

Belgacom Forum™ 3000 System Manual



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Section 1. Introduction

1.1 Overview of the Forum 3000

The Forum 3000 is a next generation IP voice switch for the home or small office. It connects four analogue telephones and up to 16 IP system phones to the public VoIP or PSTN networks.

Users make or receive calls via a SIP server in the public network, or via the PSTN network using a simple analogue phone or a Forum iPhone 3020 or a Forum iPhone 3010

The Forum iPhone 3020 is an advanced multi function system phone with 16 programmable keys, 6 fixed keys, loudspeaker and a blue backlit 4 line display. The Forum iPhone 3010 is an advanced multi function system phone with 6 fixed keys, loudspeaker and a blue backlit 4 line display. Up to sixteen of these phones may be connected locally to the Forum 3000 or remotely over broadband Internet. Remote IP phones have full system functionality. The phones have a two-port ethernet hub, which allows a single cable to the desktop for both the phone and the PC.

The Forum 3000 has a full range of pbx features including voicemail, automated attendant, least cost routing, speed dials, address books and call lists. Features such as advanced Multi-Layer Auto-Attendant, networking of multiple systems on different sites require the installation of a license. Licenses can also be installed to expand the number of users the system, the number of trunks or the number of voicemail boxes.

1.2 Front Panel Indicators:

There are six leds on the unit. Starting from the top of the unit, the functions of these are as follows:



Flashing red led on indicates the Forum 3000 is receiving DC power from the Plugtop power supply.

LAN

Solid red led indicates an ethernet connection on one of the ethernet ports

L1

Indicates the status of VoIP trunk line 1. Solid red led indicates the line is occupied.

L2

Indicates the status of VoIP trunk line 2. Solid red led indicates the line is occupied.

L1 and L1 Slow heartbeat – Indicates communication is established from the Forum 3000 to the SIP server in the belgacom VoIP network.

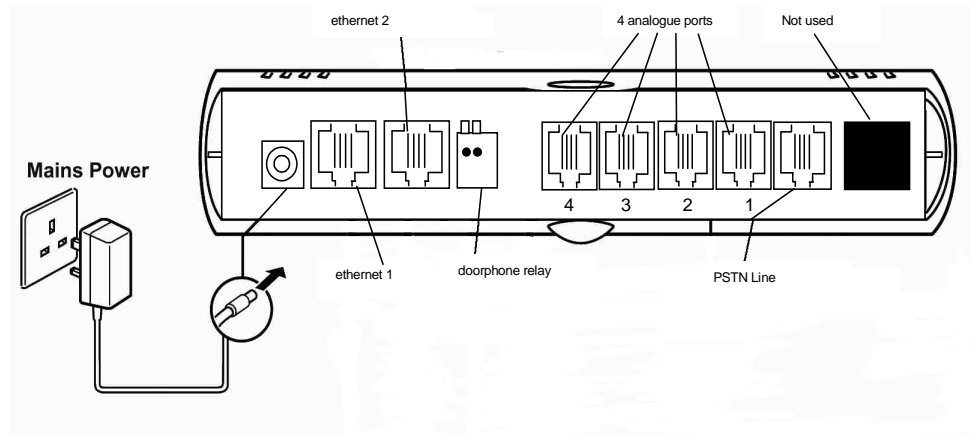
FXO

Indicates the status of the analogue trunk line. Solid red indicates the line is busy.



Warning Symbol. Contact Belgacom Technical Support.

1.3 Back Panel Connectors



Power Port: For connecting the power adaptor.

2 Ethernet Ports: For connecting the unit to a router or LAN.

Doorphone relay: For connecting doorphone relay

Analogue Ports 1-4: for connecting the analogue users

PSTN Line: For connecting the unit to the PSTN trunk line of the public network

Section 2. System installation

2.1 Location

Find a location that is:

- ◆ Easily accessible
- ◆ Isolated from plumbing or electrical wiring
- ◆ Within 2 meters of the nearest power point
- ◆ Not exposed to extremes of temperature, humidity, dust or to chemicals or direct sunlight
- ◆ Sufficiently spacious and well-lit to allow you to wire the system

2.2 Equipment

Equipment required for system installation:

- ◆ Two no. 8 screws and rawl plugs
- ◆ Mounting template (see carton)
- ◆ Drill and chuck-key
- ◆ Drill bit and flathead screwdriver
- ◆ CAT-5 cable to connect to router or LAN.
- ◆ RJ45 cable to connect to the PSTN trunk line to the public network.

2.3 Wall Mounting the Forum 3000

1. Position the **Forum 3000** template on the wall and mark the positions of the two retaining screws.
2. Drill holes for retaining screws and insert rawl plugs, now insert a screw in position 1. Hang unit on wall.
3. Secure the **Forum 3000** by inserting the remaining screw in positions 2. It should be firm against the wall but do not over-tighten the screws.

The system is now ready for wiring.

2.4 System Wiring

Analogue Users 1 – 4

Plug the analogue telephones directly into the RJ11 analogue user ports at the back of the **Forum 3000**.

Connecting the Ethernet Port.

Connect one of the ethernet ports of the Forum 3000 to the LAN connection point using a CAT-5 ethernet cable. The Ethernet port is compatible with any 10/100BaseT ethernet switch.

Connecting the PSTN line

Connect the PSTN port of the Forum 3000 to the PSTN line using an RJ45 line cable.

Powering Up

Connect the supplied adaptor to the Power socket at the back of the **Forum 3000**.

Prior to connecting the adaptor to the mains, ensure that:

- ♦ All wiring is properly connected.
- ♦ The CAT-5 cord has been plugged into the LAN.

You can now plug the **Forum 3000** adapter into the mains socket.

Safety Notes

- **This unit should only to be opened by service personnel.**
- **Only supplied 42.5 dc adaptor (Model No: M15-45026-C5) should be used with the Forum 3000**
- **No serviceable parts are inside the plastics**

Section 3. Programming the Forum 3000

3.1 Symbols used for programming from a phone

Internal
dial tone

This is the dial tone generated internally by the system.



Successful programming tone. You will get this tone after you have successfully programmed an option. At this tone, you should clear down.



Unsuccessful programming tone. The programming code entered is either wrong or not accepted by the system for other reasons; for example, the feature you wish to program is incompatible with other settings of the system. Check to make sure the option is possible and then, try again

3.2 Programming the Forum 3000 from a phone

Basic system programming may be done from an analogue user of the Forum 3000.

To programme the system IP Address:

Lift the receiver and at Internal dial tone dial:

*** * 0 1 * DDD * DDD * DDD * DDD #**



Successful programming tone indicates the system has set the local IP address to DDD.DDD.DDD.DDD.

For example, to enter an IP address of 192.168.0.1, the sequence is '*01*192*168*000*001#'.

To programme the system Subnet Mask:

Lift the receiver and at Internal dial tone dial:

*** * 0 2 * DDD * DDD * DDD * DDD #**

😊 Successful programming tone indicates the system has set the local IP subnet mask to DDD.DDD.DDD.DDD.

For example, to enter a mask of 255.255.255.0, the sequence is '*02*255*255*255*000#'.

To Check the Local IP Address:

Lift the receiver and at Internal dial tone dial:

*** * 0 1 #**

System will read out local IP address.

Check Subnet Mask:

Lift the receiver and at Internal dial tone dial:

*** * 0 2 #**

System will read out local IP subnet mask.

Section 4. Ethernet LAN Communication and IP addresses

The Forum 3000 is configured to communicate with the DSL Modem supplied by Belgacom by default. However should you wish to change the IP address, you may do so by following the procedure outlined in this section.

4.1 Connecting to the Ethernet Port

There are two RJ45 ethernet ports on the Forum 3000 and either of these can be used to connect to a LAN or directly to a PC for configuration.

Note: Most Hubs have a LED at each Ethernet port. If the LED lights, it is a good indication that the cable has been connected correctly. If not, try another port and/or check the cable is not damaged.

Note: If installing an Ethernet Network card in a PC, make sure the driver software indicates that the device is functioning properly.

4.2 IP Configuration

For the connection to be established, the PCs and the system must have IP addresses within the same range.

The IP address of the Forum 3000 system can be checked and changed from a connected analogue phone as described in section 3.

Note: The IP configuration of the system can also be viewed and changed from Browser Based Programming once an IP connection has been established between the PC and the Forum 3000.

The default IP address of the Forum 3000 system is –

IP Address:	192.168.1.200
Subnet Mask:	255.255.255.0
HTTP Port:	80

Note: Each system has a unique MAC address that can also be viewed from System Maintenance.

In order to give the PC and the system an IP address in the same range, either the IP address of the system or the PC can be changed.

Change the IP address of the system to be within the same range as the IP address of the PC, e.g. if the IP address of the PC is 192.163.0.31, from system maintenance change the IP address of the system to 192.163.0.120

Alternatively, change the IP address of the PC so that it is in the same range as the system.

Note: If you change the IP address of the PC to a different address range from the LAN, it will no longer communicate with other devices on the LAN. It is much simpler therefore to change the address of the Forum 3000 to the address range, which is valid on the LAN, and to allocate a free address from this range to the Forum 3000.

4.3 IP Connection Testing

To check that the IP configuration is correct and both the PC and the Forum 3000 are on the same network -

At the PC, from Windows -

- Go to <**Start**>
- Select <**Run**>

A window prompting the user to open a program will appear -

- Type "**command**" (or "**cmd**" in some cases for Windows 2000) in the white field. The MS-DOS window opens with the following prompt - **C:**
- Type "**ipconfig**" at the cursor.

The details of the IP configuration of the PC will appear on the window - e.g.

Windows IP Configuration -

```
IP Address ..... 192.168.1.200
Subnet Mask ..... 255.255.255.0
Default Gateway ..... 192.168.1.254
```

Make sure that the configuration that appears on your PC is correct.

In order to test the IP connection between the PC and the Forum 3000, type "**ping**" followed by the IP address of the Forum 3000. To test for the example shown above, type -

Ping 192.168.1.200

The PC will ping the system with 32 bytes of data and report the results. If the IP connection is correct, the results should state -

Packets: Sent=4, Received=4, Lost=0 (0% Lost).

If the IP connection is incorrect, check again that the system and the PC are in the same IP address range and that the cabling connections are correct.

Section 5. Browser Programming

5.1 Introduction

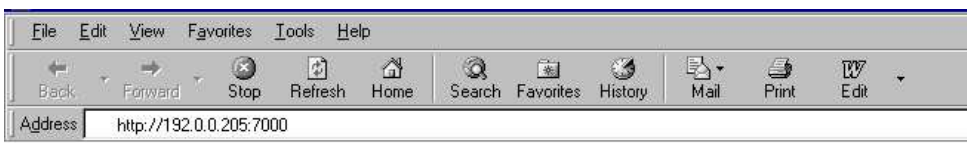
This section describes how to connect to the Browser interface on the Forum 3000 and enter the basic configuration information, which is necessary for the operation of the system. Once you have successfully connected to the browser, the full range of features offered by the system can be programmed. The browser interface also allows a software upgrade either locally by uploading it from a PC or remotely by requesting it from a remote TFTP server.

To learn about each feature, a **Help** Button is provided on each feature programming page. On Clicking the Help button, the Help page will appear on screen giving an explanation of the feature and indicating how the feature should be programmed.

Programming is carried out from a PC using any standard Internet Browser, e.g. Netscape Navigator or Microsoft Internet Explorer, that is connected to the system either directly on the Ethernet Port or through a Local Area Network (LAN).

5.2 To Enter Browser Based Programming

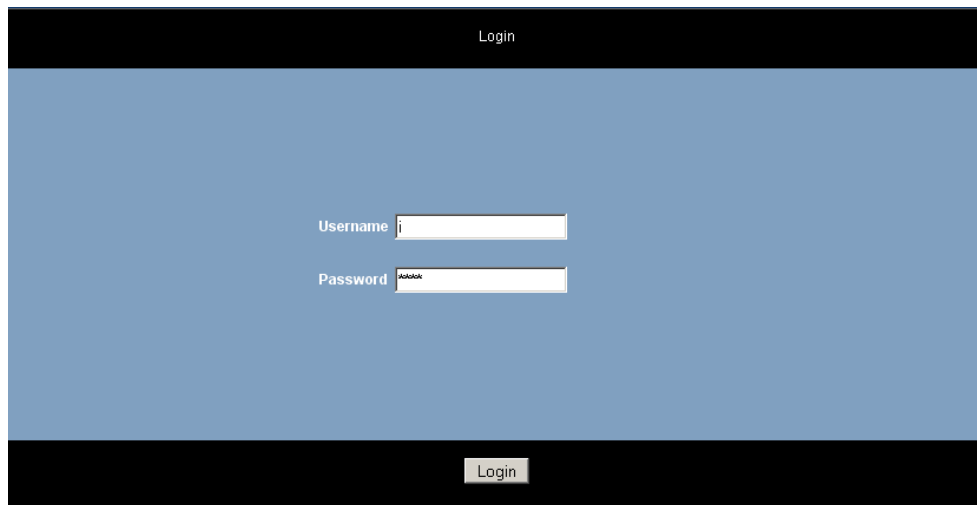
To use Browser Based Programming, the system and the PC must be on the same network with an IP connection established between them as described in section 4.



Open the Internet Browser and type the IP address of the system.
The default address is - <http://192.168.1.200>

The IP address of the system can be checked as described in section 3.

Once the IP connection is established, the following login page will be displayed:



The image shows a login interface. At the top, a black bar contains the word "Login" in white. Below this is a large blue rectangular area. In the center of the blue area, there are two input fields. The first is labeled "Username:" and contains the letter "i". The second is labeled "Password:" and contains several asterisks. Below the blue area, a black bar contains a "Login" button with white text.

Enter:

Username: Admin

Password: 1000

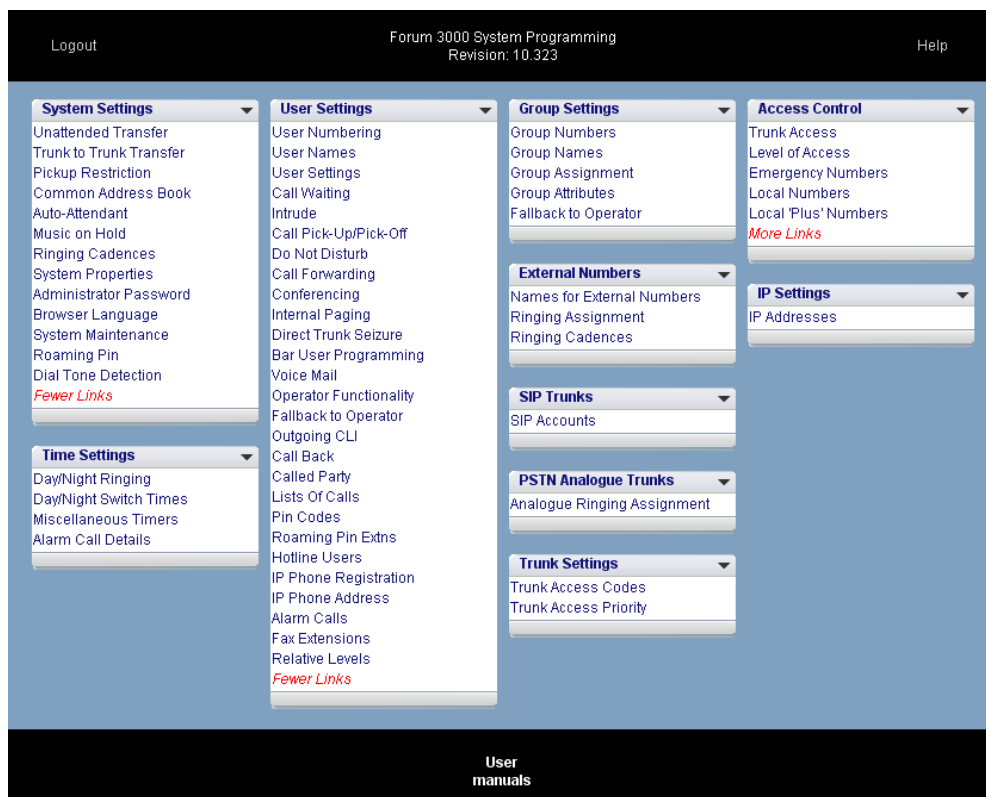
The main configuration page will now be displayed.

5.3 System Programming Page

Following login, the main configuration screen shown below will be displayed. This shows a list of the programmable settings for the system divided into related groups for ease of programming.

Clicking on any one of these links will open the configuration page for that parameter.

Click on the user manuals link below the screen to download the manuals from the Belgacom website.



5.4 Manual Programming of the SIP trunk lines

The VoIP trunk lines of the Forum 3000 are configured automatically by the Belgacom network. However, should you need to programme the trunks manually, you can do so by clicking the link 'SIP Accounts' under the heading IP Trunk Settings. The following page will be displayed:

Home	SIP Accounts					Help
Index	Name	Username	Provider	Trunk Access	Status	
1	line 1	027956439	sip.operator.com	*901	Disabled	Edit
2				*902	Disabled	Edit
3				*903	Disabled	Edit
4				*904	Disabled	Edit
5				*905	Disabled	Edit
6				*906	Off-Line	Edit
7				*907	Off-Line	Edit
8				*908	Off-Line	Edit
9				*909	Off-Line	Edit
10				*900	Off-Line	Edit
Back						

This page is used to display the status and parameters of the SIP external lines, which connect to the Voice over IP public network. Each telephone number corresponds to an account on the public VoIP network. Each account has a user name and password. These details are provided by the operator of the network.

The parameters of the SIP accounts are displayed here. They can be configured by pressing the button 'edit'. The following parameters are displayed.

NAME: The Forum 3000 may allocate a name to each SIP account.

USERNAME: This is the username defined by the network operator for this SIP account.

PROVIDER: This is location of the SIP server as defined by the network operator. Typically it is in the format sip.operator.com.

LINE ACCESS: This is the line access code for this trunk. The user on an outgoing call may select this particular trunk by using the line access code prior to dialling the external number.

STATUS: Indicates whether the SIP account is operational or not.

Click on the 'Edit' button on the first line of this table. The following page will be displayed:

The screenshot shows the 'SIP Account - #1' configuration page. It has a top navigation bar with 'Home', 'SIP Account - #1', and 'Help'. The main content area is divided into several sections, each with a set of configuration fields:

- Basic Settings:** Includes 'Name' (line 1), 'Trunk Access' (*901), 'Enabled' (No), and 'Status' (Disabled).
- Provider Settings:** Includes 'Sip Server' (sip.operator.com), 'Sip Server Port' (5060), 'Registration Required' (Yes), 'Forced Proxy IP' (81.240.251.22), 'RegInterval' (1800), and 'STUN Server'.
- Subscriber Settings:** Includes 'Username' (027956439), 'Password' (*****), 'AuthID' (u27956439), and 'External Number' (027956439).
- Audio Settings:** Includes 'Codec Priority 1' (G729), 'Codec Priority 2' (G711-A), 'Codec Priority 3' (None), and 'DTMF Method' (RTP Event).
- Dialing Settings:** Includes 'Dial Plan' and 'Dial Timeout' (4).

At the bottom of the page, there are 'Save' and 'Back' buttons.

This page is used to configure the SIP external lines that connect to the Voice over IP Operator network. Each SIP trunk requires an account on the Operator network. The network operator provides the details of this account.

The parameters of the SIP trunk are altered or edited on this page. The following parameters may be configured:

Basic Settings

NAME: The Forum 3000 system can allocate a name to each SIP trunk line.

LINE ACCESS: This is the line access code for the trunk. The user on an outgoing call may select a particular trunk by using the line access code prior to dialling the external number.

ENABLED: The line may be enabled or disabled here.

STATUS: Indicates whether the SIP trunk is operational or not.

Provider Settings

SIP SERVER: The location of the SIP server in the Operator's network. The Operator provides this information. Typically it will be in the format sip.operator.com.

SIP SERVER PORT: This is the PORT number for the SIP protocol. By default it is 5060. If the operator uses a different port number it should be entered here.

REGISTRATION REQUIRED: Is registration required by the network operator or not?

FORCED PROXY IP: This is the IP address of the SIP server.

REGINTERVAL: The SIP protocol allows for periodic registration messages to be sent to the SIP server in order to keep it updated on the status of the SIP client. The parameter RegInterval allows the system administrator to program the length of the registration interval in seconds.

STUN SERVER: Some operators require the use of a STUN server (Simple Traversal of UDP through NATS). If the operator provides the address of a STUN server with the account details, it should be entered here.

Subscriber Settings

USERNAME: This is the username provided by the network operator for the SIP account.

PASSWORD: This is the password provided by the network operator for the SIP account.

AuthID: Authorisation ID provided by the network operator.

EXTERNAL NUMBER: This is the public telephone number associated with this SIP account. It is provided by the network operator and should be entered here. It is then added automatically to the list of external telephone numbers of the system.

Audio Settings

Codec priority 1,2,3: These fields are used to set the preferred audio codecs.

DTMF Method: This parameter allows the system administrator to select the method of transmitting DTMF digits across the VoIP network.

Dialling Settings

DIAL PLAN: During dialling on outgoing calls, the digits are stored until the complete number has been dialled and then the complete number is transmitted en bloc to the VoIP network. A period of three seconds without dialling is interpreted by the system as the end of dialling. This means that the system must delay transmitting the number for a period of 3 seconds after the end of the last digit. The Dial Plan allows the system administrator to define number types that can be dialled immediately without waiting for the 3-second period to elapse.

For example, the entry

[2-8]XXXXXX=,08[567]XXXXXX=,999=,911=

will be interpreted by the system as follows:

Any number with first digit 2,3,4,5,6,7 or 8 followed by six digits may be dialled immediately and

Any number beginning with 08 and whose third digit is 5,6 or 7 followed by seven digits may be dialled immediately and

The number 999 may be dialled immediately and

The number 911 may be dialled immediately.

DIAL TIMEOUT: This is a pre-defined period without dialling which is interpreted as the end of dialling. The default is 3 seconds and this may be changed here by specifying an alternative value.

Click [SAVE] to accept new settings.

Click [BACK] to return to the main menu.

The double arrows << and >> at the bottom of the page may be used to jump forward or back to the next SIP account.

5.5 Programming the Ringing Assignment

Each external telephone number connected to the Forum 3000 may be programmed to ring a different user or set of users on incoming calls. The SIP trunk assignment is carried out at the 'Ringing assignment' page in the section 'External Numbers'. The analogue line assignment is done on the 'Analogue Ringing Assignment' page under PSTN Settings. The ringing assignment may be changed for different times of the day. By default, three ringing modes are defined, 'Day ringing' and 'Night ringing' and 'Operator Mode' and there are two additional modes that can be defined by the user.

By default, all external lines are programmed to ring the first IP user, user 11 and the first analogue user, user 31 of the Forum 3000. These two users together are defined as the operator group, group 9, by default.

This ringing assignment can be changed by typing the users or groups or Auto-Attendant message to be rung when an incoming call arrives on a particular line, as shown below and pressing the SAVE button.

You may change to a different ringing mode by pressing the link below the table on the left.

Ringing Assignment Table for SIP Trunks

[Home](#)
[Ringing Assignment](#)
[Help](#)

Index	External Number	Day Ringing
1	027956439	9
2	027956440	11,15,16
3	027956441	12
4	027956442	9
5		9
6		9
7		9
8		9
9		9
10		9

Ringing Mode [1](#) [2](#) [5](#)

[Save](#)
[Back](#)

Ringing Assignment Table for the FXO analogue PSTN trunk

Home
Analogue Ringing Assignment
Help

Analogue Trunks	Day Ringing
7	9,15

Ringing Mode 1 2 5

Save
Back

5.6 Programming the Trunk line Access digit

The trunk line access digit is the digit dialled by a user to make a call on an external line. By default this is 0. In addition to the default trunk access code there are eight other codes available, which may be allocated to the various external lines using the table below.

Trunk Access Codes

In the example shown below, IP3-IP6 are 4 VoIP trunk lines and A5 is the analogue trunk line.

Dialling the digit 0 will select any IP trunk line.

Dialling *91 will select the first IP trunk line.

Dialling *92 will select the second IP trunk line.

Dialling *93 will select the third IP trunk line.

Dialling *94 will select the fourth IP trunk line.

Dialling *95 will select the analogue trunk line.

Home
Trunk Access Codes
Help

Trunk Access	IP3	IP4	IP5	IP6	A7
0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
*91	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
*92	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
*93	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
*94	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
*95	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
*96	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
*97	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
*98	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1 2

Save
Back

5.7 Programming other features

All of the other features of the Forum 3000 can be programmed by clicking on the feature on the System Programming page and following the instructions in the comprehensive online help available on every page.

5.8 Connecting the Forum iPhone 3020/3010.

Connect the LAN port of the Forum iPhone 3020/3010 to the LAN using the Ethernet cable supplied with the phone. If the network is equipped to supply power over the LAN the phone will now power up and auto-discover the Forum 3000 system on the LAN. The phone will be automatically allocated a user number by the Forum 3000 system.

If the network is not equipped to supply power over the LAN, use the AC/DC plug-top power supply available for the phone. Insert the DC plug of the adapter into the DC power socket on the back of the phone and insert the AC plug into the electrical mains outlet.

The phone will now auto-discover the Forum 3000 system on the LAN and will be automatically allocated a user number.

You may now start to make calls with the phone.