number using the keypad. Press *CLEAR* to erase a digit. There must be a number.
7. Press *SAVE.*

View the call timer

1. Press the *CALLS* key.
2. Select *CALL TIMERS*. Press *OK*.
3. Select *LAST CALL, DIALLED, RECEIVED,* or *ALL CALLS.*
4. Press *OK.* The time you spent on the calls is displayed.
5. Press *OK* when finished.

Reset the call timer

1. Press the *CALLS* key
2. Select *CALL TIMERS*. Press *OK*.
3. Select *CLEAR ALL.* CONFIRM? is displayed.
4. Press *OK* to confirm. The call timer is reset and will start counting from 0 seconds.

Call a number in your call records

While you are reviewing the call records, you can make a call or return a call to the person.

1. Press the *CALLS* key.
2. Select *MISSED, DIALLED* or *RECEIVED*.
3. Press *OK*. A list of call records is displayed. Scroll to the entry you want. To view the details of a call records entry, go to step 4. If not, go to step 5.
4. Press OPTIONS. Select *DETAILS*. Press *OK.*
5. Press .

Using your services key

Your handset can store 10 feature codes in the services directory. Each code can have up to 10 characters for the name and 20 digits for the code. See page 59 for the feature codes.

To store a feature code name and number

1. Press the *SER* key.
2. Select *ADD ENTRY.* Press *OK*. Enter the name for the feature. You must enter a name.3 Enter the number for the record. You must enter a number.

Press *SAVE.*

Duplicate name

You cannot enter an identical name for different records in your services directory. If so, DUPLICATE NAME is displayed. Press *OK* to replace the existing record with the new entry or press *CANCEL* to return to the previous display and make changes to the name.

Entering a Recall

Press *Recall* or press *OPTION* and select ENTER R, and press *OK.*
Press *OK* to confirm.

Delete all of the services directory

1. Press the *SER* key.
2. Select *DELETE ALL.* Press *OK*. CONFIRM? is displayed. Press *OK*.

Call a number in your services directory

1. Press the *SER* key
2. Select *VIEW.* Press *OK.* The list of services is displayed.
3. Scroll to the service you wish to call or search by letter. To view the details of the service before calling, go to step 4. If not, go to step 5.
4. Press *OPTIONS. S*elect *DETAILS.* Press *OK*. The details of the service you selected are displayed.
5. Press 

Additional features

Keypad lock

Locking the keypad prevents accidental key presses when you put your phone in the pocket.

1. Press and hold *LOCK* during standby. The keypad is locked. To unlock the keypad:
2. Press *UNLOCK.* UNLOCK? is displayed. Press *OK*. The keypad is unlocked.

Screen saver

The screen saver comes on when your phone is inactive for 30 seconds in standby. The screen saver is a clock that shows the current time of your phone.
During screen saver mode, Press any soft key and the phone will go to standby.

Personalising your phone

Your phone comes with a colour display and a selection of ringing melodies.

Personalise your phone's display

To name your phone:

1. Press *MENU.*
2. Press *OK.*
3. Select *HANDSET NAME.* Press *OK.*
4. Enter or edit the name.
5. Press *OK* to confirm.

Change your wallpaper

Change the wallpaper to give your phone a refresh look with your style.

1. Press *MENU*.
2. Select *DISPLAY*. Press *OK.*
3. Select *WALLPAPER*. Press *OK.*
4. Select the wallpaper. Press *OK* to confirm.

Change the display colour

Change the colour of the menus, highlight, and background of your phone to your colour.

1. Press *MENU.*
2. Select *DISPLAY*. Press *OK*.
3. Select *COLOUR*. Press *OK*.
4. Select the colour. The colour of the menus will change as you select the different colours.
5. Press *OK* to confirm.

Personalise your sounds

You can assign different ringing melodies for each handset at different volume levels.
Your phone also provides key press tones, confirmation tones and Parking tones.
Key tones are tones that your phone makes each time you press a key on the phone.
Confirmation tones are tones that your phone makes when an operation is successful.
Parking tones are sounded when you place your phone on the base unit for charging.

To set your handset's ringing melodies and volume:

1. Press *MENU.*
2. Select *SOUNDS.* Press *OK.*
3. Select *HANDSET*. Press *OK.*
4. Press  to change the volume level. Press 
5. Press  to select the melody.
6. Press **OK** to confirm when finished.

To set your handset's key tones

1. Press *MENU.*
2. Select SOUNDS. Press *OK.*
3. Select *HS KEY TONES.* Press *OK.*
4. Select ON or OFF. Press *OK* to confirm.

To set your handset's confirmation/parking tones

1. Press *MENU.*
2. Select *SOUNDS*. Press *OK.*
3. Select *HS TONES.* Press *OK*.
4. Select *ON* or *OFF*. Press *OK* to confirm.

To set the alarm clock

1. Press *MENU.*
2. Select *EXTRAS*. Press *OK.*
3. Select *ALARM CLOCK.* Press *OK.*
4. Select *ON* or *OFF.*
   To set the alarm clock on, press *OK* and continue to step 5.
   To set the alarm clock off, press *OK* to confirm.
5. Press  to set the hour. Press . 
6. Press  to set the minute. If your phone's time format is set to 12 hours, go to step 7. If it is 24 hours, go to step 8.
7. Press  Press to set AM/PM.

8. Press *OK* to confirm.

When the Alarm Clock rings: -
1. Press *STOP* to turn off and deactivate the alarm clock
2. Press *SNOOZE*. The alarm clock will ring again in 10 minutes.

Timer

The handset will ring after the time you set has elapsed.

1. Press *MENU.*
2. *S*elect *EXTRAS*. Press *OK.*
3. Select *TIMER*. Press *OK.*
4. Press to set the HOUR. Press
5. Press to set the MINUTE. Press .
6. Press to set the SECOND.
7. Press *OK* to confirm. The timer starts counting and your can see the timer on display.

The countdown timer will ring once it finishes counting the time you set.

Press *STOP*. The countdown timer will stop ringing.

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Stopwatch

1. Press *MENU.*
2. Select *EXTRAS*. Press *OK.*
3. Select STOPWATCH. Press *OK*.
4. Press *START.* The stopwatch starts counting.

Press *STOP*. The stopwatch stops. You can choose to reset the stopwatch or cancel the stopwatch.
Press *PAUSE.* The stopwatch pauses counting. Press *RESUME* to start the stopwatch again from the paused time.
Press *CANCEL*. The stopwatch is deactivated.

Using touch & dial

Touch & dial allows you to call a number by pressing any key (except *CANCEL*) on your handset.

1. Press *MENU.*
2. *S*elect *EXTRAS*. Press *OK.*
3. *S*elect *TOUCH & DIAL*. Press *OK.*
4. *S*elect *ON.* Press Enter the phone number.
5. Press *OK* to confirm. Your phone returns to standby.

If activated, *TOUCH & DIAL* is displayed.
To deactivate Touch and Dial

1. Press *CANCEL*. CONFIRM? is displayed.
2. Press *OK* to confirm. Your phone returns to normal mode.

Managing your calls using advanced features

Auto answer

Auto answer gives you the convenience of answering a call by just picking up the phone from the base unit or charger.
You do not need to press any key to answer the call.
To activate or deactivate auto answer:

1. Press *MENU.*
2. *S*elect *ADVANCED.* Press *OK*

3. Select *AUTO ANSWER.* Press *OK.*
4. Select *ON* or *OFF.* Press *OK.*

Icons on your handset's display.


Base/Handset link


Call in progress


Battery Level


Loudspeaker


Alarm Clock


Ringer off


Key lock


Voice Mail Message


Name


Number


Volume level; I block = lowest volume; 3 blocks = highest volume


Internal melody


Mode


Prefix


Volume

B. 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

Definition
mask

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.

Note

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.*

C. Configuring Your BT Micro via the Featurephone

To enter system programming

If your extension is the Programming Extension 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 extension the display will show 'Programming Refused'. Again, the default Programming Extension is extension 20.
From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

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

System Setup Options

Displaying caller numbers and routing calls

The Caller Display Service (CDS) service is available on Analogue lines. If you subscribe to this service, your network sends the telephone number of callers to the BT Micro (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 featurephones.
The CDS information is also shown if the extension is equipped with a standard phone which supports the CDS service.
Your telephone number will also be presented to persons you call, unless you restrict your number from being presented.

How a caller number is displayed at your extension

The caller's number will appear on the display of all featurephones programmed to ring for incoming calls.

If a name is associated with the number in either the system speed dial store or the CDS 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 featurephones the number of the next call in the queue will appear on the displays of the other ringing featurephones.

If your featurephone 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 featurephones is then displayed.

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

If you subscribe to the Caller Number display service from your Network Provider then you can program the system to display the callers number on Analogue.
From the Programming Extension, press the PROGRAMME Key

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 'PSTN Programming' is displayed.

Press the Scroll Down Key (↘) until 'CDS detection' is displayed.

*Select '*CDS detection'.

Select the lines that have the CDS service enabled. The lines you select will have a ♦ displayed beside them.

Press the Hands-Free Key to finish programming.

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

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 an extension number may also be associated with a telephone number. In this case an incoming call from that number will ring at only that extension.

From the Programming Extension, press the PROGRAMME Key

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 'CDS Programming ' is displayed.

Select 'CDS Programming'.

Select an Index Number (01 - 30).

Enter the caller telephone number.

Press 'Confirm'.

Enter the name to be associated with the number. Refer to page 42 for help on how to enter names.

Select the destination you wish to route calls from that number to.

CDS Stores – storing all calls or unanswered calls

To programme the CDS Store to store all calls or unanswered calls only

The system CDS Store can store either all calls or unanswered calls only.
From the Programming Extension, press the PROGRAMME Key

Press the Scroll Down Key (↘) until 'System Programming' is displayed.

Select 'System programming'.

Enter the System Programming Password and select 'System'.

Press the Scroll Down Key (↘) until 'CDS Store' is displayed.

Select 'CDS Store'.

Select 'Store All Calls' or 'Store Unanswered Calls'.

Press the Hands-free Key to finish programming.

To set up extensions with an individual CDS Store

You can programme up to twelve extensions to store five numbers each. Each of these extensions will have a separate record of calls that ring on exchange lines programmed to ring their extensions only.
From the Programming Extension, press the PROGRAMME Key

Press the Scroll Down Key (↘) until 'System Programming' is displayed.

*Select 'S*ystem Programming'*.*

Enter the System Programming Password and select 'Extensions'.

Press the Scroll Down Key (↘) until 'Individual CDS Stores' is displayed.

*Select 'I*ndividual CDS Stores'.

Select the extensions that you wish to have an individual CDS store. The extensions that will have a CDS Store will have a ♦ displayed beside them.

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 (9,8). Internal calls are made by pressing the Recall key and dialling the number when using standard or cordless phones or selecting the number from the internal call menu on a featurephone.
Press the Scroll Down Key (↘) until 'System Programming' is displayed.

Select *'System Programming'.*

Enter the System Programming Password and select '*System*' Select '*Automatic Line selection'* and select '*Automatic Line selection On'.*

Featureline operation

This feature facilitates the use of a BT Featureline on Line 1. When programmed on the additional 9 needed to make external calls on the Featureline is automatically inserted on calls made on Line 1.
Press the Scroll Down Key (↘) until '*System Programming*' is displayed.

Select *'System Programming'.*

Enter the System Programming Password and select '*System*' Select '*FeatureLine operation'* and select '*Featureline on'*.

Paging

To protect featurephones against Announcements and Voice Calls

By default, all featurephones may be paged. You can page-protect each featurephone to prevent it from being paged from either Announcements or Voice Calls.
From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Select 'Page protection'

Select the extensions you wish to protect. A ♦ is displayed beside protected extensions.

Press the Hands-free Key to finish programming.

Outgoing VoIP Calls

In normal operation to make an outgoing call a line access code, 9 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 BT Micro 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.
From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'Lines'
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 line by dialling 9 and on a VoIP line by dialling 9.

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.

In this case choose *'Selected Calls on VoIP'*.
Up to 50 codes each of 5 digits can be entered.
Enter a code (01-50). Enter the digits e.g. 00 for international calls. Press Confirm. The option to fallback to a PSTN line is automatically selected. If this is required press Exit to return to the Index page. 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.
Select *'LCR'*
Select *'LCR On'*
Up to 50 LCR rules may be defined (Index 01-50).
Enter an Index number (01-50)
Enter the input code and press confirm
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).
Enter the Output code (up to 9 digits) and press confirm.
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.
Select *'Preferred'* or *'Exclusive'*.
Select the line or lines the call is to sent on.
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.
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 Timebands

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 through different service providers.
Select Outgoing VoIP Calls
Select LCR

Select LCR Timebands

Select LCR on times

You can enter two 'On' times.

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.

Press the Hands-free Key to finish programming.

To examine Extension Lock Passwords

From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Select 'Examine passwords'

Select 'Ext. lock password'.

Select the extension. The Lock Password is briefly displayed on the top line of the display.

Press the Hands-free Key to finish programming.

Call Waiting Tone Protection

Extensions may present a busy extension with a Call Waiting tone, provided the busy extension is not protected against receiving Call Waiting tones. By default, all extensions are protected against receiving Call Waiting tones. However, you may programme extensions to receive Call Waiting tones.

To programme an extension to receive Call Waiting tones

From the Programming Extension, select the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Press the Scroll Down Key (⇲) until 'Tone protection' is displayed.

Select the extensions you wish to allow receive Call Waiting tones. A ◊ is displayed beside those extensions allowed to receive Call Waiting tones, and a ♦ is displayed beside those extensions protected against receiving Call Waiting tones. (By default, all extensions will have a ♦ displayed).

Press the Hands-free Key to finish programming.

To protect an individual call from Call Waiting tones

If your extension can receive Call Waiting tones, you may protect each call on an individual basis from interruption. When you are on a call, select 'Tone protect' on the display.

From a standard telephone, the code is R725.

Intrude

To Program extensions allowed to intrude

In default no extensions are programmed to activate "Intrude". From the Programming extension, press the PROGRAM key. Press the Scroll Down key (⇲) until "System Programming" is displayed.
Select "System Programming".
Enter the System Programming Password and select "Extensions".

Press the Scroll Down key (⇲) until "Intrude" is displayed.
Select "Intrusion Extensions".
Select the extensions that are to be allowed to intrude. The extensions you select will have a "♦" displayed beside them.
The default is that no extensions are allowed to intrude.

To Program extensions protected from intrusion

From the Programming extension, press the PROGRAM key.
Press the Scroll Down key (⇲) until "System Programming" is displayed.
Select "System Programming".
Enter the System Programming Password and select "Extensions".
Press the Scroll Down key (⇲) until "Intrude" is displayed.
Select "Intrusion Protection".
Select the extensions that are to be protected from intrusion. The extensions you select will have a "♦" displayed beside them.
The default is that no extensions are protected.

To Program Intrusion with or without tone

From the Programming extension, press the PROGRAM key.
Press the Scroll Down key (⇲) until "System Programming" is displayed.
Select "System Programming".
Enter the System Programming Password and select "Extensions".
Press the Scroll Down key (⇲) until "Intrude" is displayed.
Select "Intrude Tone".
Select Intrude tone on or off. The selection is indicated with a "♦".
In default tone is provided when intrusion is activated. This is a single burst, which lasts for about a half a second.

Incoming Call Handling on your BT Micro System

This option is used to select the extensions that are to ring for incoming calls.

Associating lines with extensions for Incoming Ringing

By associating lines with extensions you can have lines ringing different extensions in Day and Night modes.
From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select *'Lines'*

Select 'Incoming Ringing'.

Select Line 1 or an IP Line.

Select 'Day' or Night'.

The extension menu is presented. Select the extensions that are to ring for calls on the line. These extensions are indicated by a solid diamond ♦.

Distinctive Ringing

This feature allows you to have calls ringing with a different ringing signal routed to different extensions than calls ringing with the normal ringing signal. The facility of having a second number on Line 1, which rings with a different signal, must be provided by BT (BT Call Sign™). The recommended use for this facility is to have a separate number for Fax calls and route these calls to an extension equipped with a fax machine.
There are two elements to programme distinctive ringing. The first turns distinctive ringing on for Line 1 and the second determines which extensions are to ring when the second cadence is detected.

To turn distinctive ringing on: -
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 (↘) and select ''PSTN programming'
Select 'Distinctive Ringing'
Select Line1. A solid ♦ indicated Distinctive ringing is on for Line 1.

To select the extensions to ring when the second number is called: -
Press the Scroll Down Key (↘) until 'System programming' is displayed.
Select 'System programming'.
Enter the System Programming Password and select 'Lines'
Select 'Distinctive Ringing'.
Select the Line
Select Day or Night Mode
Select those extensions that are not to ring. In default all extensions are programmed to ring. A solid diamond, ♦, indicates the extensions that will ring.


Note

The programming of extensions to ring for the normal cadence on Line 1 is set under incoming Ringing programming. *See page 172*

Restricting Outgoing Calls

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

To restrict an extension from accessing a particular exchange line

From the Programming Extension, press the PROGRAMME Key

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 'Outgoing restriction' is displayed.

Select 'Outgoing restriction'.

Select the Line.

Select the extensions to be prevented from accessing that line. A ♦ is displayed alongside those extensions that are restricted from accessing the line, and a ◊ is displayed alongside those extensions that have access to the line.

Press the Hands-free Key to finish programming.

To programme exchange lines to be used for incoming calls only

From the Programming Extension, press the PROGRAMME Key

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 'Incoming calls only'.

Select 'Incoming calls only'.

Select the lines that are to be used for incoming calls only. Lines programmed for incoming calls only will be indicated by a ♦.

Press the Hands-free Key to finish programming.

Outgoing Groups

To programme '*Lines into groups for access using the codes 9 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 9 or 8, with Group 1 being associated with 9, etc. Dialling a code selects a Line from the associated Outgoing Group.
From the Programming Extension, press the PROGRAMME Key

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 'Outgoing groups' is displayed.

Select 'Outgoing groups'.

Select the Group you wish to set up. Two Groups can be set up, each with a corresponding access code – 9 or 8.

Select the lines to be in the Group. The lines in the Group are indicated by a ♦.

Press the Hands-free Key to finish programming.
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 extensions which ring on incoming calls, change the Class of Service at each extension, 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'.
From the Programming Extension, press the PROGRAMME Key
Press the Scroll Down Key (⇲) until 'System programming' is displayed.

Select 'System programming'.

Enter the System Programming Password and select 'System'.

Press the Scroll Down Key (⇲) until 'Night Service' is displayed.

Select 'Night Service'.

Select 'Automatic on times'

Select 'On Time 1' to set the first time the 'Night Service' turns on automatically

Select 'On time 2' to set the second time the 'Night Service' turns on automatically.

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 extension 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.
From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'System'.

Press the Scroll Down Key (⇲) until 'Night Service' is displayed.

Select 'Night Service'.

Select 'Weekend service'. A ♦ symbol indicates the service is on and a ◊ symbol indicates it is turned off.

Press the Hands-free Key to finish programming
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

From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'System'.

Select 'Time and date'.

Enter the correct time in 24-hour format, (e.g. 2pm as 1400). The display will prompt for a date.

If you only wish to set the time select *'Confirm'* and the display will revert to the Idle Menu.

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.

Press the Hands-free Key to finish programming.
In the event of a power failure, you will need to reset the time and date.
Changes to the system Time will only take place when any external calls in progress at that time have cleared.
If the Network Provider supplies the Caller Number display service (CDS) 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

From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'System'.

Press the Scroll Down Key (⇲) until 'Music on Hold' is displayed.

Select 'Music on hold'.

Select the option ('Internal Source', 'External Source', 'Tone on Hold' or 'Silence') that you want. The default is 'Internal Source' and the ♦ indicates the current programme setting. Internal callers are always returned 'Tone on Hold'.

Press the Hands-free Key to finish programming.

Hotline

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

To have an extension dial a number automatically, when the handset is lifted

From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Press the Scroll Down Key (⇲) until 'Hot line' is displayed.

Select 'Hot line'.

Select the extension from the Extension Menu.

Enter the number to be dialled. If you wish to dial an external number, enter 9, or another Line access code, before the external telephone number, to select a Line.

Press the Hands-free Key to finish programming.


Note

When a featurephone 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 featurephone, the number is dialled..


Note

A common application for the Hot Line feature is for a fax or modem. The extension can be set to automatically select an exchange Line so the fax or modem does not have to dial 9.

Adding and removing DECT (Cordless) extensions

You can register up to four DECT cordless handsets or remove already registered handsets

To register a DECT handset

From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Select 'Handset Registration'

Select 'Add a Handset'

The system is placed in handset registration mode. The power led flashes red and green.

Select 'REG' on the DECT phone.

Press OK for 'REGISTER'

Enter 1234 as the PIN.

The phone will register to the BT Micro.

To un-register a DECT handset

From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Select 'Handset Registration'

Select 'Remove handset'

The registered handsets are indicated with a ♦. Select the handset to be removed.

Assigning Extension Names

You may assign names to extensions. When an extension receives an internal call, its display will show the calling extension name in the place of the calling extension number.

To assign a name to an extension

From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Select 'Name programming'.

From the Extension Menu, select the extension you want to name and enter the name as described on page 42. Up to ten characters (including spaces) can be entered for each name.

When the name is entered, select *'Confirm'*. You will be presented with the Extension Menu and can continue programming other names.

Press the Hands-free Key to finish programming.

Class of Service

Each extension may be programmed for a Class of Service. This determines the type of call the extension 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 extensions are in Class 1, that is, they have no restriction placed on them.
An extension 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).
An extension 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).
An extension placed in Class 4 is restricted to internal and emergency, (999 and 112), calls only.
An extension 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.
An extension 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. They cannot be barred.
Both Classes 5 and 6 can be associated with the same extension.

Class 5 cannot be associated with Class 4 extensions.

To set up Class of Service access tables

From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'System'.

Press the Scroll Down Key (⇲) until 'Class codes' is displayed.

Select 'Class codes'.

Select the 'Table' to which you want to assign codes. (Table 2, 3, Allowed Table, or Restricted Table).

Select an 'Index number' and enter the code.

When entering a code an additional option is given on the display of your featurephone. 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).
Select *'Confirm'* when the code is entered.

Press the Hands-free Key to finish programming.

To restrict extension outgoing calls during the day

With this feature, you can assign the extensions to a Class of Service that will operate when the system is in 'Day Service'. On power-up, all extensions are in Class 1.
From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Select 'Restriction classes'.

Select 'Day Class of Service'.

Select the Class you want to assign to the extensions, (Class 1 – Class 6).

Select the extensions to be entered in this Class.

Press the Hands-free Key to finish programming.

To restrict extension outgoing calls during the night

With this feature, you can assign the extensions to a Class of Service that will operate when the system is in 'Night Service'. On power-up all extensions are in Class 1.
From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Select 'Restriction classes'.

Select 'Night Class of Service'.

Select the Class you want to assign to the extensions, (Class 1 – Class 6).

Enter the extensions to be entered in this Class.

Press the Hands-free Key to finish programming.

To allow extensions use System Speed Dials overriding call restrictions

You may wish to allow extensions to dial numbers entered in the System Speed Dial list, which they are restricted from dialling directly. For example, these could be numbers that extensions in Classes 2, 3 or 4 cannot dial directly. Entering these numbers into the System Speed Dial list and activating this feature on the extensions allows the restricted extensions to access these numbers.
By default, this feature is not activated on any extension.
From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Press the Scroll Down Key (↘) until 'Sys. Speed no. override' is displayed.

Select 'Sys. speed no. override'

Select the extensions on which you wish to activate the feature. Those extensions allowed to dial System Speed Dial numbers not normally appropriate to their Class of Service are indicated by a ♦.

Press the Hands-free Key to finish programming.


Note

Numbers on an extension's Personal Speed Dial list cannot override the Class of Service restriction of the extension

Using Voicemail

Voicemail

Voicemail common parameters

Up to 8 extensions 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.
Unretrieved messages are deleted in 15 days and retrieved messages are deleted in 8 days.
An extension must be allocated a Voice Mailbox before it can use voicemail. In default, extensions are not allocated a Voice Mailbox.

To allocate a Voice Mailbox to an extension

From the Programming extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Press the Scroll Down Key (↘) until 'Voice boxes' is displayed.

Select 'Voice boxes'

Enter the extensions to be allocated a Voice Mailbox. Those allocated a box will be indicated by a ♦.

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.
Enter the System Programming Password and select 'System'.

Press the Scroll Down Key (↘) until 'Mail box capacity' is displayed.

Select 'VM capacity'

Enter the maximum number of messages to be stored per Mailbox.

Press the Hands-free Key to finish programming.

Voice Mail capacity % used

This feature tells the Administrator when the Voice Module capacity is approaching it's limit. When the voice module storage reached 88% of it's total capacity the system will display on the top line of extension 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. To view this
Enter system programming and select "Extensions".

Scroll through the menu and select the "VM Capacity % Used" option.

Select the "System VM box" to view the % used by the system box.

To view the % used by an extension voice box select "Extensions".

A list of extensions is shown with a solid diamond indicating an extension with a voice box enabled.

Select the required extension to view, the top line of the display will show the % of the extension's voice box that is used.

To turn on your Voice Mailbox

When an extension is allocated a Mailbox 'Divert' on no answer is automatically set to the Voice Box. All calls not answered by the extension are automatically answered by the Mailbox.
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.
Select 'Divert' on the idle menu and choose 'Divert all calls'.

Select 'Divert to VM' or enter 710 as the extension number

If 'Divert on no answer' is activated to 710, calls unanswered after four rings will be answered by the Voice Mailbox.

If 'Divert on busy' is activated to 710 calls you cannot receive will be answered by the Voice Mailbox.

To check all Voicemail Passwords

All extension Voicemail Passwords can be examined from the Programming Extension.
From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Select 'Examine passwords'.

Select 'Voicemail password'.

Select the extension whose password you wish to examine. The Voicemail Password of that extension is briefly displayed on the top line of the display.

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 IP 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 extension 20 from the systemphone display. Each extension can dial the code 737 to turn the answering machine on and off. Extension 20 can also customise the greeting. You can turn the Answering Machine service on and off at any time at extension 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.

WARNING

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

At extension 20, press the Scroll Down Key (↘) until Answering Machine' is displayed.

Select 'Answering Machine''

The top line of the display will display the 'Answering Machine' prompt. To turn the answering machine off press 'Answering Machine' again.

You can also turn the answering machine on and off by dialling the code 737.

To programme 'Lines to be answered by the Answering machine

From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select *'Lines'*.

Press the Scroll Down Key (↘) until 'Answering Machine' is displayed.

Select 'Answering Machine'

Select the lines to be answered by the Answering machine. The lines that will be answered are indicated by a ♦.

Press the Hands-free Key to finish programming.
On Power Up the answering machine is associated with all lines.

To set the time a call will ring before the Answering Machine answers

From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'System'.

Press the Scroll Down Key (↘) until 'Timers' is displayed.

Select 'Timers'.

Select 'Answering Machine Delay '

Enter the time. The default is 010 seconds.

Press the Hands-free Key to finish programming.

Programming Additional System Options

Doorstrike

To set up a Door Intercom on your System

From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'System'.

Select 'Door Intercom'.

Select 'Door Intercom equipped'.

Press the Hands-free Key to finish programming.

To programme which extensions can operate the Doorstrike

From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Press the Scroll Down Key (↘) until 'Open door restriction' is displayed.

Select 'Open door restriction'.

Select which extensions are restricted from opening the door. The extensions 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 extension are diverted externally if you have set an external divert. It also allows extensions to be prohibited from activating an external diversion.
From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Press the Scroll Down Key (↘) until 'External Diversion' is displayed.

Select 'External diversion'.

Select 'No trunk to trunk calls'.

Select the extensions that are not allowed to activate an external diversion or set up trunk to trunk calls.

If both internal and external calls are to be diverted select 'All calls'.
If external calls only are to be diverted select 'External calls only'

Miscellaneous system configuration options

To change the Programming Extension

System programming can only be carried out at one featurephone, that is, the featurephone connected to the Programming Extension. By default, extension 20 is the Programming Extension. The Programming Extension can be changed to any other extension if required.
From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'System'.

Select 'Programming position'.

Select the extension you wish to have as the Programming Extension. The selected Programming Extension is denoted by a ♦.

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.

From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'System'.

Select 'Change password'.

Select 'Change' and enter the 4-digit number you require.

Select 'Confirm'.

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 unequipping the line interface in system programming, as follows:
From the Programming Extension, press the PROGRAMME Key

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 'Equipped lines'.

Select the lines you wish to equip or unequip. Equipped lines are denoted by a ♦. Unequipped lines are denoted by a ◊.

Press the Hands-free Key to finish programming.

To configure disconnected extensions

The system assumes that all available extension interfaces have telephones connected to them. If an extension interface does not have a telephone connected, ensure correct system operation by disconnecting the extension interface in system programming, as follows
From the Programming extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Press the Scroll Down Key (↘) until 'Extension disconnect' is displayed.

Select 'Extension disconnect'.

Select the extensions you wish to connect or disconnect. Disconnected extensions are denoted by a ♦.

Press the Hands-free Key to finish programming.

Note

When a featurephone is connected to an extension interface that is programmed as disconnected, the featurephone display may appear as if the featurephone is connected. However, when the handset is lifted a busy tone is heard and no options will be displayed.

To examine system passwords

From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Press the Scroll Down Key (↘) until 'Examine passwords' is displayed.

Select 'Examine passwords'.

Select either 'Extension lock password', or 'Voicemail password', or 'System VM box'.

1. If you selected 'Extension lock password', the extension menu will appear. Select an extension and its Extension Lock Password will appear on the display.
2. If you selected 'Voicemail password', the extension menu will appear. Select an extension and its Voicemail Password will appear on the display.
3. If you selected 'Answering machine', the Answering machine Password appears on the display.

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 featurephones. The default setting is that the light flashes.
From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'System'.

Press the Scroll Down Key (↘) until 'Line key light' is displayed.

Select 'Line key light'

Choose either 'Light flashing on hold' or 'Light steady on hold'.

Press the Hands-free Key to finish programming.

To prohibit trunk-to-trunk calls on an extension

You may prohibit individual extensions from activating External Divert, External Transfer and External Conference. (These features set up so-called trunk-to-trunk calls).
From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Press the Scroll Down Key (↘) until 'External Diversion' is displayed and select.

Select 'No trunk-to-trunk calls'.

Select the extensions to be denied this feature. Those extensions denied the feature are indicated by a ♦.

Press the Hands-free Key to finish programming.

To Change ringing from 25 to 50 Hz

This option allows the ringing frequency to be changed from the default 25Hz to 50 Hz on individual extensions.
From the Programming Extension, press the PROGRAMME Key

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Press the Scroll Down Key (⇲) until '25/50 Hz ringing' is displayed.

Select '25/50 Hz ringing'.

Select the extensions to ring at 50 Hz

The default is that all extensions are set for 25 Hz ringing.

Inverting ringing cadences

The external and Internal ringing cadences can be interchanged on an extension by extension basis.
From the Programming Extension, press the PROGRAMME Key

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Press the Scroll Down Key (⇲) until 'Reverse Cadence ' is displayed.

Select 'Reverse Cadence'.

Select the extensions that require the cadences changed

Keypad Feedback

When off hook on an extension fitted with a featurephone, a confirmation tone is played when a digit is pressed. This is so that the user knows that a digit was dialled.
From the Programming Extension, press the PROGRAMME Key

Select 'System programming'.

Enter the System Programming Password and select 'Extensions'.

Press the Scroll Down Key (⇲) until 'Keypad Feedback' is displayed.

Select 'Keypad Feedback'.

Select the extensions 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.
From the Programming Extension, press the PROGRAMME Key

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 'PSTN Programming' is displayed.

Select 'PSTN' programming'.

Select the desired option as detailed in the table below. The options are either explained in the following pages or in the referenced pages

Press the Hands-free Key to finish programming.

PSTN Programming Option	Default setting	Alternate setting
CDS Detection	CDS not set	CDS set
Dialtone detection	On	Off
Distinctive Ringing	Distinctive Ringing not set	Distinctive ringing set

Programming CDS Detection

If the CDS service is provided on your standard analogue line the system must be programmed to detect the CDS information. The default is that the system does not detect the CDS information.
From the Programming Extension, press the PROGRAMME Key

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 'PSTN programming' is displayed.

Select 'PSTN programming'.

Press the Scroll Down Key (⇲) until 'CDS Detection' is displayed.

Select 'CDS Detection' The lines with 'CDS 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".
From the Programming Extension, press the PROGRAMME Key

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 'PSTN programming' is displayed.

Select 'PSTN programming'.

Press the Scroll Down Key (⇲) until ' Dialtone detection' is displayed.

Select ' Dialtone detect' The lines with ' Dialtone 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.

From the Programming Extension, press the PROGRAM Key

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

Select 'System programming'.

Enter the System Programming Password and select 'System'.

Press the Scroll Down Key (↘) until 'Button Hopping' is displayed.

Select Button hopping On or Off as required.

Distinctive Ringing

This sets Distinctive Ringing on for Line 1. See page 173 for a full description of the feature.

To set system timers

You can set various timers from the Programming Extension to suit your requirements.
From the Programming Extension, press the PROGRAMME Key

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

Select 'System programming'.

Enter the System Programming Password and select 'System'.

Press the Scroll Down Key (↘) until 'Timers' is displayed.

Select 'Timers'

Select the required timer to be changed and enter the duration. (See table below).

Confirm the new time.

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
Divert on no answer	01 – 30	11 seconds
Open the door	01 – 30	5 seconds
Door Intercom ring duration	01 – 30	30 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 extension 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 extension that attempted the transfer.

Divert on no answer

This is the time that elapses before a call ringing at an extension, with 'Divert On No Answer' set, is diverted.

Open the door

This is the time that the Doorstrike relay will remain open following activation.

Door Intercom ring duration

This is the time that extensions will ring when the Door Intercom is pressed.

Call Park

This is the time that elapses before a call placed on 'Call Park' rings back the parked call extension

Ringback time duration

This is the time an extension 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.
From the Programming extension, press the PROGRAMME Key
Press the Scroll Down Key (↘) until 'System programming' is displayed.
Select 'System programming'.
Enter the System Programming Password and select 'System'.
Press the Scroll Down Key (↘) until 'Reset options' is displayed.
Select 'Reset!' or 'Reset to default!'

WARNING

These are complete system resets, not individual extension 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.

D. Glossary

802.11 A family of specifications for wireless LANs developed by a working group of the IEEE. This in an Ethernet protocol, often called Wi-Fi.

10BASE-T 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 *data rate, Ethernet*.

100BASE-T 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 *data rate, Ethernet*.

ADSL 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.

analog An analog 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 analog signal. See *digital*.

ATM 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 *data rate*.

authenticate To verify a user's identity, such as by prompting for a password.

binary 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 *bit, IP address, network mask*. **DHCP** 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.

DHCP relay 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 *DHCP*.

DHCP server 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 *DHCP*.

digital 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 *analog*.

DNS Domain Name System
The DNS maps domain names into IP addresses. DNS information is distributed hierarchically throughout the Internet among computers called DNS servers. For example, *www.yahoo.com* 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 *domain name.*

domain name A domain name is a user-friendly name used in place of its associated IP address. Domain names must be unique; their assignment is controlled by the Internet Corporation for Assigned Names and Numbers (ICANN). Domain names are a key element of URLs, which identify a specific file at a web site. See *DNS.*

download To transfer data in the downstream direction, i.e., from the Internet to the user.

DSL Digital Subscriber Line
A technology that allows both digital data and analog voice signals to travel over existing copper telephone lines.

encryption keys See *network keys*

Ethernet The most commonly installed computer network technology, usually using twisted pair wiring. Ethernet data rates are 10 Mbps and 100 Mbps. *See also 10BASE-T, 100BASE-T, twisted pair*.

FTP File Transfer Protocol
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.

Gbps Abbreviation of Gigabits per second, or one billion bits per second. Internet data rates are often expressed in Gbps.

host A system (usually a computer) connected to a network.

HTTP Hyper-Text Transfer Protocol
HTTP is the main protocol used to transfer data from web sites so that it can be displayed by web browsers. See *web browser, web site*.

Hub 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.

ICMP Internet Control Message Protocol
An Internet protocol used to report errors and other network-related information. The ping command makes use of ICMP.

IEEE 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.

Internet The global collection of interconnected networks used for both private and business communications.

intranet A private, company-internal network that looks like part of the Internet (users access information using web browsers), but is accessible only by employees.

IP *See TCP/IP*.

IP address Internet Protocol address
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 *network ID*

	that identifies the particular network the host belongs to, and a *host ID* 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 *domain name, network mask*.
ISP	Internet Service Provider A company that provides Internet access to its customers, usually for a fee.
LAN	Local Area Network A network limited to a small geographic area, such as a home or small office.
LED	Light Emitting Diode An electronic light-emitting device. The indicator lights on the front of the system are LEDs.
MAC address	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; *NN:NN:NN:NN:NN:NN*.
mask	*See network mask*.
Mbps	Abbreviation for Megabits per second, or one million bits per second. Network data rates are often expressed in Mbps.
NAT	Network Address Translation A service performed by many routers that translates your network's publicly known IP address into a *private* 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.
network	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 *LAN*, or very large, such as the *Internet*.
network keys	(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 BT Micro can send/receive encrypted data.
network mask	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 *binary, IP address, subnet*.
NIC	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 *Ethernet, RJ-45*.
packet	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).
pass phrase	A secret password used in *WPA* 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 BT Micro. 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).
ping	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.
port	A physical access point to a device such as a computer or router, through which data flows into and out of the device.
PPP	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 BT Micro uses two forms of PPP called PPPoA and PPPoE. See *PPPoA, PPPoE*.
PPPoA	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.
PPPoE	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.
protocol	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.
remote	In a physically separate location. For example, an employee away on travel who logs in to the company's intranet is a remote user.
RIP	Routing Information Protocol The original TCP/IP routing protocol. There are two versions of RIP: version I and version II.
RJ-11	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.
RJ-45	Registered Jack Standard-45 The 8-pin plug used in transmitting data over phone lines. Ethernet cabling usually uses this type of connector.
routing	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.
SDNS	Secondary Domain Name System (server) A DNS server that can be used if the primary DSN server is not available. *See DNS*.
SSID	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.
subnet	A subnet is a portion of a network. The subnet is distinguished from the larger network by a *subnet mask* 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 *network mask*.
subnet mask	A mask that defines a subnet. See *network mask*.
TCP	See *TCP/IP*.

TCP/IP 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.

Telnet 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.

TFTP 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.

TKIP 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.

triggers 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 BT Micro 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.

twisted pair 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 *10BASE-T, 100BASE-T, Ethernet*.

unnumbered interfaces
An unnumbered interface is an IP interface that does not have a local subnet associated with it. Instead, it uses a *router-id* 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 BT Micro 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.

upstream The direction of data transmission from the user to the Internet.

USB Universal Serial Bus
A serial interface that lets you connect units such as printers, scanners, etc. to your computer by simply plugging them in.

VC	Virtual Circuit A connection from your DSL router to your ISP.
VCI	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 *VC*.
VPI	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 *VC*.
WAN	Wide Area Network Any network spread over a large geographical area, such as a country or continent. With respect to the BT Micro, WAN refers to the Internet.
Web browser	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 *HTTP, web site, WWW*.
Web page	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 *home page*. See *hyperlink, web site*.
Web site	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 *hyperlink, web page*.
WEP	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 *network key*. Each PC on your wireless network must be manually configured with the same key as your BT Micro 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.
Wireless	Wireless is a term used to describe telecommunications in which electromagnetic waves (rather than some form of wire) carry the signal over part or all of the communication path. *See wireless LAN*.
Wireless LAN	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.
WPA	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 BT Micro. It provides improved data encryption and stronger user authentication. The mode of WPA supported on your BT Micro

	is called Pre-Shared Key (PSK), which allows you to manually enter a type of key called a *pass phrase*.
WWW	World Wide Web Also called *(the) Web.* Collective term for all web sites anywhere in the world that can be accessed via the Internet.

E. Configuring your PCs

This appendix provides instructions for configuring the Internet settings on your computers to work with BT Micro.

Configuring Ethernet PCs

To configure your PC to automatically obtain an IP address

By default, BT Micro 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 BT Micro to do so. See 81 for instructions.

If you have connected your LAN PCs via Ethernet to the BT Micro, follow the instructions that correspond to the operating system installed on your PC:
Windows® XP PCs on page 198.
Windows 2000 PCs on page 198.
Windows Me PCs on page 199.
Windows 95, 98 PCs on page 200.
Windows NT 4.0 workstations on page 201.
If you want to allow Wireless PCs to access your BT Micro, see section on *Wireless Setup / Security* on page 123.

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:

4. In the Windows task bar, click the *Start* button, point to *Settings*, and then click *Control Panel*.
5. Double-click the Network and Dial-up Connections icon.
6. 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.

7. If Internet Protocol (TCP/IP) does not display as an installed component, click *Install…*
8. In the *Select Network Component* Type dialog box, select *Protocol*, and then click *Add…*
9. 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.
10. If prompted, click *OK* to restart your computer with the new settings.

    Next, configure the PCs to accept IP information assigned by BT Micro:
11. In the *Control Panel*, double-click the Network and Dial-up Connections icon.
12. In the *Network and Dial-up Connections* window, right-click the Local Area Connection icon, and then select *Properties*.
13. In the Local Area Connection Properties dialog box, select *Internet Protocol (TCP/IP),* and then click *Properties*.
14. 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*.
15. 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 BT Micro:

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 BT Micro:

16. Open the Control Panel window, and then click the Network icon.
17. 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.
18. In the TCP/IP Properties dialog box, click the IP Address tab.
19. Click the radio button labelled *Obtain an IP address automatically*.
20. Click the DNS Configuration tab, and then click the radio button labelled *Enable DNS.*
21. Click *OK* twice to confirm and save your changes.

    You will be prompted to restart Windows.
22. 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 BT Micro:
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*.
23. In the *Microsoft TCP/IP Properties* dialog box, click the radio button labelled *Obtain an IP address from a DHCP server.*
24. 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 BT Micro 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 BT Micro.

By default, the LAN port is assigned the IP address 192.168.1.1. (You can change this number or another number can be assigned by your ISP.)
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.

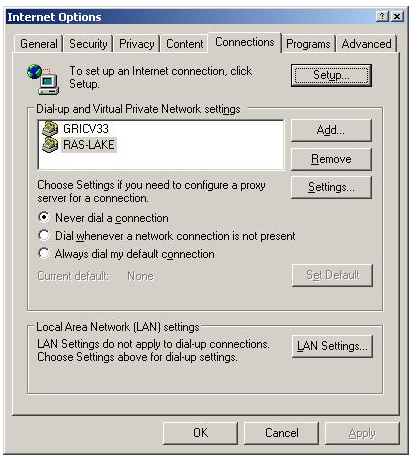
Note

Your PCs must have IP addresses that place them in the same subnet as the LAN port.

Setting up your browser

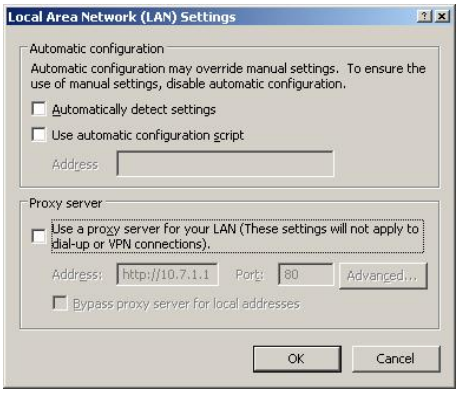
1. Launch Internet Explorer.
2. Select *Tools*, *Internet Options.*

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*

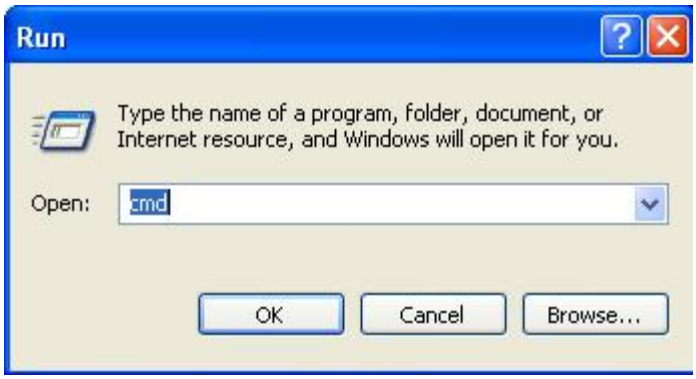


5. Under Proxy Server, ensure that *Use a proxy server for your LAN* is unchecked.

Locating the MAC Address on a PC

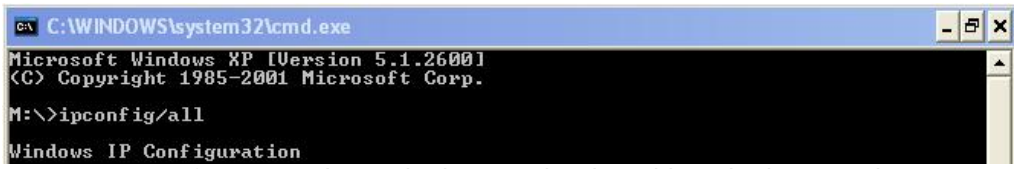
To locate the MAC address on a PC.

Click *start*
Select *Run*

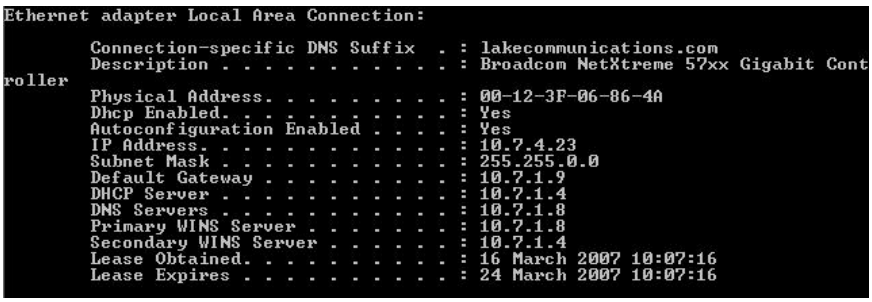


Enter *cmd* and click on OK

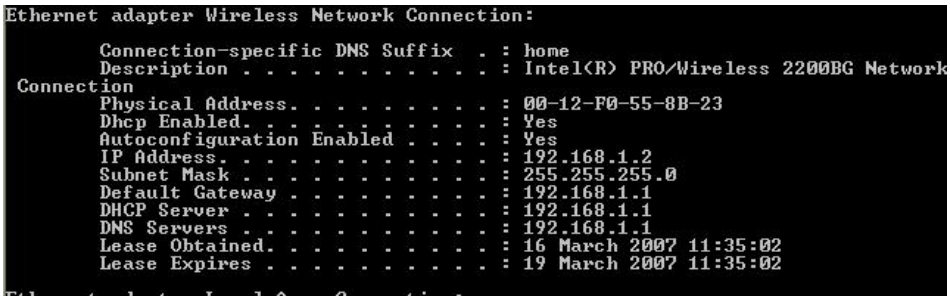
At the prompt type *ipconfig/all*



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



F. Troubleshooting

This appendix takes you through a step-by-step procedure to help you resolve problems that you may encounter when installing or using BT Micro.

Cannot browse the Internet

(1) Check the LEDs on the BT Micro front panel		
(a) *Is the Power LED on?*	***Yes***	*Go to* ***(b)***
	No	Verify that you are using the power cable provided and that it is securely connected to BT Micro and a wall socket/power strip.
(b) *For a wired PC* *Is the Ethernet LED on?*	***Yes***	*Go to* ***(d)***
	No	Verify that your PC is connected to LAN port 1, 2, 3 or 4 on the BT Micro using a Cat 5 patch cord or cable.
(c) *For a Wireless PC* *Is the Wireless LED Green?*	***Yes***	*Go to* ***(d)***
	No	Go to **(4) Check your WLAN settings**
(d) *Is the DSL LED on steady?*	***Yes***	Go to **(e)**
	No	The LED is flashing Verify that the ADSL port on the BT Micro is connected to the *computer* port on the splitter, and that the *line* port on the splitter is connected to the telephone line. If the above connections are correct, report the problem to your ADSL service provider.
(e) *Is the Internet LED Green?*	***Yes***	Go to **(3) Check your PC settings**
	No	The LED is Red. Go to ***(2) Check your ADSL settings***.

(2) Check your ADSL settings

(a) Enter the BT Micro 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 BT Micro front panel Green?*	***Yes***	Go to **(c)**
	No	The LED is Red Contact your ADSL service provider 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 BT Micro 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 BT Micro 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 BT Micro

(h) Is the Wireless LED on the Micro 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.

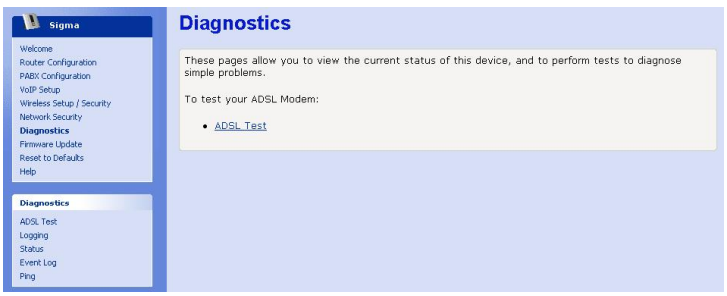
- Click *start*
- Click *Control Panel*
- Double click *Network Connections* icon
- Double click *Wireless Network Connection*
- Under *General* tab
  click *Properties*
- Select *Wireless Network* tab
  highlight the network name noted in **(4c)**
  click *Properties*
- Under *Association* tab
  set 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 BT Micro.

ADSL Test

The ADSL Test is used to identify problems with your Internet connection.



When should I run an ADSL Test?

If you contact your Internet Service Provider to report a connection problem, they may ask you to run an ADSL Test so that you can give their support staff additional information.

Running the ADSL Test

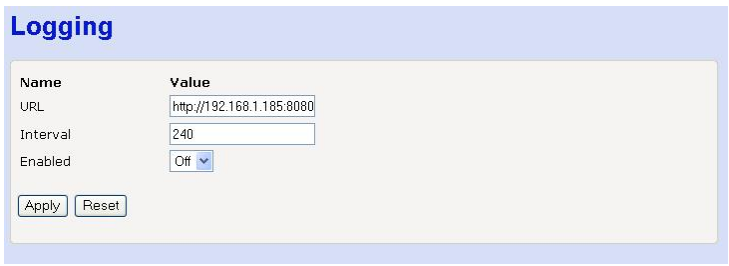
From the left-hand menu, click on *ADSL Test*. The following page is displayed:

Click on Perform ADSL Test>

The ADSL Test may take up to three minutes to complete. Once the ADSL Test has finished running the test results are displayed.

Logging

You may be requested by BT technical support to enable logging to allow them to remotely troubleshoot your BT Micro. Logging is normally disabled.



To enable logging, select the drop down menu for *Enabled* and select *On*.

Status

The Status screen shows the current status of the following elements of your BT Micro.

WAN Status
DMZ Status
LAN Status
VoIP Status
Routing Table

Hardware Status

Ping

This allows you to test communications with network devices. When the Ping button associated with the network device is clicked, a message is sent to the device, and if it is functioning

correctly, it will send back a reply. The result of the test is displayed in the Status field.

- If the test is successful, ✓ is displayed.
- If the test is unsuccessful, × is displayed.

Troubleshooting your DECT Phone

Problem(s)	Possible Causes	Solutions
No dialling tone when pressing  .	You are too far from the base unit. - Battery is low (low battery icon is displayed).	Move closer to the base unit. Charge the battery.
 icon is flashing.	- The handset is not registered. If the handset is unregistered, it displays UNREGISTERED. - The handset is out of range.	- Register the handset. See page - Move closer to the base unit.
When the handset is placed on the charger, no beep is heard.	- The handset is not placed properly on the base unit or charger. - The charging contacts are dirty. - The handset tone is turned off. - The handset's power is turned off before placing it on the charger.	- Take the handset off the base unit and put it back again. - Clean the charging contacts with a clean and dry cloth. - Turn on the handset tone from the Sounds Menu.
Battery icon remains empty although the handset has charged for 24 hours.	- Handset battery is defective. - Handset is not placed properly on the base unit or charger.	- Please contact BT to purchase a new rechargeable battery. - Check to make sure the battery icon is scrolling.
No symbol on the display.	- Battery is uncharged.	- Charge battery.
Bad audio quality (crackles, echo, etc.)	- Interference from nearby electrical appliance. - BT Micro unit is installed in a room with thick walls. - The handset is too far from the base unit.	- Try plugging the base unit to a different location. - Install the base unit in a different room. - Move closer to the base unit.
The phone does not ring when a call comes in.	- The ringer is turned off. - The phone is not programmed to ring	- Turn on the ringer. - Programme the phone to ring for Incoming Calls. See Page 97 or 172.

Troubleshooting the PABX

No incoming calls
Check that all phones programmed to ring are not programmed for DND or divert.

Extension outgoing locked
If you cannot get outgoing access on a 2-wire telephone, move a featurephone to the extension. If it shows EXTN LOCK, the extension has been locked and you will need the unlock code to unlock it. See page 171.

No extension dial tone
Check that the extension has not been disconnected through programming see page 185.

Not seizing a line for outgoing calls
Check if the line is equipped in programming see page 108 or 185
Check that the key is programmed for line access see page 44

Door intercom not operating
Check the Door Intercom is connected to extension 23.Check the programming for the door intercom see page99 or 183.

Phone reset
Remember the simple phone reset code 739, which can be dialled from any extension 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 BT Micro, you can choose to have all incoming callers telephone numbers added to a 'CDS Store' or just the unanswered calls. These can be viewed on the BT Micro featurephone.
In default the system is set to only store unanswered calls.
This can be changed in System Programming see page 167.

Power Fail problems
If there is no electrical mains power connected to your BT Micro 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 BT Micro. There will be no internal service, no Broadband connection, Wireless LAN access or Cordless telephone (DECT) service until the power is restored.

Caller Display – CDS is not working
For Caller Display service to work on standard exchange lines (PSTN lines) it has to be enabled in both the telephone exchange and on the BT Micro system. If the service is provided on the exchange line then to activate it on the BT Micro 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 Featurephone speaker.
There is an option on the BT Micro system to play the music you provide for music on hold through the featurephone speakers when the featurephone 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 featurephone speakers may make a low level noise. To stop this, program the feature off. Do this by selecting the Program key on the featurephone, scroll down and select 'Background music' and select the 'OFF' option.

Extension 20 keeps ringing .

Extension 20 can be called by dialling '0' from any other extension. 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 extension 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 extension 20 will show which extension is calling.

Featurephone not working in another extension

If the BT Micro system wiring has been extended a featurephone can only be connected to any of the other hard wired extensions if the correct wires have been extended through to the telephone socket. The featurephone requires more wires to work than an ordinary telephone. See page 16 for wiring instructions.

Featurephone 'Handsfree' does not appear to work

The featurephone 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 featurephone and this is to be used instead of the handset

Product support

Product support is available on line. You must register for support by going to: -
https://productsupport.bt.com/micro/registration

If you have already registered for support please go to
www.productsupport.bt.com

A BT Micro product support helpline is available from 9 AM to 5 PM Mon – Fri. on **0905 8 200 102**
Calls are charged at £0.65 per minute. Charges from mobiles and other networks may vary.

Callers must be 18 or over and be authorised to access premium rate services