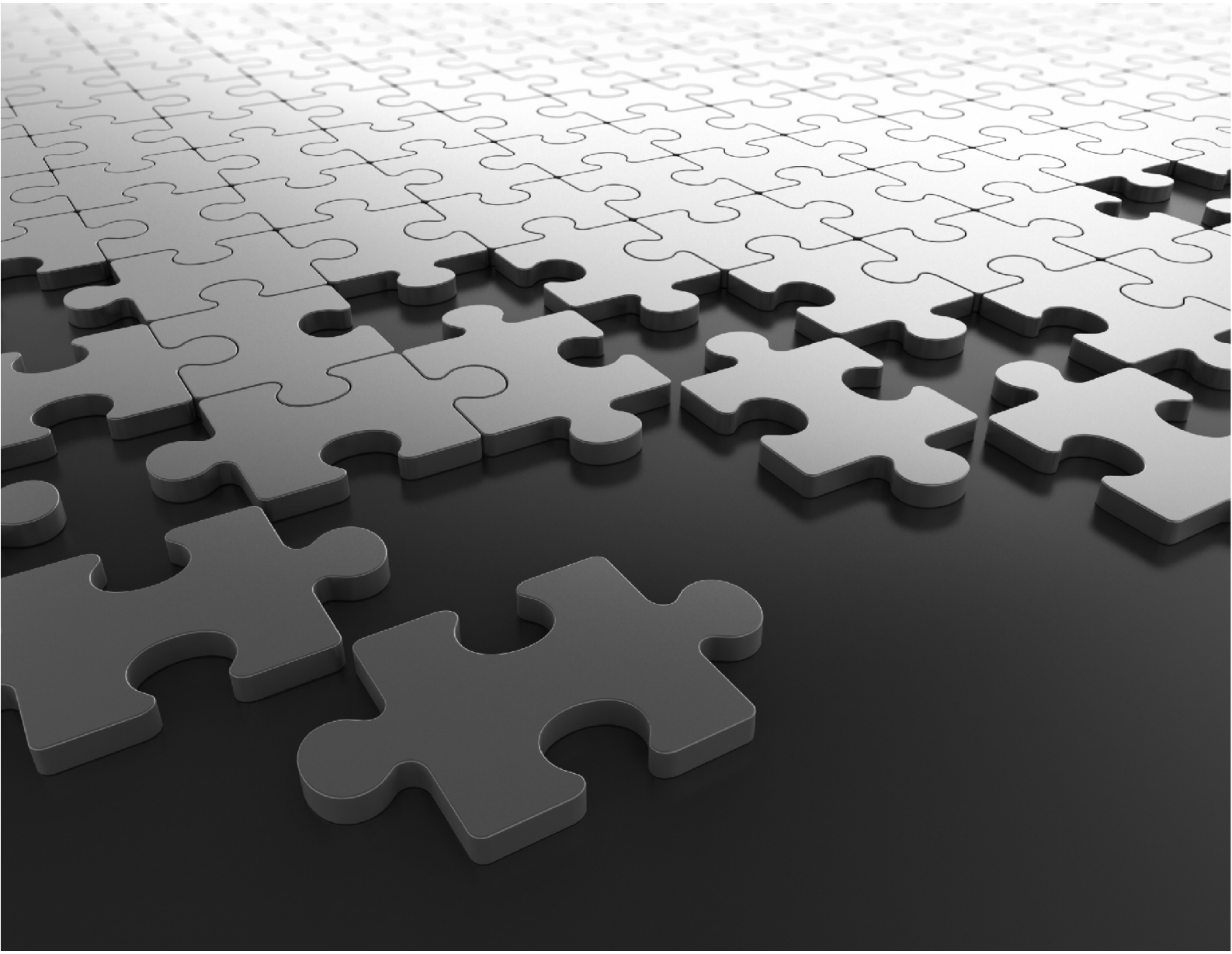
SIMADO GFX44
System Manual



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SIMADO GFX44

Multi-port Mobile-FXS Gateway with LCR

System Manual

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CHAPTER 1

Introduction

Welcome

Thank you for choosing SIMADO GFX44! This product is designed to give you the highest performance, combined with real ease of use. We hope you will make optimum use of this intelligent, intuitive, feature-packed Multi-Port GSM-FXS Gateway. Please read this document carefully before installing your SIMADO GFX44.

About this System Manual

This System Manual contains detailed information and instructions for installing, configuring and using the system. It also contains information on protecting and maintaining the system.

Intended Audience

This System Manual is aimed at:

- **Network and System Engineers (SE):** Persons who install, configure and maintain the SIMADO GFX44. It is assumed that they have some experience in installing and programming GSM Gateways.
- **Users:** Persons who actually use SIMADO GFX44. Users are not expected to configure the system or program its features.

Organization of this Document

This System Manual contains the following chapters:

Introduction: Gives an overview of this document, its purpose, intended audience, terms and conventions used to present information and instructions etc.

Know your SIMADO GFX44: Provides overview of SIMADO GFX44 and its various applications.

Getting Started: Contains information for installing SIMADO GFX44 and basic configuration steps.

Features of SIMADO GFX44: Gives detailed instructions for understanding the features of SIMADO GFX44. It also shows steps for programming and using the various features of the system such as Allowed-Denied Numbers, Automatic Number Translation, Call Progress Tones, Multi-Stage Dialing, etc.

How to Read this System Manual

This System Manual is prepared in such a way that you will find all the information quickly and easily.

Using table of contents and the index: You can refer to the table of contents and the index at the end of this this System Manual to find the information you are looking for.

Cross-references appear in blue font colour in the text. These are hyperlinked. You will be able to navigate easily through the System Manual by clicking these hyperlinks.

Conventions used in this System Manual

The following symbols have been used for notices to draw your attention to important things:

Note: *It indicates something that requires your special attention or to remind you of something you need to do when you are using SIMADO GFX44.*

Warning/Caution: *It indicates a hazard or an action, which will cause damage to the phone and/ or cause bodily harm.*

Terminology used in this System Manual

The Following terms are used interchangeably through out this system manual:

1. 'SIMADO GFX44', 'GFX44', 'Gateway' and 'System'
2. 'System Engineer (SE)' and 'you'
3. 'Caller' and 'Calling Party'
4. 'Callee' and 'Called party'

Some of the terms used in this System Manual are defined below:

- **System Engineers (SE):** A person who install, configure and maintains SIMADO GFX44.
- **User:** A person who uses SIMADO GFX44.
- **Caller/Calling party:** A person who makes calls to SIMADO GFX44.
- **Callee/Called party:** A person to whom calls are made by the User.

Using this System Manual, you will be able to install, operate and make optimum use of SIMADO GFX44. In case you face any technical difficulties, you are advised to contact our dealers for help. All Matrix dealers are properly trained and ready to give you support whenever needed. In addition to this, technical consultation is also available from Matrix engineers every business day. For technical consultation from our engineers, you are requested to dial our support numbers.

CHAPTER 2

Know your SIMADO GFX44

Overview of SIMADO GFX44

SIMADO GFX44 is a compact gateway that supports quad-band operation allowing it to work with any Mobile network. Besides this, it has various benefits such as CDR for keeping records of calls history, flexibility of remote programming, COM Port for report generation and programming, etc.

SIMADO GFX44 finds its application in the corporate offices, factories, call centers, hotels and such other establishments. In an Organization all the incoming calls on the GSM port can be routed to the FXS port to reach the operator or the desired extension of the PBX. Similarly, all the outgoing calls made to the mobile phones can be routed through the GSM port of the gateway, reducing the telecommunication cost of the organization.

SIMADO GFX44 has 4 FXS Ports, a Communication Port, 4 Mobile Ports, an Antenna Connector, a Power Socket and 9 LEDs (8 Port LEDs + 1 Power LED).

SIMADO GFX44 supports SIMCOM 3G module for voice. When 3G module is installed in the system, it will have the following effect:

1. RCOC-When Busy and RCOC - When No Reply will not work.
2. Frequency Band Selection not required.
3. Current calls will be disconnected if Call Waiting Service is not disabled in the SIM Card. Disable Call Waiting in SIM Card before inserting it in SIMADO GFX44.

FXS Ports

The FXS ports labeled as FXS1, FXS2, FXS3 and FXS4 are used to connect telephone instruments to the gateway.

Communication Port

Communication Port labeled as 'COM 10101' is used to connect SIMADO GFX44 to a computer to generate CDR report or debug report or to connect to the Jeeves.

Mobile Ports

There are 4 mobile ports, located on the two GSM modules inside the gateway (two ports on each module). A SIM card is to be inserted in the SIM holder of each mobile port. You can insert and use as many as 4 SIM cards simultaneously, which may be of the same or different service providers.

Antenna Connector

A socket labeled as 'ANTENNA' is used to connect Antenna to the gateway for mobile network.

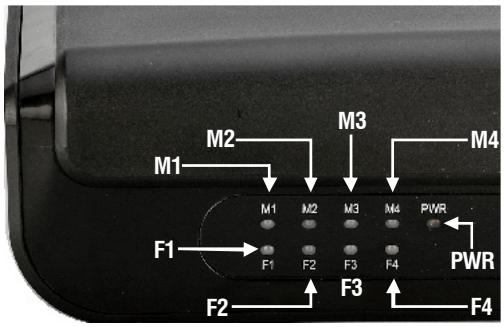
Power Socket

A Power socket labeled as 12V DC is used to power the gateway using 12V DC, 2A power adaptor.

LEDs

SIMADO GFX44 has total 9 LEDs:

- Four LEDs for FXS ports labeled as F1, F2, F3 and F4
- Four LEDs for Mobile ports labeled as M1, M2, M3 and M4
- One LED for Power labeled as PWR

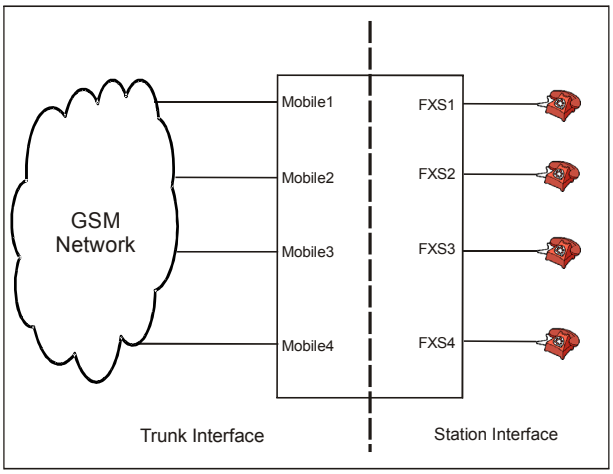


These LEDs indicate the status of the ports, various events occurring on the ports and also the error conditions.

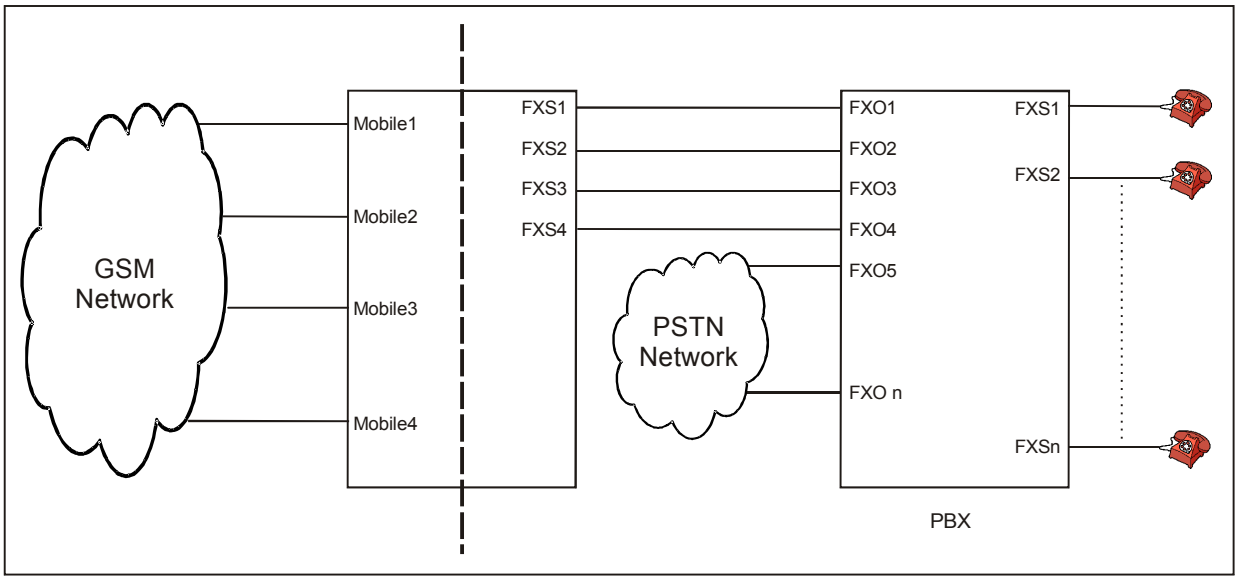
Applications of SIMADO GFX44

SIMADO GFX44 finds its applications in corporate offices, factories, call centers, hotels and such other establishments. SIMADO GFX44 can be used as stand-alone system as well as it can also be interfaced with the PBX.

Case 1: SIMADO GFX44 as Stand-alone



Case 2: SIMADO GFX44 interfaced with PBX



Programming SIMADO GFX44

Programming of SIMADO GFX44 can be done in the following ways:

- Using Serial Jeeves
- By issuing commands from FXS Port
- By issuing commands through Mobile Port

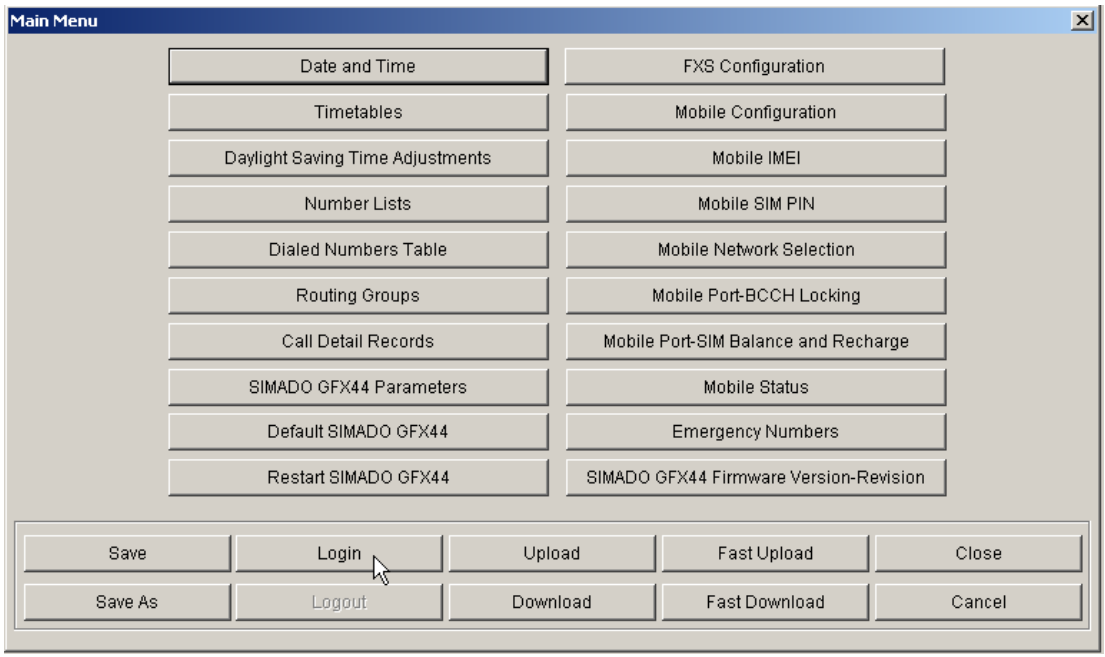
Programming using Serial Jeeves

SIMADO GFX44 enables you to program the system through windows based software, known as Jeeves. Jeeves is a flexible and friendly tool with mouse operated GUI. To program the system using Jeeves, follow the steps given below:

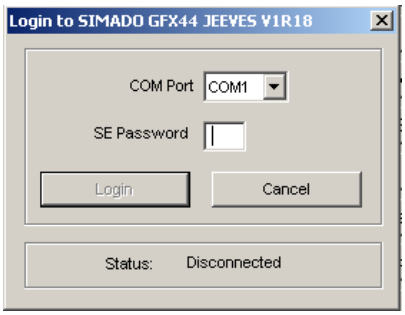
- Insert 'Matrix SIMADO GFX44' CD provided to you along with the product in the CD Drive of your computer. It is an auto-run CD.
- CD drive window will open. It contains two folders viz. 'Documents' and 'SIMADO GFX44 Jeeves VxRy'. (If CD does not open by itself, click 'My Computer' → 'CD Drive'.
- Open 'SIMADO GFX44 Jeeves VxRy' folder. Run set-up to install the Jeeves into your computer.
- Connect your computer with the system using COM Port.
- Click Start → Programs → Matrix → SIMADO GFX44 Jeeves VxRy. SIMADO GFX44 Serial Jeeves Home page will open.

- There are three options on the home page of the Jeeves:
  - **File:** In File, click 'New' to open Main menu of the Jeeves page. Click 'Open' to open the Jeeves configuration saved in your computer and click Exit to close Jeeves.
  - **Language:** In Language, seven different languages are displayed viz. English, Italian, Spanish, French, German, Portuguese and Russian. Select the language in which you want Jeeves content to be displayed.
  - **Help:** In Help, you will be able to access: 1) SIMADO GFX44 System Manual 2) SIMADO GFX44 Quick Start and 3) About Jeeves.

- Click File → New, main menu of the Jeeves will open. On main menu page, links for various features is displayed.



- Click the 'Login' button → Select the COM Port in the 'COM Port' field → Enter default SE password 1234 in 'SE Password' field.



- Click the given links one by one and program the parameters as per your requirement. (For detailed programming of all the features, refer respective feature in "Features of SIMADO GFX44" chapter.)

- Save the configurations in your computer and upload the same into your system.

How to Save the Configuration in SIMADO GFX44?

- To save the configuration in the system, it is recommended for the SE to logout from the programming mode or to wait for five minutes if still in the programming mode.
- Restart the system only after saving the configuration in the system else new configuration will be lost.
- Same is applicable while doing programming using Jeeves. Any changes done in Jeeves will take effect permanently only after quitting the Jeeves or 5 minutes (approx.) after doing the change (if SE is still in Jeeves) whichever occurs earlier.

Entries of CDR records and RCOC table will be saved in the system only after 5minutes (approx) of the occurrence of the event.

In future if the configuration of your system is disturbed or due to some error you need to program the system again, in that case you can upload the saved configuration from your computer to the system by following the steps given below:

- Click Start → Programs → Matrix → SIMADO GFX44 Jeeves VxRy. SIMADO GFX44 Serial Jeeves Home page will open.
- Click Open → Select the saved file → Configuration file will open.
- log in to Jeeves and upload the saved configuration to the system by clicking 'Upload' or 'Fast Upload' button.

You can also download the system configuration into your computer and upload the same again in your system as and when required. This is required when there is some problem in the system and you have to send the system for repair or maintenance. Follow the steps given below to download and upload the configurations.

- In the Jeeves window, click the 'Download' or the'Fast Download' button and download the system configurations into your computer.
- Make necessary changes, if required.
- Upload it again into your system by clicking the 'Upload' or 'Fast Upload' button.

(Refer "Jeeves" topic in chapter "Features of SIMADO GFX44" for more details)

Programming through FXS Port

To program the system using commands from FXS port, you must enter the programming mode. Follow the steps given below to program the system from FXS port:

- Lift the handset of the telephone instrument connected to the system.
- Dial ***19*** followed by SE password (Default = 1234) to enter the programming mode. You will get programming tone.
- Enter the programming command.
- Dial ***00-#**** or just go On-Hook to exit the programming mode.

Programming through Mobile Port (Remote Programming)

Follow the steps given below to program the system through Mobile Port:

- Ensure (through LED indication) that the SIM Card installed in the GSM Module of the Mobile Port is registered with the network.
- Also make sure that the routing type programmed for the Mobile Port is set to 'Answer-Number Based' or 'Answer-Fixed'.
- Call Mobile Port of the system by dialing the number of the active SIM Card installed in the system with another mobile or telephone instrument. You will get dial tone of the system.
- Dial ***19*** followed by SE password (Default = 1234) to enter the programming mode. You will get programming tone.
- Enter the programming command.
- Dial ***00-#**** or just go On-Hook to exit the programming mode.

- *You can program the system either by issuing commands or through Jeeves. However, while programming the system using commands you can enter the programming mode from both FXS and Mobile Port simultaneously.*
- *It is advisable to exit from programming mode by dialing **00#*.***
- *Refer respective topics to see the programming commands for different parameters.*

CHAPTER 3 **Getting Started**

Protecting SIMADO GFX44

You should take following measures to protect your SIMADO GFX44.

Installation Precautions:

- Do not turn on the power supply until the installation is complete.
- Do not install the system in direct sunlight and the place where there is excessive cold or humid atmosphere.
- Do not install the system where sulfuric gases are produced and in areas where there are thermal springs because it may damage the equipment.
- Do not install the system at the places where shocks or vibrations are frequent or strong.
- Do not install the system at dusty places or places where it may come in direct contact with oil or water.
- The system should be installed at the place where enough open space is there for ventilation.

Safety Instructions:

You should always take basic safety precautions to reduce the risk of fire, electric shock and injury to the system as well as the person using it. Follow the steps given below:

- Read and understand all the instructions given in the manual.
- Unplug the product from the wall outlet before cleaning and do not use liquid cleaners. Use only dry and soft cloth.
- Do not use the product near water. For e.g. near a bath-tub, kitchen sink or near a swimming pool.
- Do not open the system in power ON condition.
- Do not place the product at the place from where it can fall and serious damage may be caused to the product.
- Interfacing cables should not touch the exposed power line cable.
- The product should be operated with proper power voltage supply. It is advisable to give stabilized power to the product.
- Do not place the product where power cord can be misused.
- Reduce the risk of electric shock or damage to the system by taking the product to a qualified serviceman for repair work or servicing. Removing covers or opening the system or incorrect reassembly may cause electric shock when used subsequently.

Warning for RF Safety:

This product complies with the RF exposure guidelines as per standard FCC 47 CFR part 2. However, following recommendations are solicited:

- *Ensure that the RF Antenna is installed atleast 20 cms away from other electronic and radio transmission devices.*
- *Also ensure that the RF antenna is installed at a place atleast 20 cms away from people's vicinity.*
- *Do not place the magnetic storage media near the device.*
- *People carrying medical implants like cardiac pacemakers are advised to maintain appropriate distance from the system. They are also advised to avoid being in the vicinity of the product for a long time.*

Unplug the system from the wall outlet and contact the 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 product has been dropped or the cabinet has been damaged.
- If the product does not operate normally by following the operating instructions. Adjust only those controls which are covered by the operating instructions because improper adjustment of other controls may 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 the performance.

Installing SIMADO GFX44

Verifying Package Contents

Before installing SIMADO GFX44, verify the package contents. The Sales Kit of SIMADO GFX44 contains:

SIMADO GFX44 with Antenna (Rubber ducky(SMA)

Adaptor 12VDC, 2Amp. (Country Specific)

Quick Start

Line Cord (RJ11) (as per Configuration)

CD containing System Manual, Quick Start and Jeeves Software

- Two Screws M 7/30 with Grips
- External Cable Antenna SMA
- A Mounting Template
- A Warranty Card set

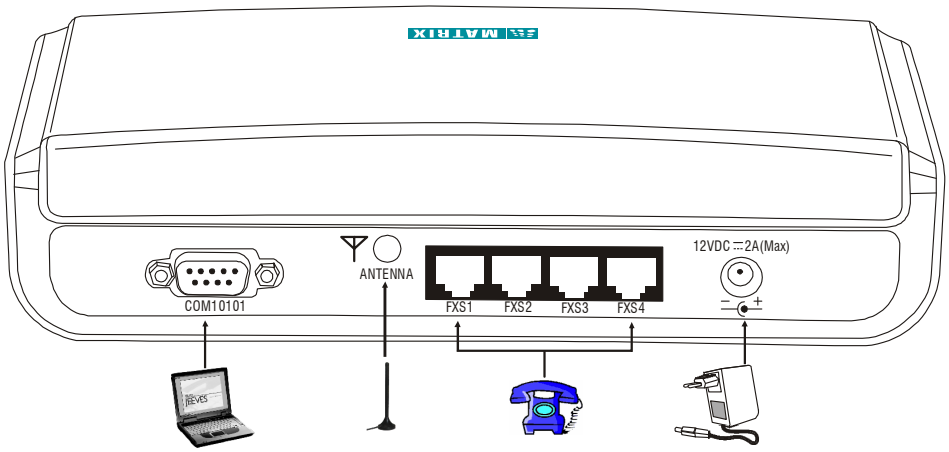
Make sure that all the above mentioned components are present when you open the Sales Kit of SIMADO GFX44. In case any of the part is missing or damaged, contact the vendor from whom you have purchased the system.

Mounting on Wall

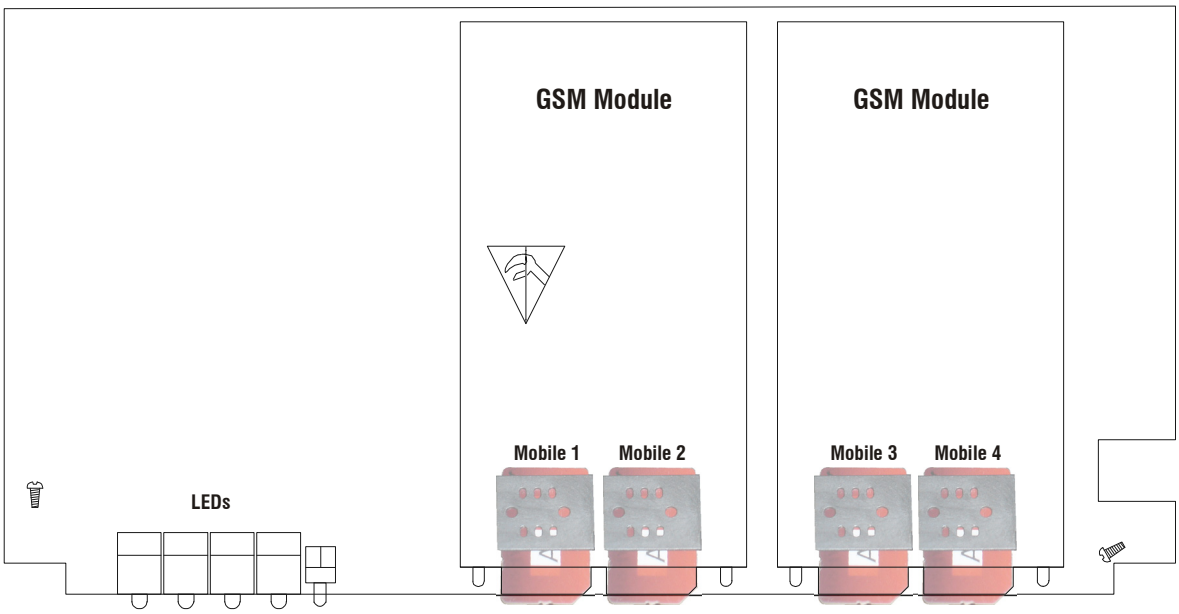
- Select a suitable place on the wall for mounting SIMADO GFX44.
- Put the mounting template on the wall and mark the nail hole.
- Drill a hole of appropriate size.
- Insert the nail grip in the hole.
- Insert the screw and tighten it leaving the screw head a few millimeters protruded of the wall.
- Check the strength of the nail.
- Hang SIMADO GFX44 on the wall.

Connecting the System

SIMADO GFX44 can be used as stand-alone system as well as it can also be interfaced with the PBX. It should be installed at the airy, dust free and moisture free place.



- Place SIMADO GFX44 at a place where it can get proper power supply and network signals.
- Connect Antenna provided with the system to the antenna (TNC) connector labeled as 'ANTENNA' of GFX44.
- Open the top cover and insert SIM card/s into the GSM modules of the system and close the cover properly.



When SIMCOM 3G module is used in SIMADO GFX44 then the call waiting service must be disabled in the SIM Card inserted in the Mobile Port else it will result in call disconnection in speech condition if another call is detected by the module.

- Connect telephone instrument with CLI display to the FXS ports of GFX44 with the help of RJ11 cable.
- Connect COM Port of GFX44 to a computer using COM Port cable.
- Connect Power Socket of GFX44 to the power supply using 12V DC Adaptor provided to you with the system and switch ON the power supply.

Switching ON SIMADO GFX44

After connecting the system, switch ON the power supply.

At power ON:

- Power LED glows green (continuously).
- After approximately 2 seconds all other LEDs pursue the following sequence: Glow Red for 500ms → Glow Green for 500ms → GSM initialization starts.
- GSM initialization takes approximately 50-60 seconds.
- On successful completion of GSM initialization, system explores the network.
- System takes few seconds for establishing connection with the network. After successful registration with the network, all LEDs will turn off.

Following table shows LED indications during various events and error conditions:

Event	Colour	Cadence in ms (1 Cadence = approx. 3000 ms.)
During GSM Initialization	Orange	200ms ON-200ms Off 200ms ON-200ms Off 200ms ON-200ms Off 200ms ON-200ms Off 200ms ON-1200ms Off (5 Blinks)
If PUK Required	Orange	200ms ON-200ms Off 200ms ON-200ms Off 200ms ON-200ms Off 200ms ON-1600ms Off (4 Blinks)
If SIM PIN Faulty	Orange	200ms ON-200ms Off 200ms ON-200ms Off 200ms ON-2000ms Off (3 Blinks)
If SIM Absent	Orange	200ms ON-200ms Off 200ms ON-2400ms Off (2 Blinks)
If Network Absent/GSM Module could not establish connection with the network	Orange	200ms ON-2800ms Off (1 Blink)

During Normal Functioning:

Following table shows LED indications during various events occurring on FXS/Mobile Ports of the system:

Event	Color	Cadence in ms (1 Cadence = approx. 3000 ms.)
Port Disable	--	LED Off
Port Idle	--	LED Off
Port Off-Hook	Red	Continuous ON
Ring Event	Green	400ms ON-200 ms Off 400ms ON-2000ms Off
Port Active	Red	68 ms ON-68 ms Off
Speech	Green	Continuous ON
Call Minutes* (Free minutes utilized)	Red	1000 ms ON-2000 ms Off

** Applicable for Mobile Ports only, when mobile port is idle. (Refer "“Call Minutes”" topic for details)*

Once the system is switched ON, it attains the normal working position in few minutes.

To protect the SIM Card inserted in the system from being mis-used, SE is recommended to take following steps:

- Switch Off SIMADO GFX44.
- Remove SIM card and insert the same in the mobile instrument.
- Enable 'SIM PIN at Power ON' parameter in the SIM card.
- Change the SIM PIN of the SIM card to 1234. (default)
- Insert SIM card in SIMADO GFX44 and switch on the system. Change the SIM PIN after GFX44 attains normal working position.

SE is recommended to default the system and restart it once again and then start configuring it. SE is recommended to program the system in following sequence:

- SIM PIN
- Mobile Network selection
- Date and Time
- Time Table
- Port Parameters- Mobile
- Port Parameters- FXS
- Routing Group
- Routing Type
- Emergency Number Dialing
- Number Lists
- Allowed Denied Numbers
- Automatic Number Translation
- Hotline and so on…

For detailed description of all the features of SIMADO GFX44 and to configure each of them, please refer the respective topics under the chapter “Features of SIMADO GFX44”.

Test Calls

You can receive and make calls either from a cell phone or from analog phone connected to SIMADO GFX44.

Making a Call

- Lift the handset of the telephone instrument connected to the FXS port of SIMADO GFX44. You will get the dial tone.
- Dial any cell phone number. You will hear the RBT.
- Talk when the called party answers the call.
- Replace the handset to disconnect the call.

Receiving a Call

- Ring on telephone instrument connected to the FXS port of SIMADO GFX44.
- Lift the handset to talk.
- You will be in speech with the calling party.
- Replace the handset to disconnect the call.

First outgoing call will be routed through first mobile port if free else it will be routed through next free mobile port in the ascending order of the selection. Similarly, first incoming call will land on FXS1 port if free else it will select next free FXS port in the ascending order of the selection. (For routing of the calls refer "Routing Type" feature)

CHAPTER 4 *Features of SIMADO GFX44*

Allowed-Denied Numbers

Allowed-Denied number feature provides you the flexibility to allow or deny dialing of a particular number or a set of numbers. This feature is used to restrict the users from dialing the numbers that are programmed in the Denied number list. To use this feature, it should be enabled on each port. If Allowed-Denied Numbers feature is disabled then the system will not check the number lists programmed for this feature.

When you dial out a number on FXS port of GFX44, it will compare the dialed number string with the numbers programmed in allowed and denied number lists. One of the following situations may arise:

- If the dialed number matches with the allowed list number then GFX44 will dial out that number.
- If the dialed number matches with the denied list number then GFX44 will not process the call further and will give an error tone to the caller.
- If dialed number does not match any of the numbers programmed in allowed and denied number list then GFX44 will dial out that number.
- If same number is programmed in both allowed and denied number list then that number will be dialed out.

For this feature to work, SE shall program the number list for each FXS port and Mobile port. After programming allowed and denied number list, SE should assign these number list to the FXS and Mobile ports.

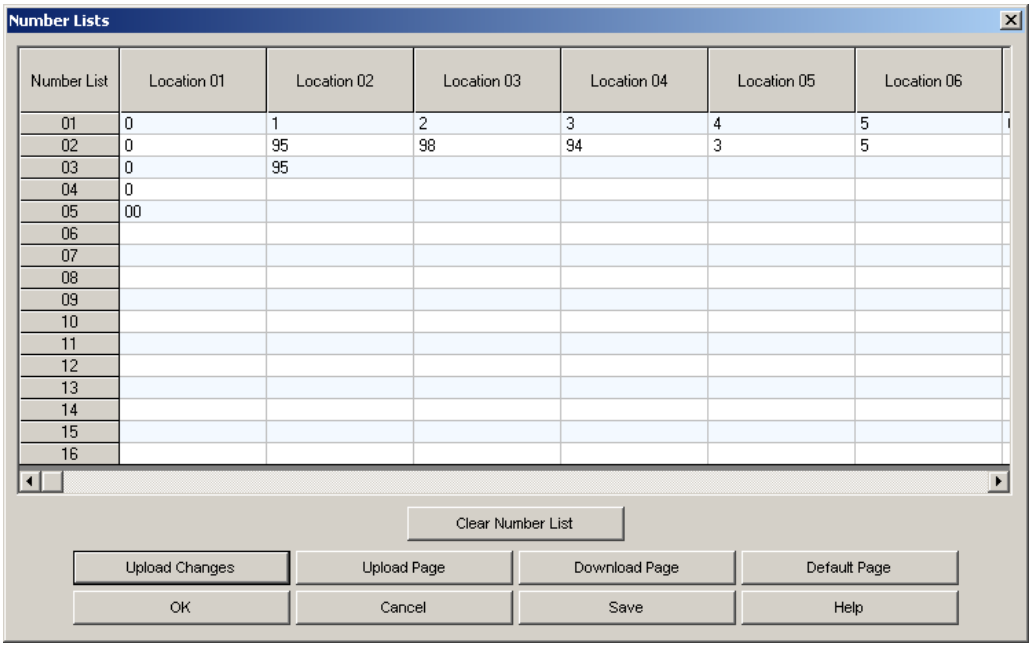
How to Program?

Before you start programming allowed-denied number list, list down the numbers that you want to allow and deny on a piece of paper first.

Programming using Jeeves:

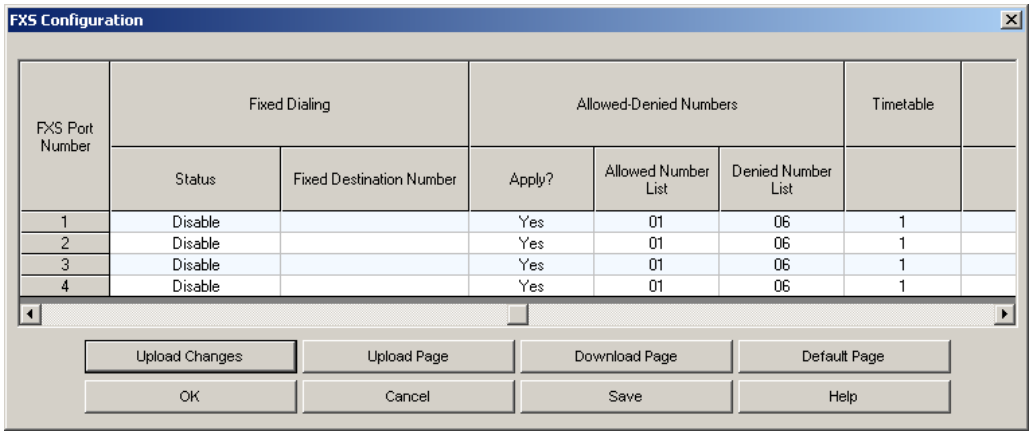
- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)

- Open '**Main Menu**' page and log in to Jeeves. Click the'**Number Lists**' button.



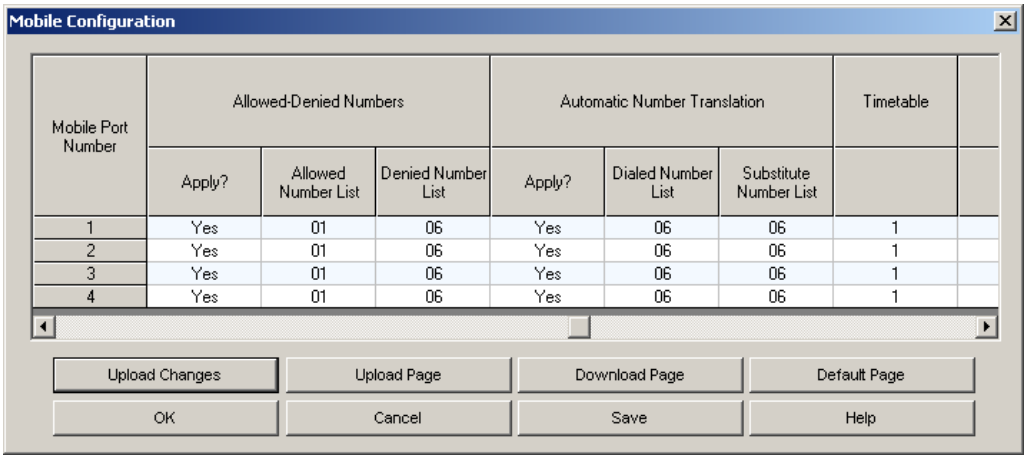
- Program allowed numbers and denied numbers in different number lists for all FXS and Mobile Ports.

- Click the '**FXS Configuration**' button and go to 'Allowed-Denied Numbers' column.



- Program Allowed-Denied Numbers Table as shown below:
  - **Apply?** Select 'No' in this field if you do not want to apply allowed-denied logic to FXS Port. ***By default, it is set to 'Yes'.***
  - **Allowed Number List:** Assign allowed number list in this field for each FXS Port. ***By default, number list 01 is assigned to all FXS Ports.***
  - **Denied Number List:** Assign denied number list in this field for each FXS Port. ***By default, number list 06 is assigned to all FXS Ports.***

- Click the '**Mobile Configuration**' button and go to 'Allowed-Denied Numbers' column.



- Program Allowed-Denied Numbers Table as shown below:
  - **Apply?** Select 'No' in this field if you do not want to apply allowed-denied logic to Mobile Port. ***By default, it is set to 'Yes'.***
  - **Allowed Number List:** Assign allowed number list in this field for each Mobile Port. ***By default, number list 01 is assigned to all Mobile Ports.***
  - **Denied Number List:** Assign denied number list in this field for each Mobile Port. ***By default, number list 06 is assigned to all Mobile Ports.***

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

For programming the Number Lists
(Refer "Number Lists" feature for programming the Number Lists)

- To Enable/Disable allowed-denied logic on FXS Port
  Use the following command to enable/disable allowed/denied logic on FXS Port:
  115-FXS Port-Code-#*
  Where,
  FXS Port is from 1 to 4.

Code	Meaning
0	Disable
1	Enable

  By default, allowed-denied logic on all FXS Ports is enabled.

  Use the following command to enable/disable allowed/denied logic on all FXS Ports:
  115-*-Code-#*

- To assign allowed number list to FXS Port
  Use the following command to assign an allowed number list to a FXS Port:
  111-FXS Port-Number List-#*
  Where,
  FXS Port is from 1 to 4.
  Number List is from 01 to 16.
  By default, Number List 01 is assigned to the FXS Port.

Use the following command to assign an allowed number list to all the FXS Ports:
111-*-Number List-#*

- To assign denied number list to FXS Port
  Use the following command to assign a denied number list to a FXS Port:
  112-FXS Port-Number List-#*
  Where,
  FXS Port is from 1 to 4.
  Number List is from 01 to 16.
  By default, Number List 06 is assigned to the FXS Port.

  Use the following command to assign denied number list to all the FXS Ports:
  112-*-Number List-#*

- To Enable/Disable allowed-denied logic on Mobile Port
  Use the following command to enable/disable allowed/denied logic on Mobile Port:
  116-Mobile Port-Code-#*
  Where,
  Mobile Port is from 1 to 4.

Code	Meaning
0	Disable
1	Enable

  By default, allowed-denied logic on all Mobile Ports is enabled.

  Use the following command to enable/disable allowed/denied logic on all Mobile Ports:
  116-*-Code-#*

- To assign allowed number list to Mobile Port
  Use the following command to assign an allowed number list to a Mobile Port:
  113-Mobile Port-Number List-#*
  Where,
  Mobile Port is from 1 to 4.
  Number List is from 01 to 16.
  By default, Number List 01 is assigned to the Mobile Port.

  Use the following command to assign an allowed number list to all the Mobile Ports:
  113-*-Number List-#*

- To assign denied number list to Mobile Port
  Use the following command to assign a denied number list to a Mobile Port:
  114-Mobile Port-Number List-#*
  Where,
  Mobile Port is from 1 to 4.
  Number List is from 01 to 16.
  By default, Number List 06 is assigned to the Mobile Port.

  Use the following command to assign denied number list to all the Mobile Ports:
  114-*-Number List-#*

Relevant Topics:

1. “Jeeves” 64
2. “Number Lists” 82
3. “Port Parameters-FXS” 85
4. “Port Parameters-Mobile” 94

Automatic Number Translation

Automatic Number Translation feature translates the number dialed by the user to the number that is understood by the Mobile network. This feature is applicable to the mobile port.

For this feature to work, SE should program two number lists viz., dialed number list and substitute number list and assign the same to the desired Mobile port. Now whenever the user dials a number, system will check the dialed number list:

- If the dialed number matches the number string programmed in the dialed number list, SIMADO GFX44 will translate the dialed number string into the corresponding substitute number string programmed in substitute number list and out-dials the same.
- If the dialed number does not match any number string programmed in the dialed number list then SIMADO GFX44 will dial out the same number.

Let us take an example to understand this feature:
Suppose user dials 952668263172 from the telephone instrument connected to the FXS port of the gateway since he is habituated to dial numbers in this way on the POTS network. Gateway routes this call through Mobile port to the desired destination. But the Mobile network does not understand the dialed number string. Instead it expects the user to dial +912668263712. Automatic Number Translation feature does this.

To accomplish this, SE should program 95 in dialed number list and +91 in the corresponding substitute number list. Doing so, whenever the user dials number string starting with digits 95, ANT will translate it to +91 and then will route the call to the desired destination number.

Automatic Number Translation feature is also useful for Multi-Stage Dialing through mobile port. (Refer “Multi-Stage Dialing” for more details)

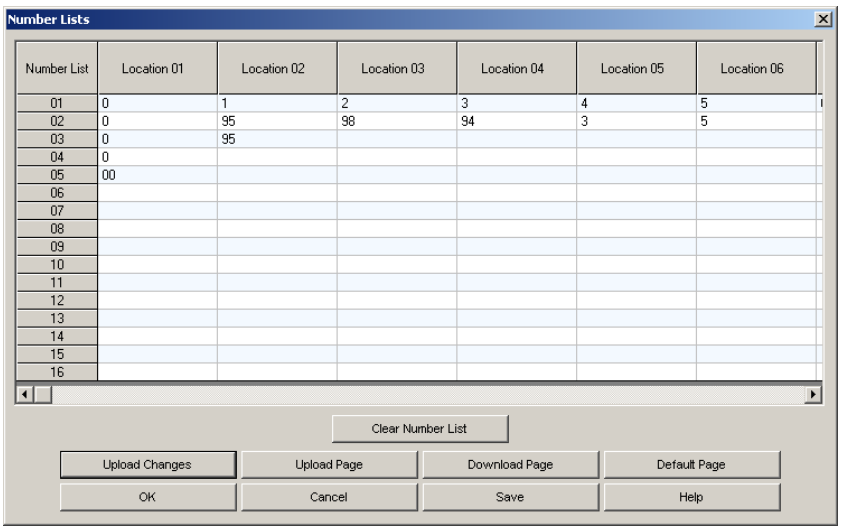
How to Program?

This feature can be enabled/disabled on each mobile port. ANT logic will apply to the port only if ANT is enabled on that port.

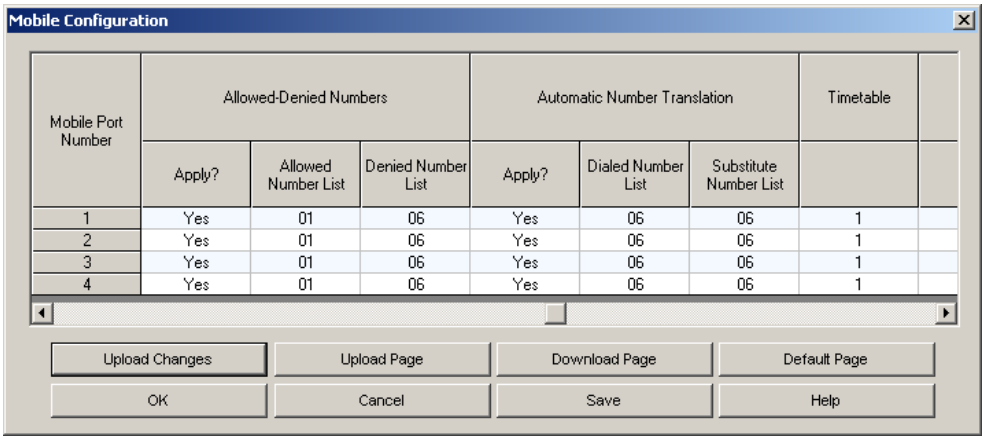
Programming using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)

- Open 'Main Menu' page and log in to Jeeves. Click the '**Number Lists**' button.



- Program dialed numbers and substitute numbers in different number lists for all Mobile Ports.
- Click the 'Mobile Configuration' button and go to '**Automatic Number Translation**' column.



- Program Automatic Number Translation Table as shown below:
  - **Apply?** Select 'No' in this field if you do not want to apply Automatic Number Translation logic to the Mobile Port. ***By default, it is set to 'Yes'.***
  - **Dialed Number List:** Assign number list of dialed numbers in this field for each Mobile Port. ***By default, number list 06 is assigned to all Mobile Ports.***
  - **Substitute Number List:** Assign number list of substitute numbers in this field for each Mobile Port. ***By default, number list 06 is assigned to all Mobile Ports.***

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

For programming the Number Lists
(Refer "Number Lists" feature for programming number lists)

- To enable/disable automatic number translation logic on Mobile Port:
  Use the following command to enable/disable automatic number translation logic on Mobile Port:
  126-Mobile Port-Code-#*
  Where,
  Mobile Port is from 1 to 4.

Code	Meaning
0	Disable
1	Enable

  By default, automatic number translation logic on all Mobile Ports is enabled.

  Use the following command to enable/disable automatic number translation logic on all Mobile Ports:
  126-*-Code-#*

- To assign a dialed number list to Mobile port/s:
  Use the following command to assign a dialed number list to a Mobile Port:
  123-Mobile Port-Number List-#*
  Where,
  Mobile Port is from 1 to 4.
  Number List is from 01 to 16.

By default, Number List 06 is assigned to the Mobile Port.

Use the following command to assign a dialed number list to all the Mobile Ports:
123-*-Number List-#*

- To assign substitute number list to Mobile Port/s:
  Use the following command to assign a substitute number list to a Mobile Port:
  124-Mobile Port-Number List-#*
  Where,
  Mobile Port is from 1 to 4.
  Number List is from 01 to 16.
  By default, Number List 06 is assigned to the Mobile Port.

  Use the following command to assign a substitute number list to all the Mobile Ports:
  124-*-Number List-#*

Relevant Topics:

1. “Jeeves” 64
2. “Multi-Stage Dialing” 75
3. “Number Lists” 82
4. “Port Parameters-Mobile” 94

BCCH Locking

BCCH Locking feature enables you to lock the Mobile Port of SIMADO GFX44 to a particular cell or channel or BTS (Base Transceiver Station) for various reasons such as:

- better network availability,
- minimum call drop due to bad signal/ network failure, etc.

This feature is supported when SIMCOM-2G engine (SIM340-B01 or later) or SIMCOM-3G engine (Version V1.18 or later) or Wavecom-2G module is installed in SIMADO GFX44.

How it Works?

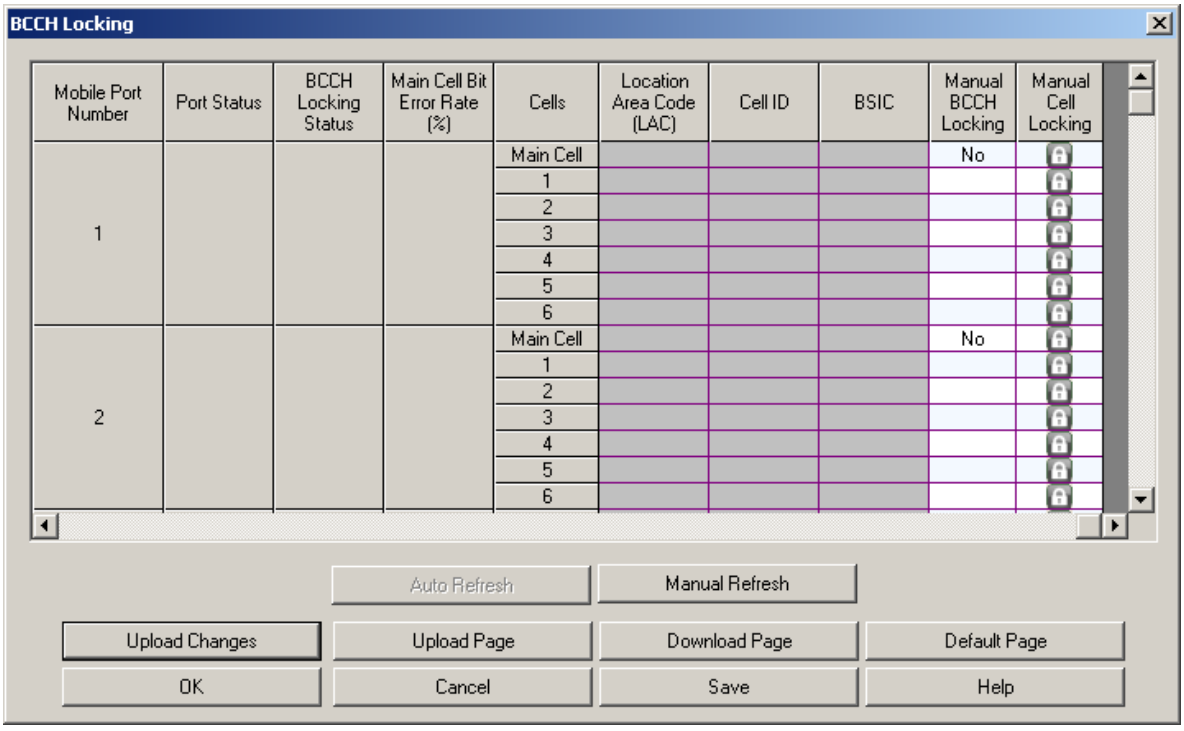
In GSM network, each BTS is assigned one particular channel called as ARFCN (Absolute Radio Frequency Channel Number), which is transmitted by BTS in BCCH (Broadcast Control Channel). Now, when SIMADO GFX44 is switched on, the Mobile Port gets registered with the network on a particular BTS which has the highest signal strength. However the signal strength is not consistent i.e. it keeps on fluctuating and this might result in call drop or bad voice quality.

Therefore, to avoid this, SIMADO GFX44 enables you to lock the Mobile Port to a particular cell or channel manually after checking Signal Strength and Signal Quality of each cell.

How to Lock Mobile Port to a Cell?

You can lock Mobile Port to a cell or a channel only through Jeeves.

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)
- Open 'Main Menu' page and log in to Jeeves.
- Click the 'Mobile Port- BCCH Locking' button. Mobile Port-BCCH Locking window will open.



- **Port Status:** Status of Mobile Port is displayed in this field. Different possible status options are described in the table below:

STATUS	DESCRIPTION
Disabled	Displayed when Mobile Port is disabled.
GSM Initialization	Displayed when GSM module is in initialization state i.e. before SIM detection.
SIM Absent	Displayed when SIM Card is not detected by the system.
SIM PIN wrong	Displayed when wrong SIM PIN is issued.
SIM PUK required	Displayed when SIM PUK is required.
Registering	Displayed when the Mobile Port is in registration process with the Network.
Idle	Displayed when the Mobile Port is registered with the Network and it is free.
Busy	Displayed when any active call is present on the Mobile Port.

- **BCCH Locking Status:** BCCH Locking status is displayed in this field. Different possible status options are described in the table below:

STATUS	DESCRIPTION
Trying to Lock	Displayed when user selects Manual BCCH Locking as 'No' from 'Yes' and module is in initialization process after system or module restart.
Trying to lock on BCCH xxxx	Displayed when BCCH Locking is selected as Manual and the Mobile Port is in the registration process with the Network. xxxx is the BCCH selected by the user for locking the cell.
Manually Locked on BCCH xxxx	Displayed when BCCH Locking is selected as Manual and Mobile Port is successfully registered with the Network. xxxx is the BCCH selected by the user for locking the cell.
Auto Locked on BCCH xxxx	Displayed when BCCH Locking is selected as Auto and Mobile Port is successfully registered with the Network. xxxx is the BCCH of the Main Cell. xxxx is updated as per the changes in the Main Cell's BCCH.

- **Main Cell-Bit Error Rate (%):** Bit Error Rate of the Main Cell is displayed in this field. Bit Error Rate (BER) is the percentage of received bits on a digital link that are in error relative to the number of bits received. Bit Error Rate is calculated from the received signal quality.

- **Cells:** Indicates the cells with which the Mobile Port can be locked. You can decide to lock the Mobile Port with a particular cell after considering the following cell related parameters:

  - **BCCH (Broadcast Control Channel):** In this field, the BCCH value of the cell is displayed. BCCH defines the frequency channel number.

  - **Received Level:** In this field, the received signal strength level of the cell is displayed. It is average received signal strength of the cell. Its value ranges from -110 dBm to -47 dBm.

  - **MCC-MNC:** In this field, MCC-MNC of a cell is displayed. Mobile Country Code (MCC) is a three digit number uniquely identifying a country and Mobile Network Code (MNC) is either a two or three digit number used to identify a given network from within a specific country.

- **LAC (Location Area Code):** In this field, LAC (Location Area Code) is displayed. LAC uniquely identifies a location area within a GSM PLMN (Public Land Mobile Network). The maximum length of LAC is 16 bits ranging from 0 to 65535. LAC is displayed in hexadecimal characters for SIMCOM-2G and Wavecom-2G engines which ranges from 0000 to FFFF. For SIMCOM-3G engine, LAC is displayed in decimal digits which ranges from 00000 to 65535.

- **Cell ID:** In this field, Cell Id is displayed. It is a 16-bit identifier that identifies the cell. Cell ID is displayed in hexadecimal characters for SIMCOM-2G and Wavecom-2G engines which ranges from 0000 to FFFF. For SIMCOM-3G engine, Cell ID is displayed in decimal digits which ranges from 00000 to 65535.

- **BSIC (Base Station Identification Code):** In this field, BSIC (Base Station Identification Code) is displayed. BSIC allows a mobile station to distinguish between different neighboring base stations. BSIC is three digit value ranging from 0 to 255.

- **Manual BCCH Locking:** ***By default, manual BCCH locking is set to 'No'.*** When manual BCCH locking is set to 'No', Mobile Port gets locked to the cell as per the highest signal strength. Select 'Yes' in this field to lock the Mobile Port to the particular cell selected by the user.

- **Manual Cell Locking- Lock Button:** Click this button to lock Mobile Port to a particular cell. When you click the Lock button, a dialog box with the message: "Mobile Port will get registered with the selected cell. Do you want to continue?" appears on the screen. Two buttons, 'Yes' and 'No' are provided. Select 'Yes' to lock the Mobile Port to the selected cell.

- **Auto Refresh Button:** ***By default, Auto Refresh button is enabled.*** When user clicks Auto Refresh button, BCCH Locking page is refreshed automatically and all its parameters are downloaded automatically after every 15 seconds.

- **Manual Refresh Button:** ***By default, Manual Refresh button is disabled.*** When user clicks Manual Refresh button, BCCH Locking page will not refresh automatically. In this case, user should download the page manually using "Download Page" button.

Suppose SIMADO GFX44 is installed in roaming area, where more than one network is available, say X and Y. Mobile Network Selection is set to Manual mode and first priority is programmed as X and second priority is programmed as Y. Now, suppose the Mobile Port gets registered with X network and after registration, user locks the Mobile Port to one of the cell of X network. After registration, if module or system restart or gets deregistered from network, module starts registration process again. While re-registering, SIMADO GFX44 tries to lock Mobile Port to the last selected cell of X network. If X network is unavailable then the Mobile Port will not get registered with the network.

Solution: *In this situation, user shall set manual BCCH locking mode to 'No' to register Mobile Port with the suitable network automatically. Later on, user can change manual BCCH locking mode to 'Yes' and lock the Mobile Port to the desired cell after assessing the cell information.*

Relevant Topic:

1. “Mobile Port Status” 72

Call Detail Record (CDR)

SIMADO GFX44 enables you to generate call detail records either by issuing commands or through Jeeves. Call Detail Record feature enables SE to generate report of call records to obtain information such as call originating port, call terminating port, calling party number, called party number, call duration etc. It is desirable for an organization to generate such reports for various reasons such as cost control, security and privacy.

A call is stored in the buffer as soon as it is matured. CDR reports can be generated for both Mobile and FXS port. Call Detail Record feature is used to generate report of call details such as:

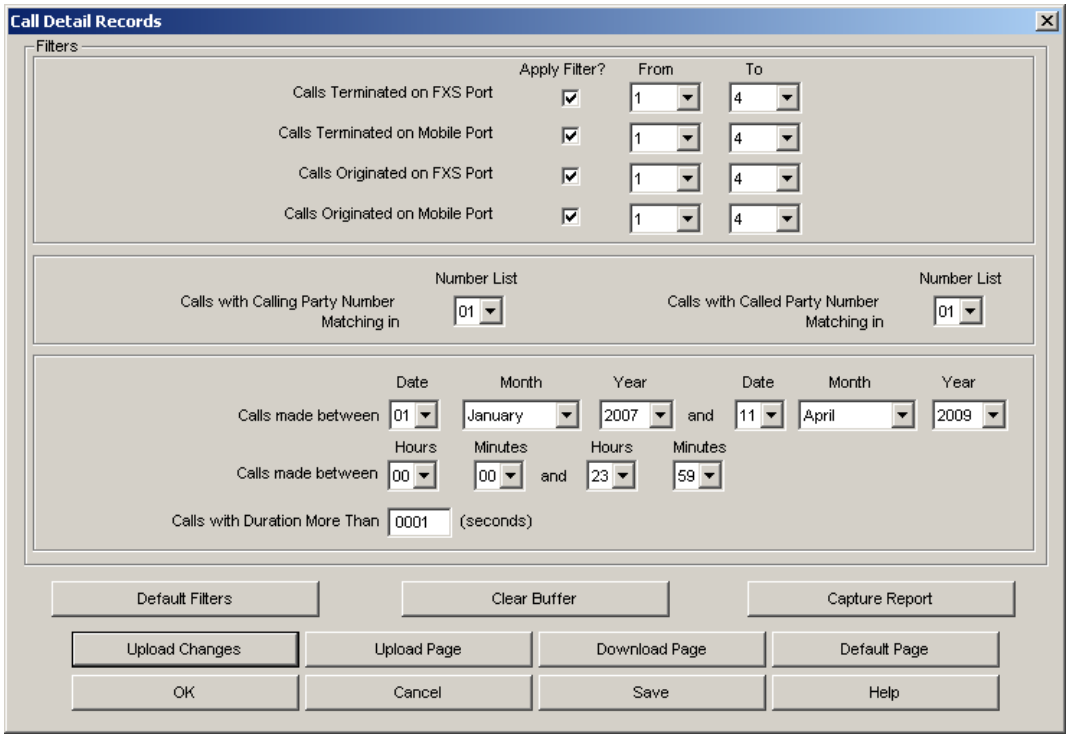
- Call originating port
- Call terminating port
- Calling party number
- Called party number
- Date of call
- Time of call
- Duration of call

Call duration range is from 1 second to 9999 seconds. In call buffer, the duration of call will be stored as 9999 seconds if the call duration is of more than 9999 seconds and it will be stored as 0001 second if the call duration is of less than 1 second.

How to Program?

Programming using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer "Programming SIMADO GFX44")
- Login into the Jeeves by clicking the 'Login' button on the main menu of the Jeeves. Select COM Port and enter SE Password in the respective fields. Click the 'Login' button.
- Click the '**Call Detail Records**' button on the Main menu. Call Detail Records window will open.



- Program following parameters on the page:
  - **Calls terminated on FXS Port:** Click the 'Apply Filter?' flag to enable report generation of calls terminated on FXS Port. Select the range of FXS Port in 'From' and 'To' fields.
  - **Calls terminated on Mobile Port:** Click the 'Apply Filter?' flag to enable report generation of calls terminated on Mobile Port. Select the range of Mobile Port in 'From' and 'To' fields.
  - **Calls originated on FXS Port:** Click the 'Apply Filter?' flag to enable report generation of calls originated on FXS Port. Select the range of FXS Port in 'From' and 'To' fields.
  - **Calls originated on Mobile Port:** Click the 'Apply Filter?' flag to enable report generation of calls originated on Mobile Port. Select the range of Mobile Port in 'From' and 'To' fields.

  Using this feature, it is also possible to filter call details like calls made to specific numbers, calls received from specific numbers, calls with specific duration etc. and generate the report of the same. To set such filters using Jeeves, program the following parameters:
  - **Calls with calling party number matching in number list:** Select the desired number list in this field. This filter will help SE to generate report of the calls made from the numbers programmed in the selected number list.
  - **Calls with called party number matching in number list:** Select the desired number list in this field. This filter will help SE to generate report of the calls made to the numbers programmed in the selected number list.
  - **Calls made between:** Select the dates in this field. This filter will help SE to generate report of the calls made between the selected dates.
  - **Calls made between:** Select the time in this field. This filter will help SE to generate report of the calls made between the time programmed in this field.
  - **Calls with duration more than XX (seconds):** Program time duration of call in this field. This filter will help SE to generate report of the calls having duration more than the specified time duration.

- Click the '**Capture Report**' button. 'Save as' window will appear on the screen. Select appropriate location and give appropriate file name to create a file for capturing CDR report. Click the 'Save' button to capture report. A notepad file of CDR report will be created. Now open the report that is saved in your computer and check.

- Click the '**Clear Buffer**' button to clear the call buffer stored in SIMADO GFX44. Following alert message will appear on the screen: "This option will clear the entire buffer in SIMADO GFX44. Do you wish to continue?" Yes/ No. Click the 'Yes' button, SE Password window will appear, enter reverse SE password and click the 'Ok' button. Buffer stored in the system will be cleared.

- Click the '**Default Filters**' button to set default values to all the filters. An alert message, "Do you wish to update this command in GFX44 now?" will appear on the screen. Yes/ No. Click the 'Yes' to effect the changes.

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To start/stop CDR report
  Use the following command to start/stop CDR report:
  131-Code-#*
  Where,

Code	Meaning
0	Abort Report
1	Start Report

  By default, CDR Report Code is 0.

- To clear the CDR buffer
  Use the following command to clear the CDR buffer:
  150-Reverse SE Password-#*

- To enable/disable the filter setting for calls terminated on FXS port:
  Use the following command to enable/ disable the filter setting for calls terminated on FXS port:
  141-Code-#*
  Where,

Code	Meaning
0	Disable
1	Enable

  By default, Filter setting for calls terminated on FXS port is enabled.

- To enable/disable the filter setting for calls terminated on mobile port:
  Use the following command to enable/disable the filter setting for calls terminated on mobile port:
  142-Code-#*
  Where,

Code	Meaning
0	Disable
1	Enable

  By default, Filter setting for calls terminated on Mobile port is enabled.

- To enable/disable the filter setting for calls originated from FXS Port:
  Use the following command to enable/disable the filter setting for calls originated from FXS Port:
  143-Code-#*
  Where,

Code	Meaning
0	Disable
1	Enable

  By default, Filter setting for calls originated on FXS port is enabled.

- To enable/disable the filter setting for calls originated from Mobile Port:
  Use the following command to enable/disable the filter setting for calls originated from Mobile Port:
  144-Code-#*
  Where,

Code	Meaning
0	Disable
1	Enable

  By default, filter setting for calls originated on Mobile port is enabled.

  Using this feature, it is also possible to filter call details like calls made to specific numbers, calls received from specific numbers, calls with specific duration etc. Commands to program various call filters are shown below:

Type of Filter	Command
To set filter to print all calls terminated on FXS port	***132-FXS Port-FXS Port-#****
To set filter to print all calls terminated on Mobile port	***133-Mobile Port-Mobile Port-#****
To set filter to print all calls originated from FXS port	***134-FXS Port-FXS Port-#****

Type of Filter	Command
To set filter to print all calls originated from Mobile port	***135-Mobile Port-Mobile Port-#****
To set filter to print all calls from to date	***136-DD-MM-YYYY-DD-MM-YYYY-#****
To set filter to print all calls between time	***137-HH-MM-HH-MM-#****
To set filter to print all calls (Called Party Number) matching the Number list	***138-Number List-#* (Default = 01)***
To set filter to print all calls (Calling Party Number) matching the Number list	***139-Number List-#* (Default = 01)***
To set filter to print all calls with call duration more than or equal to specified	***140-Seconds-#* (Default = 01)***
To set default filters	***149-#****

Where,
FXS Port is from 1 to 4.
Mobile Port is from 1 to 4.
DD is from 01 to 31.
MM is from 01 to 12.
YYYY is from 2007 to 2099.
HH is from 00 to 23.
MM is from 00 to 59.
Number list is from 01 to 16.
Seconds is from 1 to 9999.
Default Filters for CDR are All FXS Ports, All Mobile Ports, Date from 01-01-2007 to Current Date, Time 00:00 to 23:59, Caller Number List 01, Called Number List 01 and Duration more than 1 second.
By default, CDR report is Blank.

- *You will get CDR report with header and footer even if CDR buffer is empty.*
- *You will get message, 'No records found' if the buffer is empty.*
- *CDR records will be stored in the system permanently after 5 minutes (approx.).*

Relevant Topics:

1. “Communication Port” 48
2. “Jeeves” 64
3. “Know your SIMADO GFX44” 3

CALL DETAIL RECORDS REPORT as on 15-Jun-2011 at 13:00:02

Source Port : FXS : 1 To 4, MOB : 1 To 4
Destination Port : FXS : 1 To 4, MOB : 1 To 4
NUM LIST : Called - 01 Calling - 01
DATE : 15-Jun-2011 To 15-Jun-2011
DUR(sec) : 1 TIME : 00:00 To 23:59

SR.	S-PORT	D-PORT	CALLED NUMBER	CALLING NUMBER	DATE	TIME	DUR
1	MOB 2	FXS 2		+919898572368	15-Jun-2011	12:11:26	10
2	FXS 1	MOB 1	9724341592		15-Jun-2011	12:11:15	9
3	MOB 1	FXS 3		+919724341592	15-Jun-2011	12:12:00	10
4	FXS 2	MOB 2	9898572368		15-Jun-2011	12:11:49	10
5	MOB 2	FXS 4		+919724341603	15-Jun-2011	12:12:47	8
6	FXS 3	MOB 3	9724341592		15-Jun-2011	12:12:36	8
7	FXS 4	MOB 4	9724341603		15-Jun-2011	12:13:15	7
8	MOB 3	FXS 1		+919974098917	15-Jun-2011	12:13:26	8
9	MOB 1	FXS 2		+919898991823	15-Jun-2011	12:13:58	14
10	FXS 1	MOB 3	9724341592		15-Jun-2011	12:14:51	2
11	MOB 2	FXS 3		+919724341603	15-Jun-2011	12:15:02	3
12	MOB 4	FXS 1		+919898572368	15-Jun-2011	12:16:06	7
13	FXS 4	MOB 1	9974098917		15-Jun-2011	12:15:56	6

Matrix SIMADO GFX44 V1R18 Page: 01

Call Minutes

Mobile Service providers offer various schemes to its customers. One of the scheme which most service providers offers to its customers is to provide first few minutes free every month. SIMADO GFX44 supports Call Minutes feature on Mobile Port to utilize the benefit of this scheme.

Let us understand this feature with the help of an example:
Suppose SIMADO GFX44 is installed in a company. The service provider offers first 1000 minutes free every month. It is desirable that all the outgoing calls are made using free minutes offered by the service provider. To use this feature, enable Call Minutes and program the free minutes allowed for Mobile Port. Now whenever user makes outgoing calls through mobile port, it will not be charged. The free call minutes programmed for the Mobile Port will be used.

When these free minutes are consumed, SIMADO GFX44 provides two options to the user.

1. **Block Outgoing Calls:** If this option is set then SIMADO GFX44 will not allow outgoing calls from that mobile port after the free minutes allocated to the port are utilized.
2. **Alert and allow Outgoing Calls:** If this option is set, SIMADO GFX44 will indicate to the user that the free minutes are about to be exhausted through LED[1] indication and also by playing alert tone before dialing a number on the Mobile Port.

   The alert tone and the LED indication will begin when 20 free minutes are remaining and will continue until free minutes are added again. All calls made after utilization of the free call minutes will be charged as per the charges set by the service provider.

SIMADO GFX44 maintains total minutes usage of Mobile Port. When outgoing call is made through the Mobile Port, system will update its 'Minutes Used Counter' simultaneously. While counting call minutes, the fraction of last minute is rounded up to complete one minute. For example, if the call duration is of 3 minutes and 56 seconds, it is rounded up as 4 minutes in the system.

SIMADO GFX44 provides flexibility to reset minutes used either manually or automatically. If scheduled reset is enabled then call minutes counter will reset automatically at the programmed date. In case of manual reset, SE will have to manually reset the call minutes counter.

- *The free call minutes will not be utilized when emergency numbers are dialed.*
- *Minute Used Counter is not cleared in case of power failure. SIMADO GFX44 will retain the last updated value before power failure when the system is switched on.*

You can program and check status of Call Minutes by issuing commands as shown below.

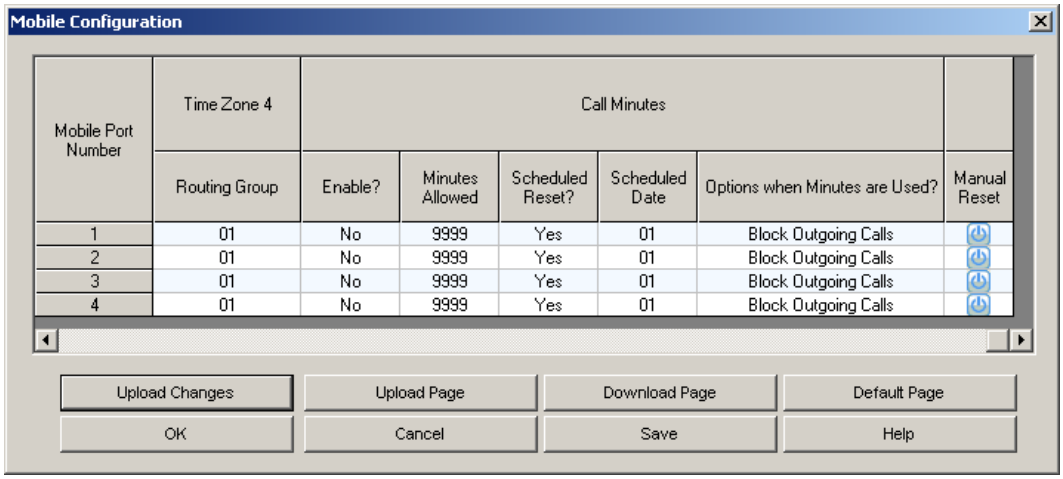
How to Program?

Programming Using Jeeves

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)
- Open 'Main Menu' page and login in to Jeeves.

1. *'RDY' LED is used for indicating Call Minutes. Refer LED table in “Switching ON SIMADO GFX44” topic for more details.*

- Click the '**Mobile Configuration**' button. Mobile Configuration window will open as shown below. Go to Call Minutes column and program the following parameters:



- **Enable?:** Select 'Yes' to enable this field if your service provider offers free minutes to call. ***By default, it is set to 'No'.***

- **Minutes Allowed:** Program free minutes allowed by your service provider for each Mobile Port in this field. Minutes allowed can be in the range of 0000 to 9999. ***By default, it is set to 9999 for all Mobile Ports.***

- **Scheduled Reset?:** By default, this option is set to 'Yes'. Select 'No' in this field if you do not want to reset call minutes allowed and minutes used automatically in SIMADO GFX44 at a scheduled date.

- **Scheduled Date:** Program date in this field on which you want to reset the minutes allowed and minutes used counter in SIMADO GFX44. Range of this field is 01 to 31. ***By default, it is set to 01.***

- **Options when Minutes are Used?:** SIMADO GFX44 provides two options for outgoing calls after free minutes offered by the service provider is used up. These options are:

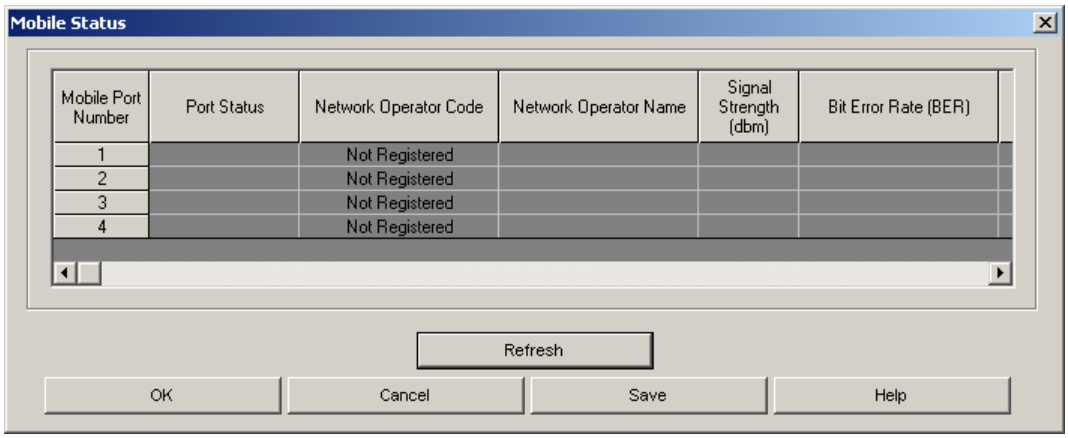
  - **Block Outgoing Calls:** If this option is selected, SIMADO GFX44 will not allow any outgoing calls after the free minutes are utilized.

  - **Alert and Allow Outgoing Calls:** If this option is selected, SIMADO GFX44 will allow outgoing calls after notifying the user that the free call minutes are utilized. In this case, all calls made after utilizing free minutes are charged as per the regular charges of the service provider.

  By default, Block Outgoing Calls option is selected.

- **Manual Reset:** Use this button to reset call minutes allowed and used manually in SIMADO GFX44.

You can also check total free minutes allowed to each mobile port and free minutes utilized by each port using Jeeves. Click 'Mobile Status'. The following window will open.



- Minutes Allowed column display the value programmed as 'Minutes Allowed' for each Mobile Port.
- Minutes Used column display the free minutes utilized by each Mobile Port from the total minutes allowed.

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To Enable/Disable Call Minutes feature:
  Use the following command to enable/disable call minutes feature for a Mobile Port:
  311-Mobile Port-Flag-#*
  Where,
  Mobile Port is from 1 to 4.

Flag	Meaning
0	Disable
1	Enable

  By default, Call Minutes feature is disabled for all Mobile Ports.

  Use the following command to enable/disable call minutes feature for all Mobile Ports:
  311-*-Flag-#*

- To program 'Minutes Allowed' for a Mobile Port:
  Use the following command to program Minutes Allowed (for free calling) for a Mobile Port:
  312-Mobile Port-Minutes Allowed-#*
  Where,
  Mobile Port is from 1 to 4.
  Minutes allowed can be of maximum four digits. Valid digits are 0 to 9. Valid range is from 0000 to 9999.
  By default, minutes allowed for all mobile ports are 9999.

  Use the following command to program Minutes Allowed (for free calling) for all Mobile Ports:
  312-*-Minutes Allowed-#*

- To Enable/Disable Scheduled Reset for Call Minutes feature:
  Use the following command to enable/disable Scheduled Reset for a Mobile Port:
  313-Mobile Port-Flag-#*

Where,
Mobile Port is from 1 to 4.

Flag	Meaning
0	Disable
1	Enable

By default, Scheduled Reset is enabled for all Mobile Ports.

Use the following command to enable/disable Scheduled Reset for all Mobile Ports:
313-*-Flag-#*

- To program Date for Scheduled Reset:
  Use the following command to program the date for Scheduled Reset for a Mobile Port:
  314-Mobile port-Date-#*
  Where,
  Mobile Port is from 1 to 4.
  Date can be of two digits. Valid dates are from 01 to 31.
  By default, date is set to 01 for all Mobile ports.

  Use the following command to program the date for Scheduled Reset for all Mobile Ports:
  314-*-Date-#*

- To program SIMADO GFX44 for further action when 'Minutes Used' is equal to or greater than Minutes Programmed:
  Use the following command to program the option when Minutes Used is equal to or greater than Minutes programmed:
  316-Mobile Port-Option-#*
  Where,
  Mobile Port is from 1 to 4.

Option	Meaning
1	Block Outgoing Calls
2	Alert and Allow Outgoing Calls

By default, SIMADO GFX44 will 'Block Outgoing Calls' when minutes used is equal to or greater than minutes programmed.

Use the following command to program the option when Minutes Used is equal to or greater than Minutes programmed for all Mobile Ports:
316-*-Option-#*

- To Reset Minutes Manually:
  Use the following command to reset Minutes manually for a Mobile Port:
  315-Mobile Port-#*
  Where,
  Mobile Port is from 1 to 4.

  Use the following command to reset Minutes manually for all Mobile Ports:
  315-*-#*

- To Display Minutes Used on the telephone instrument:
  Use the following command to display the Minutes Used on the telephone instrument:
  317-Mobile Port-#*
  Where,
  Mobile Port is from 1 to 4.

Issue above command to display the minutes used on your telephone instrument, you will get confirmation tone. Go On-Hook, your phone will ring and Minutes Used will be displayed on the LCD of your telephone instrument.

If FSK CLI is set on the FXS Port of SIMADO GFX44 then the Minutes Used will be displayed in the format as shown below:

Number field: 0050
Name field: Minutes Used

When DTMF CLI is set on the FXS Port of SIMADO GFX44, only the numbers will be displayed as follows:

Number field: 0050

Relevant Topic:

1. “Port Parameters-Mobile” 94

Call Proceeding Tone

In GFX44, when the user dials a number from the telephone instrument connected to the FXS port of the gateway, it gets routed through one of the mobile port as per the programming done. Sometimes due to silence generated by the mobile network the user might think that the call is disconnected and thus hang up. To avoid silence received from the Mobile network while making a call, call proceeding tone feature has been added.

Call proceeding tones are the signaling tones generated by the system or network to inform the user of the call establishment in GSM network. SIMADO GFX44 supports two types of call proceeding tones viz., Network tone and SIMADO tone.

How it works?

When the call is routed to the Mobile port, the originating port can be connected to a tone generator (SIMADO tone) or to the Mobile network.

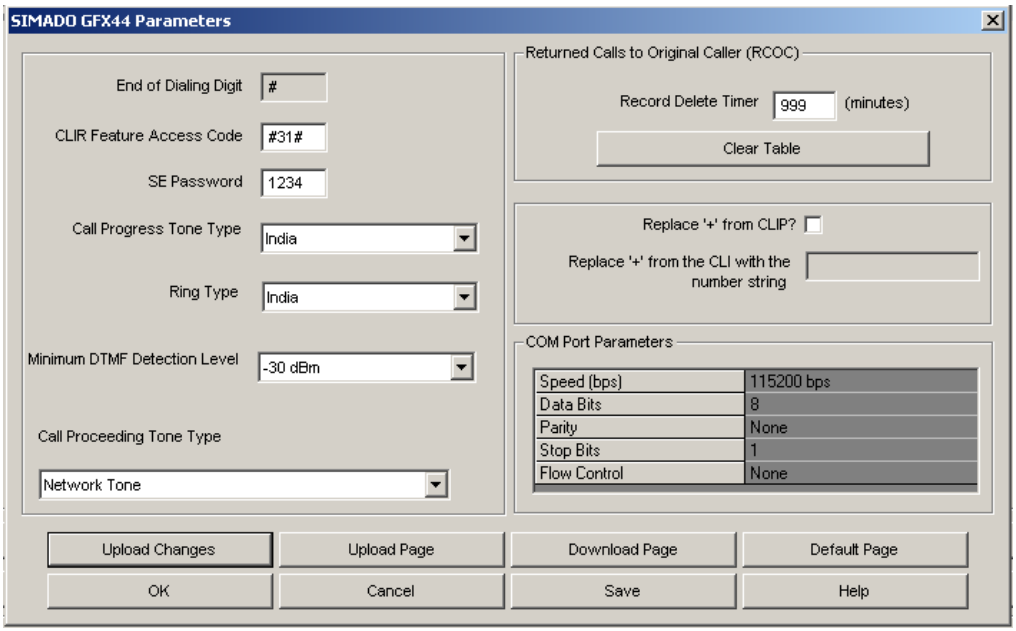
If the originating port is connected to the Mobile network immediately on end of dialing, the user will listen to the tone received from the Mobile network whereas if he is connected to the Feature tone generator, the user will get feature tone till a Call Progress Message is received from the Mobile network.

On receipt of first Call Progress Message, the originating port is connected to the terminating port.

How to Program?

Programming using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)
- Open 'Main Menu' page and log in to Jeeves.
- Click the '**SIMADO GFX44 Parameters**' button. SIMADO GFX44 Parameters window will open.



- Select call proceeding tone in 'Call Proceeding Tone Type' field. You can select either Network tone or SIMADO Tone. ***By default, 'Network Tone' is selected.***

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To set Call Proceeding Tone for mobile port:
  Use the following command to set call proceeding tone for mobile port:
  277-Call Proceeding Tone-#*
  Where,

Call Proceeding Tone	Meaning
1	SIMADO Tone
2	Network Tone

  By default, Call proceeding Tone is the Network Tone.

Relevant Topics:

1. “Call Progress Tones” 42
2. “Jeeves” 64
3. “Multi-Stage Dialing” 75

Call Progress Tones

Call Progress Tones (CPT) are audible tones sent from switching systems such as PSTN or PBX or from the network to the calling parties to show the status of phone calls, like dial tone, error tone, busy tone, etc. Each tone has a distinctive tone frequency and cadence assigned to it, for which some standards have been established.

SIMADO GFX44 supports following types of Call Progress Tones:

Dial Tone:

- It is played when FXS Port goes Off-Hook.
- It is played when an incoming call on Mobile Port is answered by SIMADO GFX44.

Ring Back Tone:

- It is played when the number is dialed by the user and the telephone connected to the destination port starts ringing.

Busy Tone:

- It is played when the called party is busy on another call.

Error Tone:

- It is played when the user execute some invalid operation or try to access denied features.
- It is played when an invalid command is entered in programming mode.
- It is played when FXS Port is disabled and FXS Port user goes Off-Hook.
- It is played when user is dialing a number on Mobile Port and the network is lost.

Programming Tone:

- It is played when the user is in programming mode and is waiting for the SE to enter the programming command.
- It indicates that the system is responding to the programming activity.

Confirmation Tone:

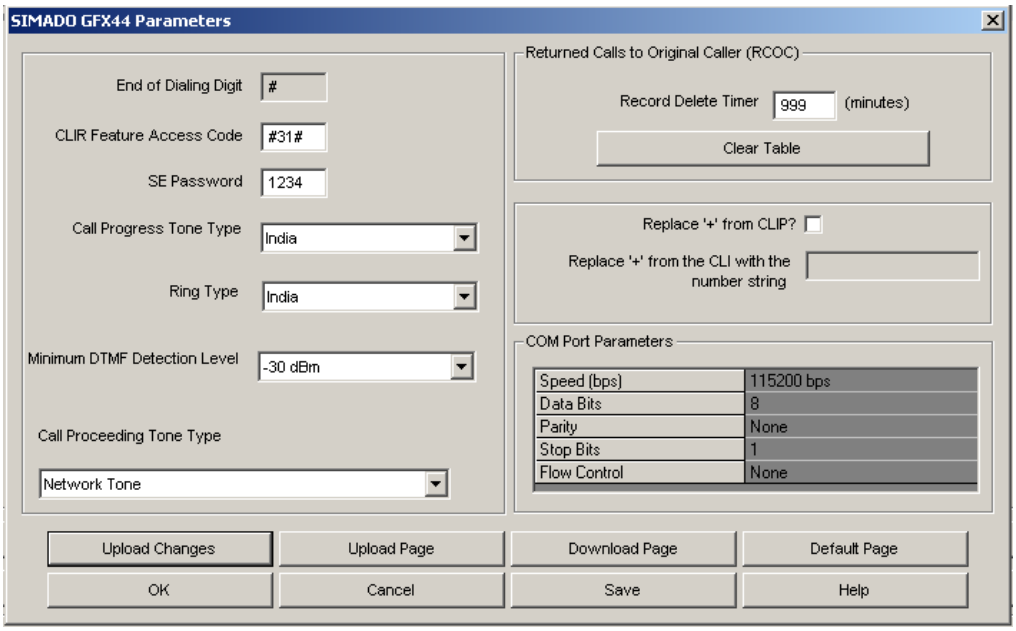
- It is played when a valid command is issued in programming mode and it is successfully executed.

GFX44 supports CPTG standards of the countries mentioned in the table given at the end of this topic:

Programming using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)
- Open 'Main Menu' page and log in to Jeeves.

- Click the '**SIMADO GFX44 Parameters**' button. SIMADO GFX44 Parameters window will open.



- Select country in which GFX44 is installed in 'Call Progress Tone Type' field.

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To program call progress tones for a specific country:
  Use the following command to program CPT for a specific country:
  281-Code-#*
  Where,

Code	Country	Dial Tone		Ring Back Tone		Busy Tone		Error Tone		Confirmation Tone		Prog. Tone	
		Freq.	Cadence	Freq.	Cadence	Freq.	Cadence	Freq.	Cadence	Freq.	Cadence	Freq.	Cadence
		Hz	second	Hz	second	Hz	second	Hz	second	Hz	second	Hz	second
01	Australia	425*25	cont.	400*25	0.4on 0.2off 0.4on 2.0off	425	0.375on 0.375off	425	0.375on 0.375off	400	0.1on 0.1off	400	0.1on 0.9off
02	Argentina	425	cont.	425	1.0on 4.0 off	425	0.3on 0.2off	425	0.3on 0.4off	400	0.1on 0.1off	400	0.1on 0.9off
03	Belgium	425	cont.	425	1.0on 3.0off	425	0.5on 0.5off	425	0.167on 0.167off	400	0.1on 0.1off	400	0.1on 0.9off
04	Brazil	425	cont.	425	1.0on 4.0 off	425	0.25on 0.25off	425	0.25on 0.25 off	400	0.1on 0.1off	400	0.1on 0.9off
05	China	450	cont.	450	1.0on 4.0off	450	0.35 on 0.36off	450	0.7on 0.7off	400	0.1on 0.1off	400	0.1on 0.9off
06	Egypt	425*50	cont.	425*50	2.0on 1.0off	425*50	1.0on 4.0off	450	0.5on 0.5off	400	0.1on 0.1off	400	0.1on 0.9off
07	France	440	cont.	440	1.5on 3.5off	440	0.5on 0.5off	440	0.25on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off
08	Germany	425	cont.	425	1.0on 4.0off	425	0.48on 0.48off	425	0.24on 0.24off	400	0.1on 0.1off	400	0.1on 0.9off
09	Greece	425	0.2on 0.3off 0.7on 0.8off	425	1.0on 4.0off	425	0.3on 0.3off	425	0.15on 0.15off	400	0.1on 0.1off	400	0.1on 0.9off
10	India	400*25	cont.	400*25	0.4on 0.2off 0.4on 2.0off	400	0.75on 0.75off	400	0.25on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off

Code	Country	Dial Tone		Ring Back Tone		Busy Tone		Error Tone		Confirmation Tone		Prog. Tone	
		Freq.	Cadence	Freq.	Cadence	Freq.	Cadence	Freq.	Cadence	Freq.	Cadence	Freq.	Cadence
		Hz	second	Hz	second	Hz	second	Hz	second	Hz	second	Hz	second
11	Indonesia	425	cont.	425	1.0on 4.0off	425	0.5on 0.5off	425	0.25on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off
12	Iran	425	cont.	425	1.0on 4.0off	425	0.5on 0.5off	425	0.25on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off
13	Israel	400	cont.	400	1.0on 3.0off	400	0.5on 0.5off	400	0.25on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off
14	Italy	425	cont.	425	1.0on 4.0off	425	0.5on 0.5off	425	0.2on 0.2off	400	0.1on 0.1off	400	0.1on 0.9off
15	Japan	400	cont.	400*20	1.0on 2.0off	400	0.5on 0.5off	400	0.25on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off
16	Kenya	425	cont.	425	0.67on 3.0off 1.5on 5.0off	425	0.2on 0.6off 0.2on 0.6off	425	0.2on 0.6off	400	0.1on 0.1off	400	0.1on 0.9off
17	Korea	350+440	cont.	440+480	1.0on 2.0off	480+620	0.5on 0.5off	480+620	0.3on 0.2off	400	0.1on 0.1off	400	0.1on 0.9off
18	Malaysia	425	cont.	425	0.4on 0.2off 0.4on 2.0off	425	0.5on 0.5off	425	0.5on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off
19	Mexico	425	cont.	425	1.0on 4.0off	425	0.25on 0.25off	425	0.25on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off
20	New Zealand	400	cont.	400+450	0.4on 0.2off 0.4on 2.0off	400	0.5on 0.5off	400	0.25on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off
21	Phillippines	425	cont.	425+480	1.0on 4.0off	480+620	0.5on 0.5off	480+620	0.25on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off
22	Poland	425	cont.	425	1.0on 4.0off	425	0.5on 0.5off	425	0.5on 0.5off	400	0.1on 0.1off	400	0.1on 0.9off
23	Portugal	425	cont.	425	1.0on 5.0off	425	0.5on 0.5off	450	0.33on 1.0off	400	0.1on 0.1off	400	0.1on 0.9off
24	Russia	425	cont.	425	0.8on 3.2off	425	0.4on 0.4off	425	0.25on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off
25	Saudi Arabia	425	cont.	425	1.2on 4.6off	425	0.5on 0.5off	425	0.25on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off
26	Singapore	425	cont.	425*24	0.4on 0.2off 0.4on 2.0off	425	0.75on 0.75off	425	0.25on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off
27	South Africa	400*33	cont.	400*33	0.4on 0.2off 0.4on 2.0off	400	0.5on 0.5off	400	0.25on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off
28	Spain	425	cont.	425	1.5on 3.0off	425	0.2on 0.2off	425	0.25on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off
29	Thailand	400*50	cont.	400	1.0on 4.0off	400	0.5on 0.5off	400	0.3on 0.3off	400	0.1on 0.1off	400	0.1on 0.9off
30	Turkey	450	cont.	450	2.0on 4.0off	450	0.5on 0.5off	450	0.2on 0.2off 0.6on 0.2off	400	0.1on 0.1off	400	0.1on 0.9off
31	UAE	350+440	cont.	400+450	0.4on 0.2off 0.4on 2.0off	400	0.375on 0.375off	400	0.4on 0.35off 0.225on 0.525off	400	0.1on 0.1off	400	0.1on 0.9off
32	UK	350+440	cont.	400+450	0.4on 0.2off 0.4on 2.0off	400	0.375on 0.375off	400	0.4on 0.35off 0.225on 0.525off	400	0.1on 0.1off	400	0.1on 0.9off
33	USA/Canada	350+440	cont.	440+480	2.0on 4.0off	480+620	0.5on 0.5off	480+620	0.25on 0.25off	400	0.1on 0.1off	400	0.1on 0.9off

In above table, * refers to modulation of two frequencies (f1 and f2) and + refers to addition of two frequencies. Cont. is abbreviation for continuous.

By default, Code is 10 (India)

Relevant Topic:

1. “Jeeves” 64

Calling Line Identification Restriction (CLIR)

In normal situation, when user dials a mobile number then the mobile user will get CLI on his mobile instrument. However, many a times, SIMADO GFX44 user does not want to reveal his identity to the called party. To facilitate this, SIMADO GFX44 supports Calling Line Identification Restriction (CLIR) feature on the Mobile Port. CLIR feature enables its users to hide their identity and make anonymous calls.

- *To use this feature, you must get CLIR facility enabled from your service provider. If your service provider does not support CLIR then this feature will not work even if it is enabled on the Mobile Port.*

SIMADO GFX44 supports two types of CLIR:

- **CLIR for all calls (Fixed):** SIMADO GFX44 enables its user to enable or disable CLIR for all calls.

- **CLIR on call basis:** SIMADO GFX44 enables its user to apply CLIR on selected calls using CLIR access code whenever desired. When user invokes CLIR for a call using access code, CLIR will be applied irrespective of whether CLIR is enabled or disabled for all calls.

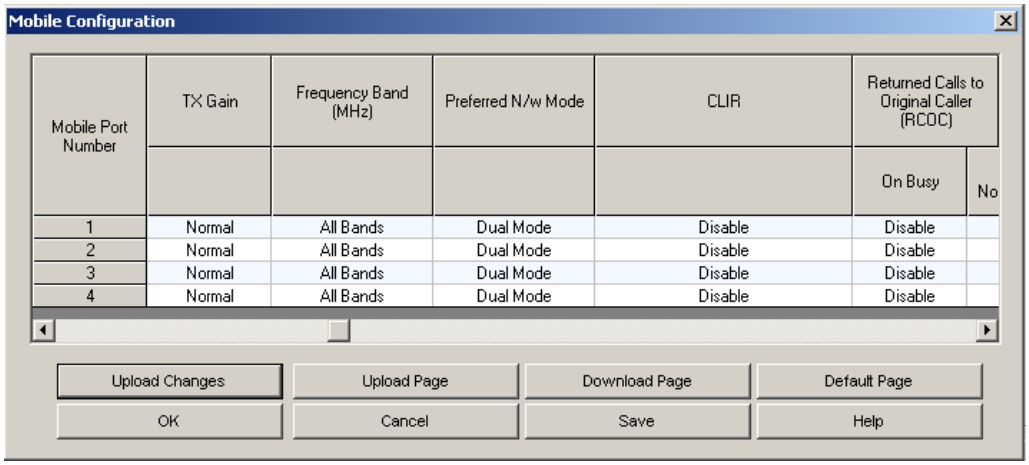
  To invoke CLIR for a selected call, user should dial CLIR access code before dialing the called party number. For example, to enable CLIR for 9925033046, user should dial #31#9925033046.

How to Program?

Programming using Jeeves:

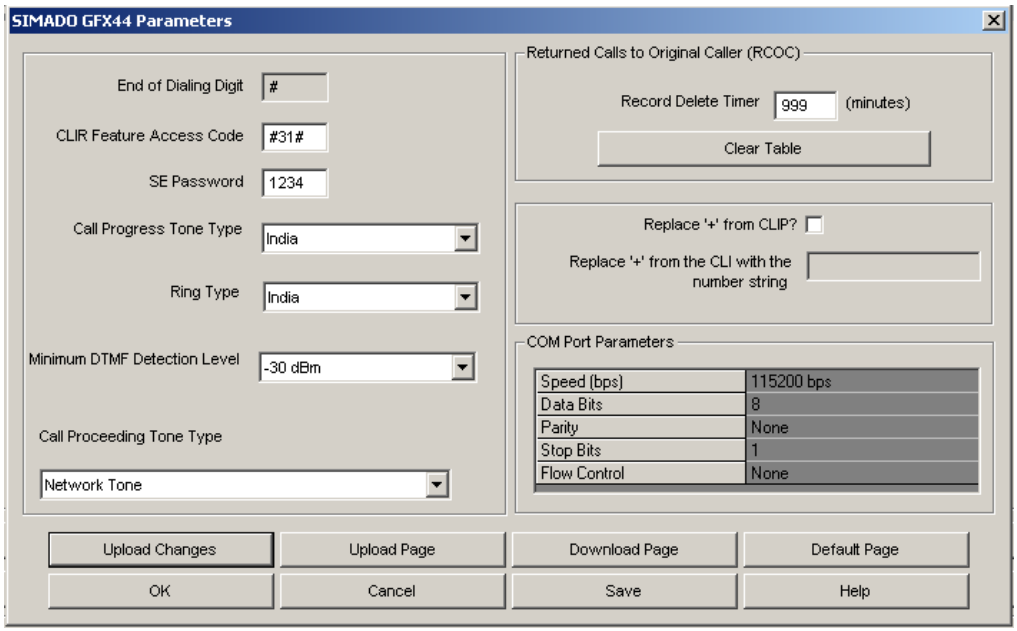
- Open Jeeves of SIMADO GFX44. (Refer "Programming SIMADO GFX44")

- In 'Main Menu' page, log in to Jeeves and click the '**Mobile Configuration**' button. Mobile Configuration window will open.



- **CLIR:** Enable this option if you want to apply CLIR on all calls. ***By default, it is disabled on all Mobile Ports.***

- Click the '**SIMADO GFX44 Parameters**' button. SIMADO GFX44 Parameters window will open.



  - **CLIR Feature Access Code:** Program CLIR access code in this field. User can use this access code to invoke CLIR for desired calls. ***By default, CLIR Feature Access Code is #31#.***

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To enable/disable CLIR on the Mobile Port:
  Use the following command to enable/disable CLIR on the Mobile Port:
  285-Mobile Port-Code-#*
  Where,
  Mobile Port is from 1 to 4.

Code	Meaning
0	CLIR Disable
1	CLIR Enable

  By default, CLIR is disabled on all Mobile Ports.

- To program Access Code for CLIR:
  Use the following command to program CLIR Access Code:
  110-Access Code-#*
  Where,
  Access Code can be of maximum 4 digits. Valid digits are 0-9, # and *.
  By default, Access Code of CLIR is #31#.

  Use the following command to clear CLIR access code:
  110-#*

Relevant Topic:

1. "Port Parameters-Mobile" 94

Communication Port

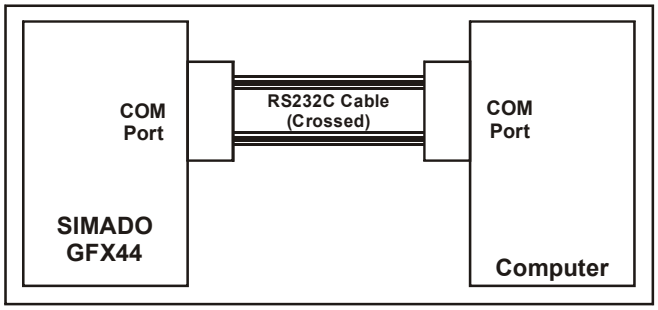
Communication Port of GFX44 is used for following purpose:

- To generate Call Detail Records report on the computer.
- To generate Debug report on the computer.
- For programming the system through Jeeves.

SE can use communication port for any one of the above application at a time. For e.g. if SE is taking debug report and tries to program the system using Jeeves at the same time, he will get error when he tries to log in to Jeeves.

How to use it?

Connect the communication port of GFX44 with the communication port of the computer using a crossed communication cable provided with the system as shown in the figure given below:



Following attributes are used for the system and are not programmable:

Baud Rate	115200bps
Stop Bit	1
Parity	Mark
Data Bits	8
Flow Control	None

Following table gives the pin details of the COM Port used in SIMADO GFX44:

Pin No.	Signal Name
1	NC
2	Receive Data (RXD)
3	Transmit Data (TXD)
4	Data Terminal Ready (DTR)
5	Ground (GND)
6	Data Set Ready (DSR)
7	Request to Send (RTS)
8	Clear to Send (CTS)
9	NC

How to program?

SE can generate debug on the computer connected with GFX44 by issuing command as shown below.

- To start and stop the system debug:
  Use the following command to start and stop the system debug:
  309-Code-#*
  Where,

Code	Meaning
0	Disable
1	Enable

  By default, System debug code is 0.

When the 'System debug' is enabled, all call events except Mobile Port events will be logged in the system.

- To Start and Stop Mobile Port Debug:
  Use the following command to start and stop Mobile Port debug:
  279-Mobile Port-Code-#*
  Where,
  Mobile Port = 1 to 4.

Code	Meaning
0	Disable
1	Enable

  By default, Mobile Port debug code is 0.

- *This command will activate Mobile Port debug, provided the Mobile Port is enabled.*
- *System debug should be enabled for logging Mobile Port debug events.*
- *If Mobile Port debug is enabled then debug of all call events will be captured in the log*

Relevant Topics:

1. “Call Detail Record (CDR)” 30
2. “Know your SIMADO GFX44” 3
3. “Jeeves” 64

Date and Time

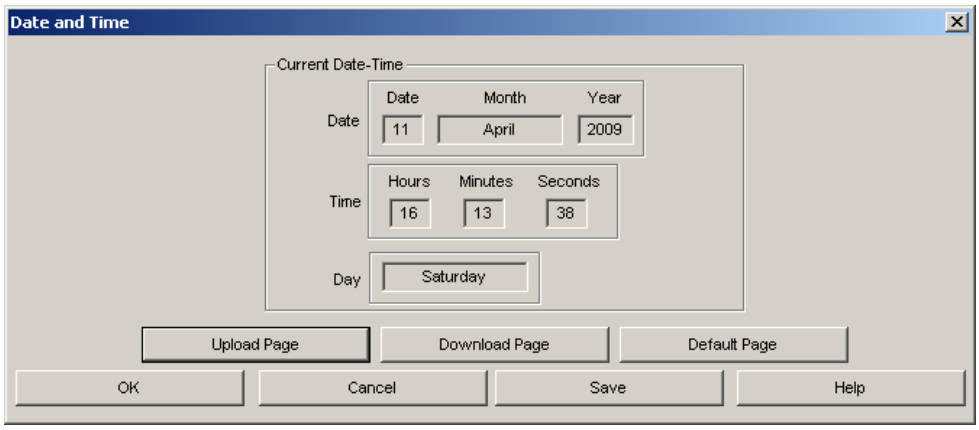
SIMADO GFX44 has its own Real Time Clock (RTC) to store the Date and Time. First set current date and time once before you start programming the system. Then it will update itself regularly. Various features like CDR, DST etc use date and time programmed in the system for its proper functioning. Thus, programming 'Date and Time', is one of the most important step in programming SIMADO GFX44.

How to Program?

Programming using Jeeves:

You cannot enter date and time manually in Jeeves and upload it to SIMADO GFX44. However, you can program date and time through Jeeves by following below steps:

- Open Jeeves of SIMADO GFX44. (Refer "Programming SIMADO GFX44")
- log in to Jeeves and click the '**Date and Time**' button. Date and Time window will open as shown below.



- Click the '**Upload Page**' button. Jeeves will upload computers' current date and time to SIMADO GFX44 and will display the same on the screen.
- Clicking the '**Download Page**' button will display the date and time of SIMADO GFX44 firmware on the Jeeves screen.
- Clicking the '**Default Page**' button will display the current date and time of the computer on the Jeeves screen.

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To program current Date:
  Use following commands to program the current date:
  296-DD-MM-YYYY-#*
  Where,
  DD= 01 to 31
  MM= 01 to 12
  YYYY=Year in four digits from 2007 to 2099
  By default, date is 01-01-2007.

- To program current Time:

Use the following command to program the current time:
297-HH-MM-YYYY-#*
Where,
HH= Hours from 00 to 23.
MM= Minutes from 00 to 59.
SS= Seconds from 00 to 59.
By default, time is 09:00:00.

- To program current day:
  Use the following command to program the current day:
  298-Day-#*
  Where,
  Day is ranging from 1 to 7.

Day	Meaning
1	Sunday
2	Monday
3	Tuesday
4	Wednesday
5	Thursday
6	Friday
7	Saturday

By default, Day is 2.

Date and Time Settings i.e. the RTC parameters will not change when you default the system.

Relevant Topics:

1. “Daylight Saving Time Adjustment” 52
2. “Port Parameters-FXS” 85
3. “Returned Calls to Original Callers (RCOC)” 105
4. “Time Table” 135

Daylight Saving Time Adjustment

Daylight Savings Time is the practice of advancing clocks so that the afternoons have more daylight and mornings have less. Typically clocks are adjusted forward by one hour near the start of spring and are adjusted backward in autumn. The start and end dates of DST vary with location and year.

DST should be programmed if SIMADO GFX44 is installed in the country where DST is observed. When DST is observed the time difference between countries in different time zone would also vary.

There are two ways to adjust DST:

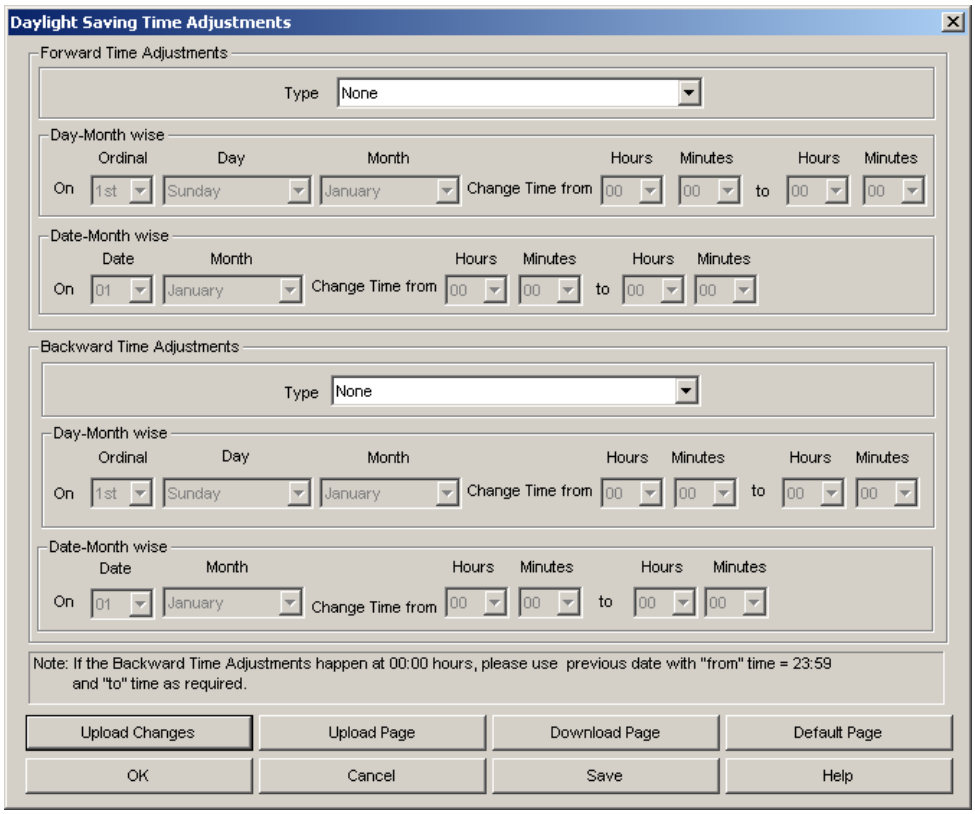
1. 'Day-Month wise' method: This method specifies a day of the month on which DST will start or end. For example, DST starting on 2nd Sunday of March and ending on 1st Sunday of November.

2. 'Date-Month wise' method: This method specifies a date of the month on which DST will start or end. For example, DST starting on 11th March and ending on 4th November.

How to Program?

Programming using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)
- Open 'Main Menu' page and log in to Jeeves.
- Click the '**Daylight Savings Time**' button and program the following parameters.



- **Forward Time Adjustments:** In 'Forward Time Adjustments', select the desired type of forward time adjustment to advance the time when DST starts. Select either 'Day-Month Wise' or 'Date-Month Wise' option. ***By default, Forward time adjustments type is 'None'.*** None is selected when the system is installed in the country where DST is not observed.

- If 'Day-Month wise' type of DST is selected then select the suitable option in each of the following combo boxes:
  - **Ordinal:** Select 1st, 2nd, 3rd, 4th or 5th day of the month as ordinal.
  - **Day:** Select a day from Sunday to Saturday as the day on which DST begins.
  - **Month:** Select a month from January to December in which DST begins.
  - **Change Time from:** This is the time when DST will begin to change. The time is in 24 hours format and valid range for hours is 00 to 23 and for minutes is 00 to 59.
  - **Change Time to:** The time to which DST is to be advanced. The time is in 24 hours format and valid range for hours is 00 to 23 and for minutes is 00 to 59.

- If 'Date-Month wise' type of DST is selected then select the suitable option in each of the following combo boxes:
  - **Date:** Select a date on which DST begins.
  - **Month:** Select a month from January to December in which DST begins.
  - **Change Time from:** This is the time when DST will begin to change. The time is in 24 hours format and valid range for hours is 00 to 23 and for minutes is 00 to 59.
  - **Change Time to:** The time to which DST is to be advanced. The time is in 24 hours format and valid range for hours is 00 to 23 and for minutes is 00 to 59.

- **Backward Time Adjustments:** Go to 'Backward Time Adjustments' and select the desired type of backward time adjustment to set the time back. Program Backward Time Adjustments in the same manner as Forward Time Adjustments.

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To select DST forward time adjustment type:
  Use the following command to select DST forward time adjustment type:
  321-DST Forward Time Adjustment Type-#*
  Where,

DST Forward Time Adjustment Type	Meaning
0	None
1	Day-Month wise
2	Date-Month wise

  By default, DST forward time adjustment type is 0.

- To program DST forward parameters for 'Day-Month wise' option:
  Use the following command to program DST forward parameters for 'Day-Month wise' option:
  322-Ordinal Number-Day-Month-Hour-Minute-Hour-Minute-#*
  Where,
  Ordinal Number is from 1st to 5th.
  Day is from 1 to 7 (Sunday is Day1 and Saturday is Day7)
  Month is from 01 to 12
  Hour is from 00 to 23
  Minute is from 00 to 59
  First Hour-Minute is for current time settings whereas second Hour-Minute is for time to which the clock should be forwarded to.
  By default, Ordinal Number is 1, Day is 1, Month is 01, Hour is 00 and Minute is 00.

  For e.g. In New Zealand, the DST starts on Last Sunday of October. The clock changes from 02:00 to 03:00. SE should issue following command to affect DST in New Zealand.

322-5-1-10-02-00-03-00-#*

For last Sunday (or other day) of the month, always set Ordinal Number = 5. For e.g. if the month has 4 Sundays in a particular calendar year then the last Sunday would be automatically the fourth one and if the month has 5 Sundays in a particular month then the last Sunday would automatically be the fifth one. While programming DST, it might not be known whether in a given year, the last Sunday would be fourth or fifth one. Hence program the Ordinal Number= 5 for all such cases.

- To Program DST forward parameters for 'Date-Month wise' option:
  Use the following command to program DST forward parameters for 'Date-Month wise' option:
  323-Date-Month-Hour-Minute-Hour-Minute-#*
  Where,
  Date is from 01 to 31, Month is from 01 to 12, Hour is from 00 to 23, Minute is from 00 to 59.
  By default, date is 01, Month is 01, Hour is 00 and Minute is 00.

  For e.g. In Cuba, the DST starts on 1st April of every year. The clock changes from 01:00 to 02:00. SE should issue following command to affect DST in Cuba.
  323-01-04-01-00-02-00-#*

- To select DST backward time adjustment type:
  Use the following command to select DST backward time adjustment type:
  324-DST backward Time Adjustment Type-#*
  Where,

DST Backward Time Adjustment Type	Meaning
0	None
1	Day-Month wise
2	Date-Month wise

  By default, DST backward time adjustment type is 0.

- To program DST backward parameters for 'Day-Month wise' option:
  Use the following command to program DST backward parameters for 'Day-Month wise' option:
  325-Ordinal Number-Day-Month-Hour-Minute-Hour-Minute-#*
  Where,
  Ordinal Number is from 1st to 5th.
  Day is from 1 to 7 (Sunday is Day1 and Saturday is Day7)
  Month is from 01 to 12
  Hour is from 00 to 23
  Minute is from 00 to 59
  First Hour-Minute is for current time settings whereas second Hour-Minute is for time to which the clock should be back-warded to.
  By default, Ordinal Number is 1, Day is 1, Month is 01, Hour is 00 and Minute is 00.

  For e.g. In New Zealand, the DST ends on Third Sunday of March. The clock changes from 03:00 to 02:00. SE should issue following command to affect DST in New Zealand.
  325-3-1-03-03-00-02-00-#*

- To Program DST backward parameters for 'Date-Month wise' option:
  Use the following command to program DST backward parameters for 'Date-Month wise' option:
  326-Date-Month-Hour-Minute-Hour-Minute-#*
  Where,
  Date is from 01 to 31, Month is from 01 to 12, Hour is from 00 to 23, Minute is from 00 to 59.
  By default, date is 01, Month is 01, Hour is 00 and Minute is 00.

For e.g. In Syria, the DST ends on 1st October of every year. The clock changes from 23:59 (midnight of 1st October) to 23:00. This means that DST should be changed on 30th September at 23:59 to 23:00. Following command should be issued to affect DST:
326-30-09-23-59-22-59-#*

The Day does not get changed by the system automatically while forwarding the clock or reverting back to normal. Hence, SE has to enter the current time and forward/backward the time keeping this aspect in mind. For e.g. In Chile, DST is advanced on Second Saturday of October from 00:00 to 01:00 i.e. on Second Saturday of October, the clock should be advanced from 00:00 to 01:00. SE should issue following command to affect this in the system: ***322-2-7-10-0000-0100-#****.

Relevant Topics:

1. “Date and Time” 50
2. “Time Table” 135

Emergency Number Dialing

Emergency Number Dialing feature enables user to call emergency services such as Ambulance, Fire Brigade, Police, etc. in adverse situations. SIMADO GFX44 facilitates dialing of emergency numbers through its Mobile Port. For dialing emergency number, the Mobile Port should be enabled.

Emergency number Dialing will not work if Mains power to SIMADO GFX44 fails.

How it Works

In System Firmware Version Earlier than V1R14:

While dialing out an emergency number, SIMADO GFX44 will check emergency number table first. If the dialed number matches the number programmed in the emergency number table then it will dial out that number even in following situations:

- When SIM is absent
- When SIM is invalid
- When wrong SIM PIN is entered
- When SIM is blocked
- When GSM module is not registered

When SIM is absent or SIM is invalid or wrong SIM PIN is entered or SIM is blocked, GSM module will consider only those numbers which are available in the GSM module as emergency numbers. By default, following emergency numbers are available in the GSM module: 000, 08, 112, 110, 911, 999 etc.

In System Firmware Version V1R14 and Later:

When SIMCOM-2G engine (SIM340-B01 or later) or SIMCOM-3G engine (Version V1.18 or later) is installed, SIMADO GFX44 will dial out only the numbers available in the Emergency Number Table as emergency numbers.

SIMADO GFX44 can dial out the numbers available in the emergency number table even in the following situations:

- When SIM is absent
- When SIM is invalid
- When wrong SIM PIN is entered
- When SIM is blocked
- When GSM module is not registered

How to Program

- You can program numbers of your choice in index numbers 1 and 2 of the Emergency Number Table.

You are recommended to program the numbers prevalent as Emergency Numbers in your region, in the Emergency Number Table.

- Numbers available in index numbers 3 to 5 are fixed i.e. they are non-programmable.

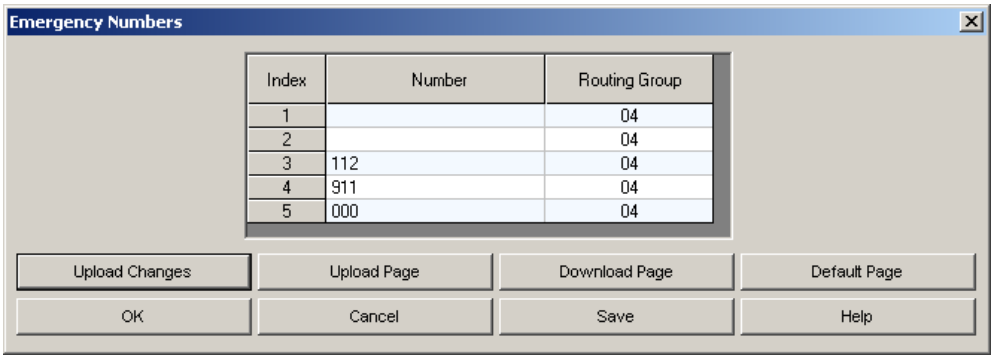
- You can program Routing Group for all five Emergency Numbers.

Default Emergency Number Table is as under:

Index	Emergency Number	Routing Group
1	Blank (Editable)	04
2	Blank (Editable)	04
3	112 (Un-editable)	04
4	911 (Un-editable)	04
5	000 (Un-editable)	04

Programming using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)
- On the 'Main Menu' page, log in to Jeeves and click the 'Emergency Numbers' button.



- Program emergency numbers in the 'Number' column of the emergency number table. You can program emergency numbers in first two indexes whereas entries in last three indexes are fixed i.e. non-programmable. Each number can be of maximum 3 digits. ***By default, first two indexes are kept blank.*** In last three indexes i.e. 3, 4 and 5, numbers 112, 911 and 000 are programmed respectively.
- Program the routing group in 'Routing Group' column for all Emergency Numbers. Emergency number will be dialed out using the routing group programmed in this column. SIMADO GFX44 supports 16 routing groups. ***By default, Routing Group 04 will be used for routing the emergency numbers programmed in the table.***

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To program Emergency Number in the emergency number table:
  Use the following command to program the emergency numbers in the emergency number table:
  233-Index-Emergency Number-#*
  Where,
  Index is from 1 to 2.
  Emergency number can be of maximum 3 digits. Digits 0-9 are allowed.
- Use the following command to clear emergency number at an index in the table:
  233-Index-#*
  Where,
  Index is 1 and 2.

- To assign Routing Group for an emergency number at an index:
  Use the following command to assign routing group to an emergency number at an index:
  234-Index-Routing Group-#*
  Where,
  Index is from 1 to 5.
  Routing Group is from 01 to 16.
  By default, Routing Group 04 is programmed for routing each emergency number.

- *SIMADO GFX44 does not check Allowed-Denied number lists and Automatic number translation table while dialing an emergency number.*

Relevant Topics:

1. “Programming SIMADO GFX44” 6
2. “Port Parameters-Mobile” 94
3. “Routing Group” 109

Fixed Dialing

SIMADO GFX44 supports 'Fixed Dialing' feature to avoid dialing of a frequently called number again and again from a specific port.

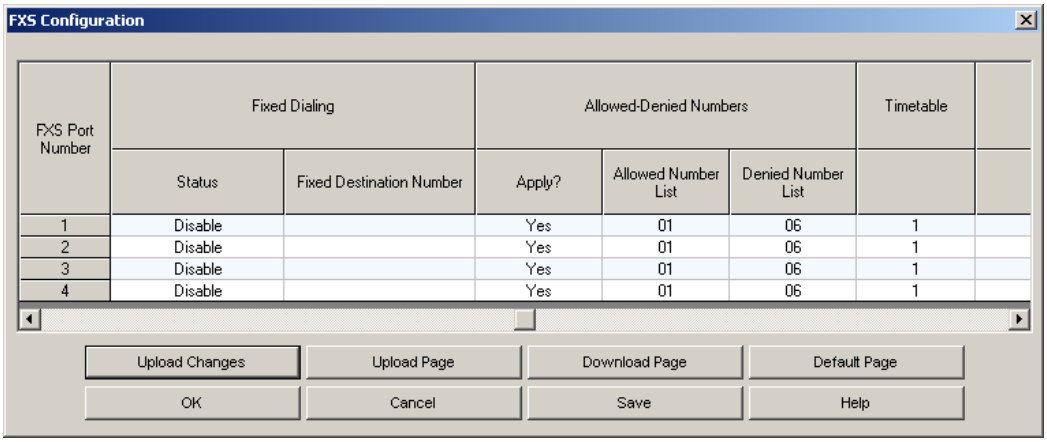
To use this feature, SE should enable the feature and program fixed destination number for FXS and Mobile Port on respective port configuration page. Also ensure that the routing type programmed is either 'Answer-Number Based' or 'Answer-Fixed'.

When fixed dialing is enabled on the port, SIMADO GFX44 dials out a number programmed in corresponding fixed destination number field after the expiry of first digit wait timer. This feature is applicable for both FXS and Mobile Port.

How to Program?

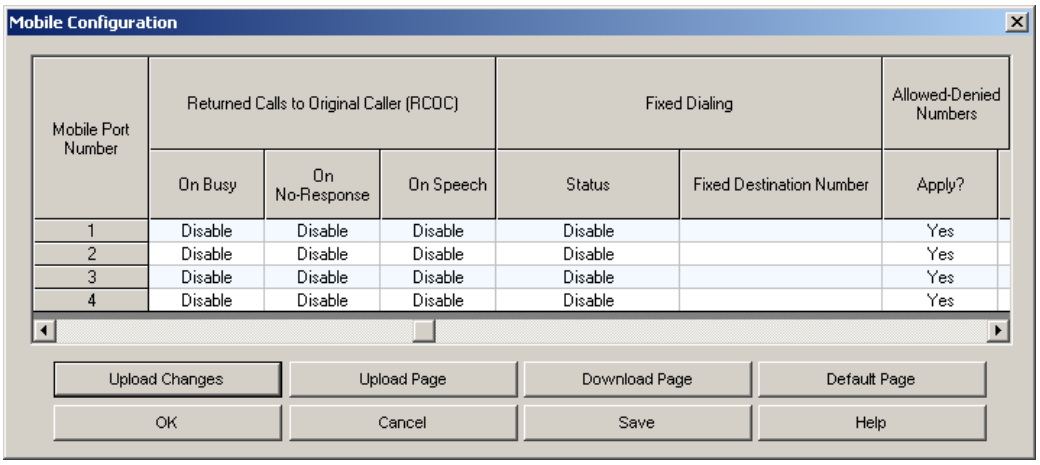
Programming using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)
- On the 'Main Menu' page, login into Jeeves.
- Click the '**FXS Configuration**' button and go to 'Fixed Dialing' column.



- **Status:** Select 'Enable' in this field to enable fixed dialing on the FXS Port. ***By default, it is disabled.***
- **Fixed Destination Number:** Program destination number in this field. Call will be routed to this destination number, if user does not dial any number before the expiry of first digit wait timer after going Off-Hook. ***By default, it is blank for all the FXS Ports.***

- Click the '**Mobile Configuration**' button and go to 'Fixed Dialing' column.



  - **Status:** Select 'Enable' in this field to enable fixed dialing on the Mobile Port. ***By default, it is disabled.***
  - **Fixed Destination Number:** Program destination number in this field. Call will be routed to this destination number, if user does not dial any number before the expiry of first digit wait timer after going Off-Hook. ***By default, it is blank for all the Mobile Ports.***

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To enable/disable fixed dialing on FXS Port:
  Use the following command to enable/disable fixed dialing on FXS Port:
  171-FXS Port-Code-#*
  Where,
  FXS Port is from 1 to 4.

Code	Meaning
0	Disable
1	Enable

  By default, fixed dialing is disabled on all ports.

  Use the following command to enable/disable fixed dialing on all FXS Ports:
  171-*-Code-#*

- To program Fixed Destination Number for Fixed Dialing on FXS Port:
  Use the following command to program fixed destination number for fixed dialing on FXS Port:
  172-FXS Port-Number String-#*
  Where,
  FXS Port is from 1 to 4.
  Number String is of 16 digits. Allowed digits are 0-9, #, *, A, B, C, D, F, P, W and +. (Refer table for programming special digits at the end of this topic)

  Use the following command to program fixed destination number for fixed dialing on all FXS Ports:
  172-*-Number String-#*

- To enable/disable fixed dialing on Mobile Port:
  Use the following command to enable/disable fixed dialing on Mobile Port:
  175-Mobile Port-Code-#*
  Where,
  Mobile Port is from 1 to 4.

Code	Meaning
0	Disable
1	Enable

  By default, fixed dialing is enabled on all ports.

  Use the following command to enable/disable fixed dialing on all Mobile Ports:
  175-*-Code-#*

- To program Fixed Destination Number for Fixed Dialing on Mobile Port:
  Use the following command to program fixed destination number for fixed dialing on Mobile Port:
  176-Mobile Port-Number String-#*
  Where,
  Mobile Port is from 1 to 4.
  Number String is of 16 digits. Allowed digits are 0-9, #, *, A, B, C, D, F, P, W and +.
  (Refer table for programming special digits at the end of this topic)

  Use the following command to program fixed destination number for fixed dialing on all Mobile Ports:
  176-*-Number String-#*

  Codes for programming the special digits such as A, B, C, D etc, is shown in the table given below:

Special Digits	Programming Codes
Flash (F)	#2
Pause (P)	#3
A	#4
B	#5
C	#6
D	#7
+	#1
#	##
*	**
W	*1
End of Programming Command	#*

Relevant Topics:

1. “Routing Type” 113
2. “Routing Group” 109

International Mobile Equipment Identity (IMEI)

Just like mobile handsets, each GSM module has an IMEI (International Mobile Equipment Identity) number printed on its GSM engine. International Mobile equipment Identity number is a unique 15 or 17 digit code used to identify an individual GSM module to a GSM network. When GFX44 is switched on, the IMEI code is transmitted and is verified in the network database called Equipment Identity Register (EIR).

IMEI number is useful in case SIMADO GFX44 is lost or stolen. When the GFX44 is lost or stolen, the network operator can block IMEI number of the GSM module installed in the gateway. Thus the important information stored in the gateway can be protected from being misused.

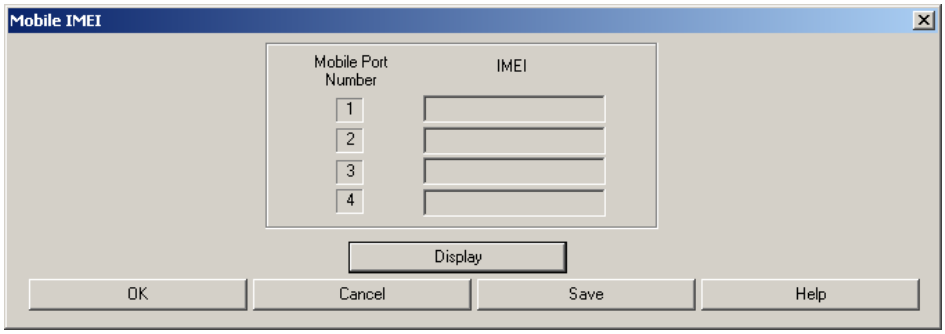
Currently used Structure of IMEI number is as follow:
AA-BBBBBB-CCCCCC-D
Where,
AA is Reporting Body Identifier, indicating the GSMA approved group that allocated the Type Allocation Code (TAC).
BBBBBB is the remainder of the TAC.
CCCCCC is serial sequence of the Model.
D is Luhn check digit of the entire model or 0. (This is an algorithm that validates the ID number)

How to Check IMEI/ESN Code?

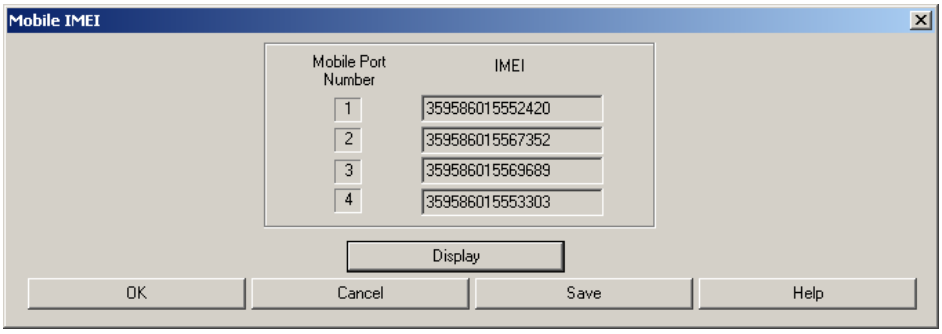
You can check IMEI/ESN code only through Jeeves.

To check IMEI/ESN Code using Jeeves:

- Open Jeeves of SIMADO GFX44 and open 'Main Menu' window. (Refer “Programming SIMADO GFX44”)
- log in to Jeeves and click the 'Mobile IMEI' button. Mobile IMEI window will open.



- Click the 'Display' button. IMEI download will take place. Download Completed window will appear after the IMEI number is downloaded into the Jeeves.



- Click the 'OK' button. You will be able to check the IMEI number of the GSM module installed in your system.
- Click the 'OK' button and save the changes.

Relevant Topics:

1. “Jeeves” 64
2. “Port Parameters-FXS” 85
3. “Port Parameters-Mobile” 94

Jeeves

SIMADO GFX44 provides facility to program the system using computer. Matrix provides a customized, windows based software known as Jeeves, in a CD along with the product. The Jeeves is a flexible and user-friendly tool with mouse operated GUI. You must install Jeeves into your computer to program the system using computer. SIMADO GFX44 also allows you to program the system even when the system is not connected to the computer i.e. you can program the system first using Jeeves software and then upload the configurations after connecting the system later on.

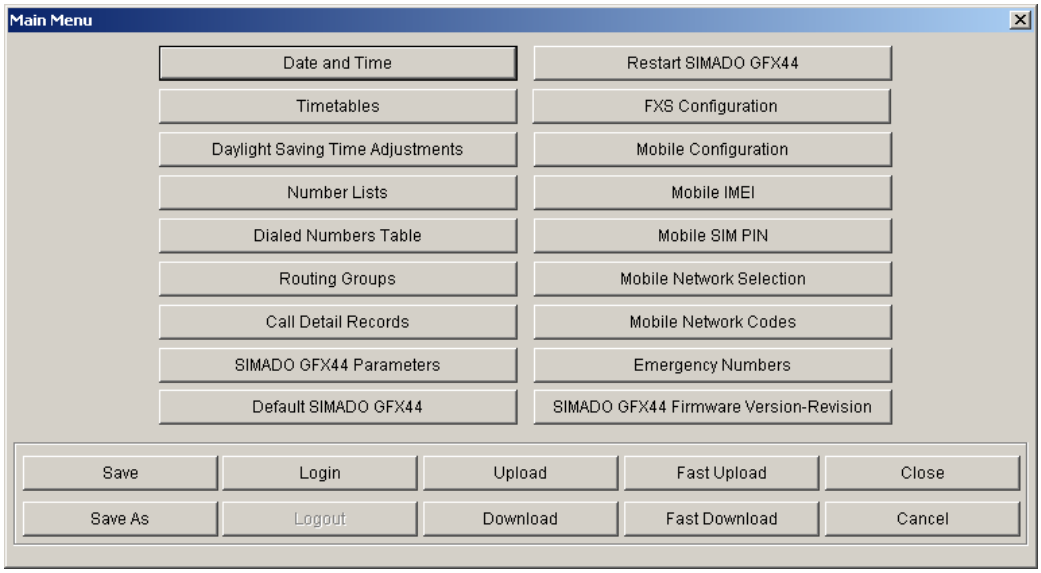
Installing Jeeves:

- Insert 'Matrix SIMADO GFX44' CD provided to you along with the product in the CD Drive of your computer. It is an auto-run CD.
- CD drive window will open. It contains two folders viz. 'Documents' and 'SIMADO GFX44 Jeeves VxRy'. (If CD does not open by itself, click the 'My Computer' → 'CD Drive' to explore the CD.
- Open 'SIMADO GFX44 Jeeves VxRy' folder. Run set-up to install the Jeeves into your computer.
- Connect your computer with the system using COM Port.
- Click the Start → Programs → Matrix → SIMADO GFX44 Jeeves VxRy. SIMADO GFX44 Serial Jeeves Home page will open.

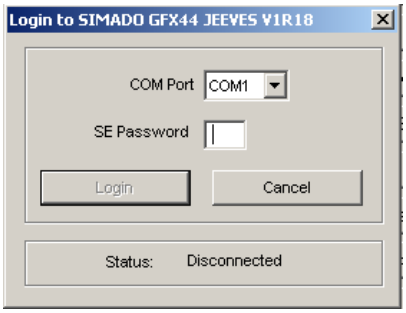
- There are three options on the home page of the Jeeves:
  - **File:** In File, click the 'New' to open Main menu of the Jeeves page. Click 'Open' to open the Jeeves configuration saved in your computer and click the Exit to close the Jeeves.
  - **Language:** In Language, seven different languages are displayed viz. English, Italian, Spanish, French, German, Portuguese and Russian. Select the language in which you want Jeeves content to be displayed.
  - **Help:** In Help, you will be able to access: 1) SIMADO GFX44 System Manual 2) SIMADO GFX44 Quick Start and 3) About Jeeves.

- Click the File → New, main menu of the Jeeves will open.

- On main menu page, links for various features is displayed.



- Click the 'Login' button → Select the COM Port in the 'COM Port' field → Enter default SE password 1234 in 'SE Password' field.



- Click the the given links one by one and program the parameters as per your requirement. (For detailed programming of all the features, refer respective feature in "Features of SIMADO GFX44" chapter.)
- Save the configurations in your computer and upload the same in SIMADO GFX44. Now SIMADO GFX44 is ready for use.

Each Jeeves Page consists of few buttons, which will help you in programming the system. Significance of each button is explained below:

Login Page

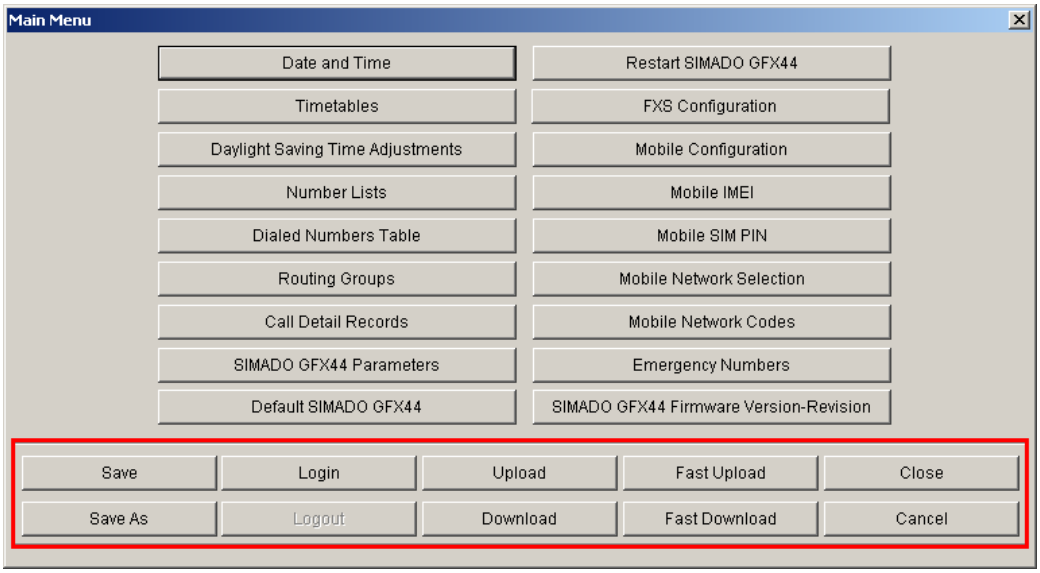
Login Page displays following buttons:

LOGIN: Click the 'Login' button to log in to Jeeves.

CANCEL: Click the 'Cancel' button to close Login window.

Main Menu Page

On main menu page, button for each feature is displayed. Click the all the buttons one by one to program the relevant feature. It also displays following buttons whose significance is explained below:



SAVE: Click the 'Save' button to save configurations done using Jeeves into your computer. When you click this button for the first time, a new configuration file will be created and saved in the computer. Then on every subsequent click the configuration of the JEEVES shall get saved in the same configuration file.

SAVE AS: Click the 'Save As' button to save the configurations done using Jeeves into your computer at different locations. With the help of this button you can create multiple configuration files and store the same at different locations in your computer.

LOGIN: Click the 'Login' button to log in to Jeeves of SIMADO GFX44 for programming the system. Login window will appear on the screen.

LOGOUT: Click the 'Logout' button to log out of the Jeeves after you finish programming of the system. Clicking the 'Logout' button will save the changes/programming done in SIMADO GFX44.

UPLOAD: Click the 'Upload' button to upload the configuration done in the Jeeves into the system. When you click the 'Upload' button, system will give alert message "SIMADO GFX44 configuration will be overwritten with the Jeeves configuration. This will take about 50 seconds, do you wish to continue?" Yes/ No. Click 'Yes' to upload the changes.

You can also use SIMADO GFX44 while uploading the Jeeves configuration to it.

DOWNLOAD: Click the 'download' button to download the system configuration to the Jeeves. When you click the 'download' button, alert message "Jeeves configuration will be overwritten with the SIMADO GFX44 configuration. This will take about 50 seconds, do you wish to continue?" will appear. Yes/ No. Click 'Yes' to download the changes.

You can also use SIMADO GFX44 while downloading configuration to the Jeeves.

FAST UPLOAD: Click the 'Fast Upload' button for quickly uploading the Jeeves configuration into the system. When you click the 'Fast Upload' button, following alert message will appear on the screen: "This option will restart GFX44. All ongoing conversations will be disconnected. SIMADO GFX44 configuration will be overwritten with the Jeeves configuration, do you wish to continue?" Yes/ No. Click the 'Yes' button and system configuration will be overwritten with the Jeeves configuration in few seconds.

Fast Uploading command will restart the system and all the ongoing conversations will be disconnected i.e. you will not be able to use SIMADO GFX44 when fast uploading process is going on.

FAST DOWNLOAD: Click the 'Fast download' button for quickly downloading the system configuration into the Jeeves. When you click the 'Fast download' button, following alert message will appear on the screen: "This option will restart GFX44. All ongoing conversations will be disconnected. Jeeves configuration will be overwritten with the SIMADO GFX44 configuration, do you wish to continue?" Yes/No. Click the 'Yes' button and Jeeves configuration will be overwritten with the system configuration in few seconds.

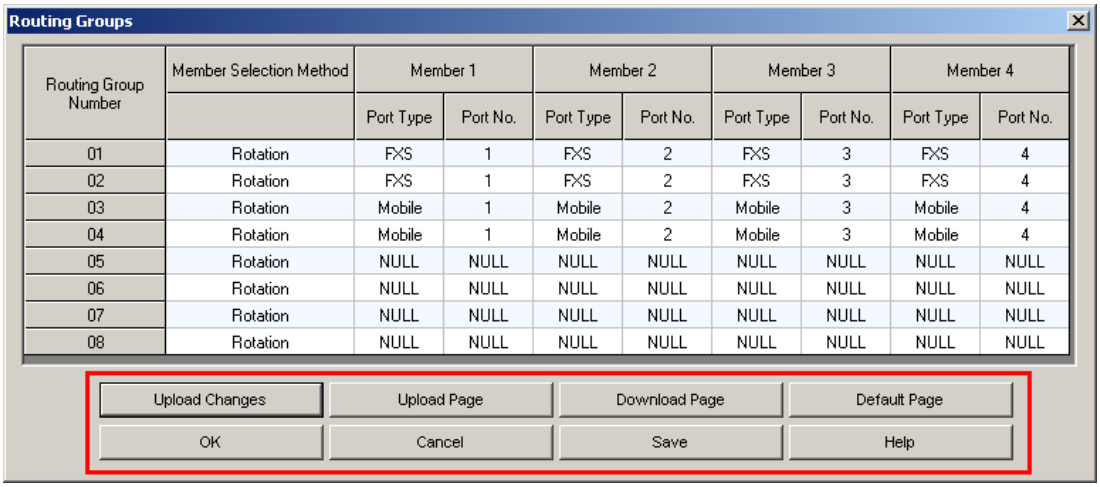
Fast downloading command will restart the system and all the ongoing conversations will be disconnected i.e. you will not be able to use SIMADO GFX44 when fast downloading process is going on.

CLOSE: Click the 'Close' button to exit from the 'Main Menu'. When you click 'Close' button, following message will appear: "Do you want to save changes made to Jeeves Configuration?" Yes/ No/Cancel. Click the 'Yes' button to save the changes done in the Jeeves configuration. Main Menu window will close.

CANCEL: Click the 'Cancel' button to exit from the 'Main Menu'. When you click 'Cancel' button, following message will appear: "Do you want to save changes made to Jeeves Configuration?" Yes/ No/ Cancel. Click the 'Yes' button to save the changes done in the Jeeves configuration. Main Menu window will close.

Features Page

On features page, following buttons are displayed. Significance of each button is explained below:



UPLOAD CHANGES: If you change a particular parameter or value in a feature and want to make the same changes in GFX44 then click the 'Upload Changes' button. Changes done will be uploaded to the system. This will upload only the parameters changed.

UPLOAD PAGE: If changes are done in particular feature of GFX44 then click the 'Upload Page' button and upload the changes in the system.
DOWNLOAD PAGE: If you want to download particular feature configurations into the Jeeves then click the 'Download Page' button on that feature page and make the required changes.

DEFAULT PAGE: Click the 'Default Page' button to default all the parameters of the feature displayed on that page. All the parameters will be assigned their default values.

OK: Click the 'OK' button, all the changes done in particular feature will be saved temporarily and the window will be closed.

CANCEL: Click the 'Cancel' button, all the changes done on a particular feature page will be lost and the feature window will be closed.

SAVE: Click the 'Save' button to save the Jeeves Configuration in your Computer. 'Save As' window will appear on the screen, select appropriate location and give appropriate file name to save the configuration file. Click the 'Save' button, configuration file will be saved to your computer.

HELP: Click the 'Help' button. SIMADO GFX44 System Manual will open. Refer relevant topic to obtain help.

Relevant Topics:

1. “Communication Port” 48
2. “Programming SIMADO GFX44” 6

Mobile Network Selection

At each power-ON, the SIM inserted in GFX44 will start searching for the network and will register automatically with the available network.

However, when GFX44 is installed in a remote hilly place or at a place where it is surrounded by multi-storied buildings then in such situation it might not register with the suitable network. Also when GFX44 is located in an area where more than one Network Operator is available, it is possible that the SIM card may register with another available network and result in 'Roaming' charges.

To avoid this, you must disable automatic network selection and program manual network selection. Before you enable manual network selection, you must program the Network Operator Priority Table. This table requires you to program the Network Operator Codes (MCC-MNC)[2] in order of priority for a Mobile Port. So, whenever you register with the network manually, the Mobile port (SIM) will send a query to the available GSM Network Operators, who in turn will respond to the query with their Network Operator Codes. The Mobile Port will then match the Network Operator Codes it receives with those in the priority table you have programmed, and select the Network Operator that matches in order of priority.

If the SIM card fails to register, it will restart the process of network selection on the expiry of the Network Registration Retry Timer. If no match is found, the Mobile port (SIM) will not get registered with any of the available network operators and no calls can be made or received on this port.

But in case user prefers to remain registered with any network operator and wants to make and receive calls at any cost then you must select automatic mode for network selection. In automatic mode, network is selected as per the field strength whereas in manual mode, network is selected as per the priority network codes programmed in the priority table.

Also program frequency band supported by the network operator's in your country. The Frequency Band supported by the GSM networks varies across countries. Therefore select the Frequency Band used by the GSM Service Provider(s) in the country where GFX44 is installed. For instance, set 900 + 1800 frequency band for the countries that support 900 or 1800 GSM frequency band[3].

How to Program?

Programming using Jeeves:

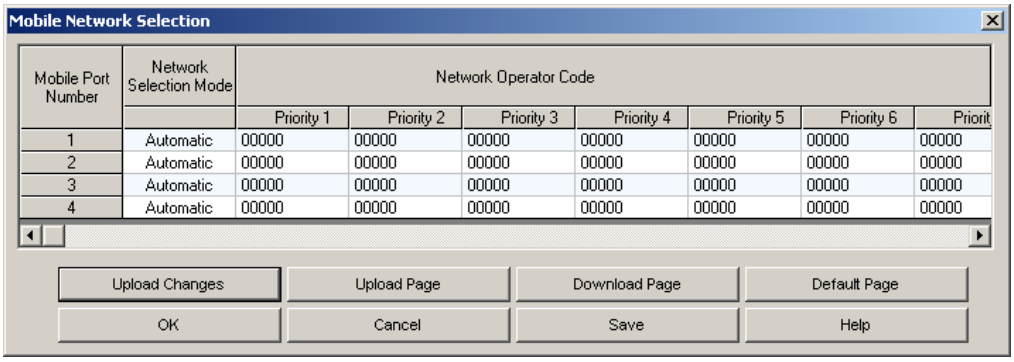
- Open Jeeves of Simado GFX44. (Refer “Programming SIMADO GFX44”)

2. *The Network Operator Code comprises of the Mobile Country Code (MCC) appended by the Mobile Network Code (MNC). The MCC is usually a 3-digit code that identifies a country. For example the MCC assigned to India is 404 and it applies to all network operators in the country. MCC for other countries are: USA-310; Canada-302; Australia: 505; Italy: 222.*

   The MNC is usually a 2/3-digit code. The MCC-MNC combination uniquely identifies the home network of the mobile terminal or the mobile user. For example, Airtel, a GSM network operator in India, has different MNC assigned to its networks in various states. The MNC for Airtel in the state of Maharashtra is 90, while the same for the state of Gujarat is 98.

3. *Frequency Band selection is not required if SIMCOM 3G module is installed in SIMADO GFX44.*

- One the 'Main Menu' page, log in to Jeeves and click the '**Mobile Network Selection**' button.



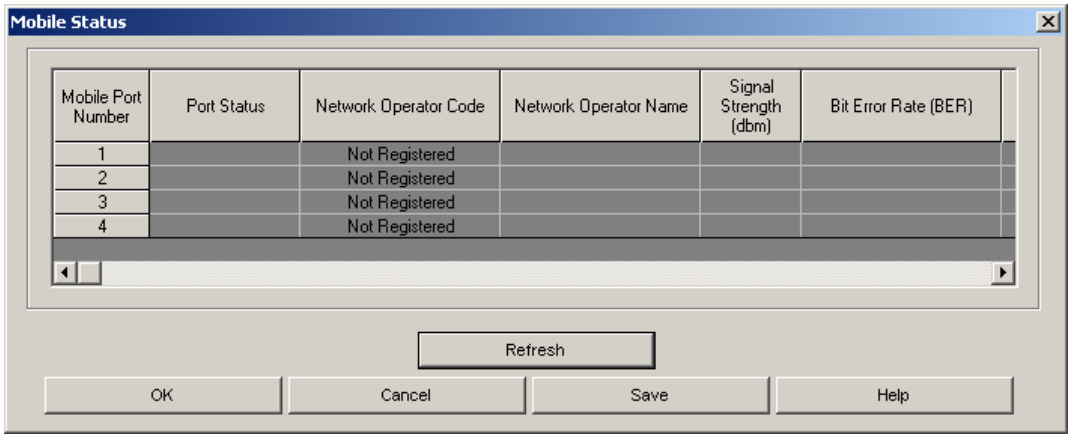
  - Select 'Network Selection Mode' for the Mobile Ports. SIMADO GFX44 supports two modes for network selection viz., Automatic and Manual. ***By default, Network Selection Mode is 'Automatic'.***

  - Program 'Network Operator Code' in decreasing order of their priority. ***By default, Network Operator Code is 00000 for all Priorities i.e. from priority 1 to priority 9.***

  The default priority table programmed in the system will be as shown below:

Mobile Port	**Network Selection Mode**	**Network Operator Code**			
		Priority 1	**Priority 2**	**....**	**Priority 9**
1	Automatic	00000	....	....	00000
2	Automatic	00000	....	....	00000
3	Automatic	00000	....	....	00000
4	Automatic	00000	....	....	00000

- Click the '**Mobile Status**' button to view operator code of the Mobile Network with which SIMADO GFX44 is registered.



- Click the '**Refresh**' button. Network Operator Code download will take place. When download is complete, 'Download Completed' window will appear.

- Click the '**OK**' button. You will be able to view the operator code of the mobile network with which SIMADO GFX44 is registered.

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To Program Network Selection Mode:
  Use the following command to program network selection mode for mobile port:
  231-Mobile Port-Network Selection Mode-#*
  Where,
  Mobile Port is from 1 to 4.

Mode	Meaning
1	Automatic
2	Manual

  By default, Network Selection Mode is 1.
  Use the following command to program network selection mode for all the mobile ports:
  231-*-Network Selection Mode-#*

- To program Network Operator's Code with Priority:
  Use the following command to program network operator's code in priority table:
  232-Mobile Port-Priority-Code-#*
  Where,
  Priority is from 1 to 9.
  Code = MCC- MNC. It can be of maximum 8 digits. Allowed digits are 0-9, #, *, A, B, C, D, F, P, W and +.
  By default, Network Operator Code is 00000 for Priority 1 to Priority 9.

  Use the following command to clear network operator code in priority table:
  232-Mobile Port-Priority-#*

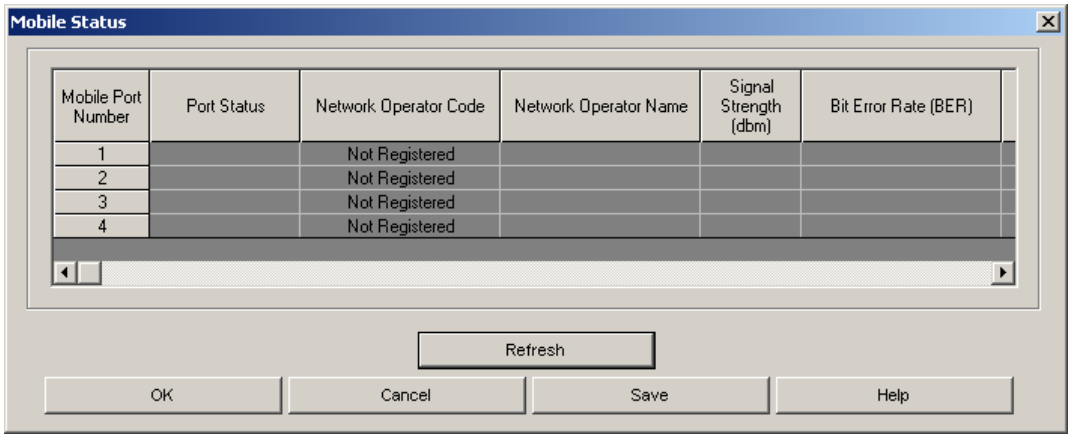
Relevant Topics:

1. “Port Parameters-Mobile” 94
2. “Signal Strength” 120

Mobile Port Status

SIMADO GFX44 provides facility to check the status of each Mobile Port through Jeeves. To check the status of the Mobile Port, follow the steps given below:

- Open Jeeves of SIMADO GFX44. (Refer "Programming SIMADO GFX44")
- Open 'Main Menu' page and log in to Jeeves. Click the 'Mobile Status' page, following window will open.



- **Port Status:** In this field, current status of the Mobile Port is displayed. Different possible status options that can appear in this field are mentioned below:

STATUS	DESCRIPTION
Disabled	Displayed when Mobile Port is disabled.
GSM Initialization	Displayed when GSM module is in initialization state i.e. before SIM detection.
SIM Absent	Displayed when SIM Card is not detected by the system.
SIM PIN wrong	Displayed when wrong SIM PIN is issued.
SIM PUK required	Displayed when SIM PUK is required.
Registering	Displayed when the Mobile Port is in registration process with the Network.
Idle	Displayed when the Mobile Port is registered with the Network and it is free.
Busy	Displayed when any active call is present on the Mobile Port.

- **Network Operator Code:** Code of the Network Operator (MCC-MNC) with which the Mobile Port of SIMADO GFX44 is currently registered, is displayed in this field.
- **Network Operator Name:** Name of the Network Operator with which the SIM Card of SIMADO GFX44 is registered, is displayed in this field.
- **Signal Strength (-dBm):** Signal Strength of the mobile network, to which the Mobile Port of the SIMADO GFX44 is currently registered with, is displayed in this field.
- **Bit Error Rate (BER):** Bit Error Rate of the cell is displayed in this field. BER defines the quality of the channel to which the Mobile Port of the SIMADO GFX44 is locked with.

- **SIM ID:** SIM ID of the SIM Card is displayed in this field. SIM Card is internationally identified by its Integrated Circuit Card ID (ICC-ID) printed on the SIM Card body. SIM ID can be 19 to 20 digits long.

- **IMSI:** IMSI number of the Mobile Port is displayed in this field. IMSI is the unique number stored in the SIM Card. It consists of three different parts viz. MCC (Mobile Country Code), MNC (Mobile Network Code) and MSIN (Mobile Subscriber Identification Number). IMSI can be 14 to 16 digits long.

- **Cell ID:** Cell ID is displayed in this field. Cell ID is 16 bit identifier that identifies the cell.

- **Location Area Code (LAC):** Location Area Code (LAC) is displayed in this field. LAC uniquely defines a location area (LA) within a Public Land Mobile Network (PLMN)

- **Registered with Network:** The type of network, with which your SIMADO GFX44 is registered, is displayed in this field. Possible network types which can be displayed in this field are as under:
  - GSM
  - GSM Compact
  - 3G or UMTS

- **Minutes Allowed:** Total free minutes allowed to the Mobile Port is displayed in this field.

- **Minutes Used:** Free minutes utilized by each Mobile Port are displayed in this field.

- **Firmware Version of Engine:** Current Firmware Version-Revision of the GSM Module/Engine is displayed in this field.

- **Refresh:** Click the 'Refresh' button to download the current values of all above mentioned parameters. When download is complete, 'Download Completed' window will appear. Click the 'OK' button. You will be able to view the status of all the Mobile Ports.

You can also check the status of the Mobile Port and the type of network with which the Mobile Port is registered, by issuing commands through FXS Port.

Use the following command to know the Network Type with which the Mobile Port is registered with:
239-Mobile Port-#*
Where,
Mobile Port is from 1 to 4.

One of the following statuses will appear on the LCD of the telephone instrument connected to SIMADO GFX44:

Code	Meaning
0	GSM
1	GSM Compact
2	3G or UMTS

If CLI type is set as DTMF, display of Network Type will be as under:
000

If CLI type is set as FSK, display of Network Type will be as under:
000
GSM

Use the following command to display Mobile Port status on the LCD of telephone instrument connected to SIMADO GFX44:

280-Mobile Port-#*

Where,

Mobile Port is from 1 to 4.

One of the following statuses will be displayed:

- Disabled
- GSM Initialization
- SIM Absent
- SIM PIN wrong
- SIM PUK required
- Registering
- Idle
- Busy

Above status will be displayed on the FXS Port only if CLI type is set to FSK.

Relevant Topics:

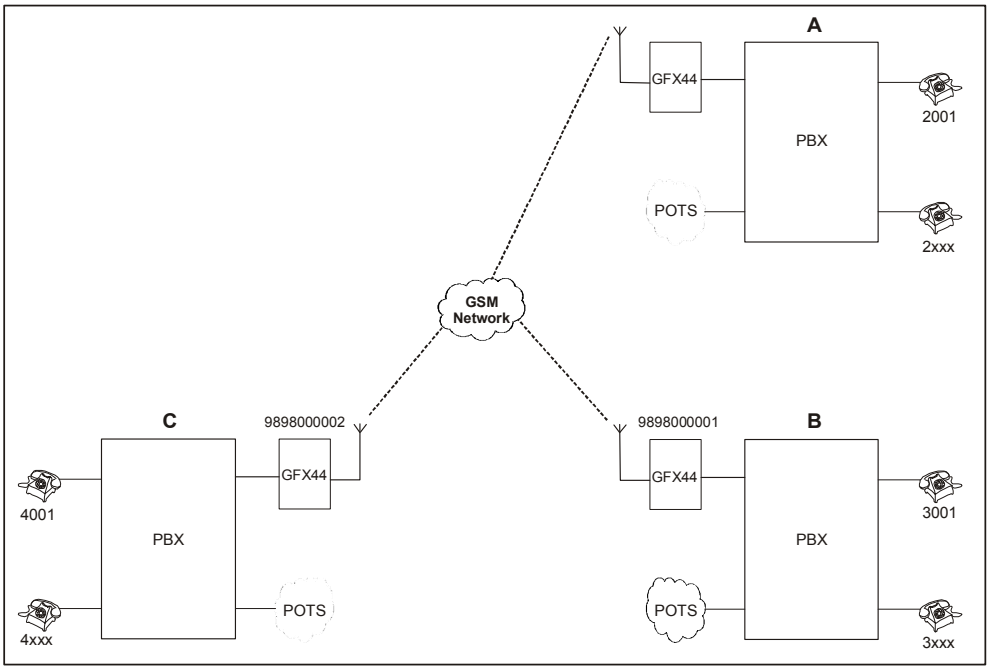
1. “BCCH Locking” 27
2. “Call Minutes” 35
3. “Mobile Network Selection” 69
4. “Port Parameters-Mobile” 94
5. “Signal Strength” 120

Multi-Stage Dialing

Many times it is required that the number dialed by the user should be manipulated, broken into parts and dialed out in various stages of the call. Multi-Stage dialing feature of SIMADO GFX44 does this.

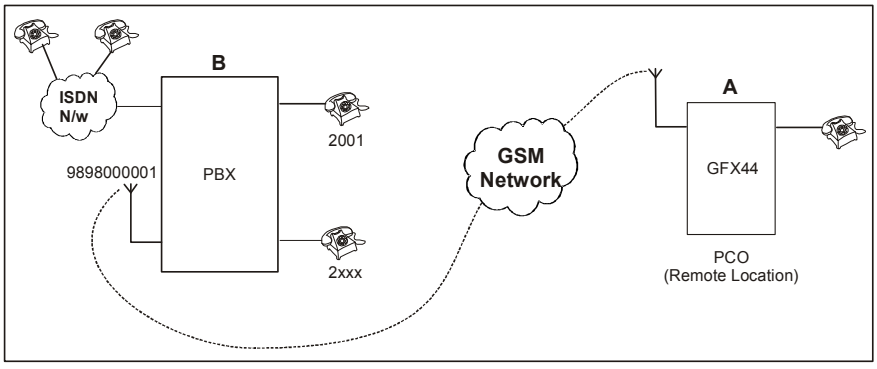
Consider two examples given below:

Example 1:
An organization wants to connect all its branch offices using GSM network. GFX44 is connected in front of PBX in all the offices (FXS port of GFX44 is connected to the FXO port of the PBX). CUG services are availed from the GSM service provider for free dialing between all the GFX44.



GFX44 of branch office A is so programmed that whenever any station of PBX at Office A dials 3001, the call is placed on station 3001 at branch office B. Likewise, whenever any station of PBX at office A dials 4001, the call is placed to station 4001 of PBX at branch office C and vice-versa.

Example 2:
A PCO owner at a remote rural, hilly location wants to provide telephony services to the residents of his area. GFX44 is installed at the PCO and a PBX (Eternity) with GSM card is installed in the urban area where fixed lines like POTS and ISDN are available. CUG services of the GSM service provider are availed. Both the SIMs, of GSM card and of GFX44 is provisioned under CUG for free calling. Fixed lines are also availed at very low rates.



GFX44 at the PCO is so programmed that whenever a customer makes a call, the call is first made to the GSM port of the Eternity and then using DISA services of the Eternity, the final destination number dialed by the user is dialed and the call to the final destination is made. However, the customer (the caller) has to dial only the destination number to which he needs to talk to.

How it works?

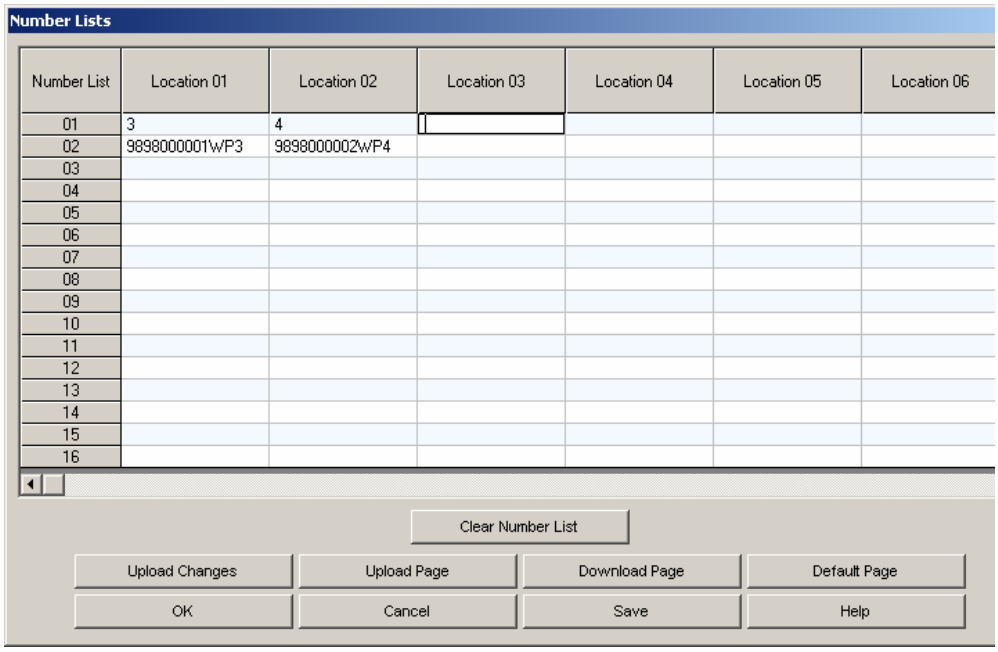
GFX44 uses following features to make this feature work:

- Dialed Number List for Mobile port
- Substitute Number List for Mobile port
- To assign Dialed Number List and Substitute Number List to the mobile port
- Pause Timer for Mobile port
- Call Proceeding Tone for Mobile port

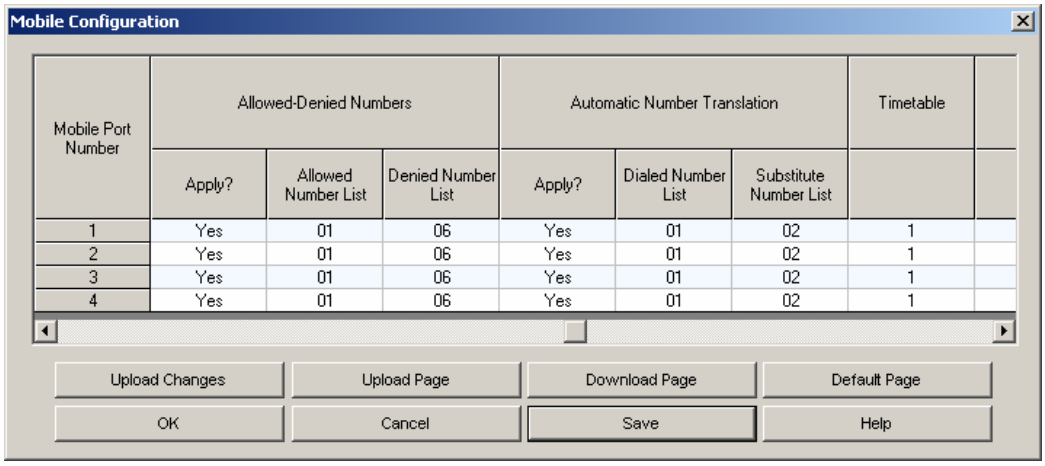
Carrying the above examples further:

To accomplish the requirement mentioned in example 1,

- The PBXs at all the locations should be programmed in such a way that whenever the station users of the PBX dial the station numbers of other PBXs, the call is routed through the FXO port on which GFX44 is connected and the dialed number string is so manipulated that GFX44 gets the station number of the other PBX.
- Also the FXO ports of PBX to which GFX44 are connected should be programmed in DID/DISA mode.
- Program Dialed Number List and Substitute Number List as shown below:
  - In one of the Number list, say 01, program number 3 at location index 01.
  - In Number list, say 02, at location index 01, program mobile number of GFX44 installed at location B (9898000001) followed by WP3.
  - Similarly, in number list 01, program number 4 at location index 02 and in number list 02, at location index 02, program mobile number of GFX44 installed at location C (9898000002) followed by WP4. Thus the number lists 01 and 02 will be programmed as under:



- Assign dialed and substitute number list to ANT Table in **Mobile Configuration** window as shown below:



- Program Pause Timer for Mobile Ports. ***By default, Pause Timer is 2 seconds.*** (Refer "Port Parameters-Mobile" topic for programming Pause Timer)

- Call Proceeding Tone for Mobile Ports. ***By default, Call Proceeding Tone is 'Network' Tone.*** (Refer "Call Proceeding Tone" topic for programming Call Proceeding Tones for Mobile Ports)

When user 2001 dials 3001, following sequence of events would take place:

- GFX44 installed at Location A would check ANT Table. In ANT Table number list 01 is assigned to all mobile ports in Dialed Number List column and number list 02 is assigned to all mobile ports in Substitute Number List column.
- In dialed number list, system would find number '3'. Therefore it will check the corresponding substitute number in substitute number list. There it will find 9898000001WP3.
- First the system would dial out 9898000001. When call arrives at GFX44 at location B, FXS port rings. Since the FXS port is connected to the FXO port of the PBX at location B, the PBX answers the call. (The FXO port of PBX should be programmed in DID/DISA mode)
- When the call is answered by PBX at location B, 3001 will be dialed out after the pause timer. The call will be placed on the station 3001 at location B.

To accomplish the requirement mentioned in example 2,

- The GSM port of the PBX at location B should be programmed for DID/DISA mode.'
- The GFX44 at Location A should be programmed with following parameters:
  - In dialed number list, program the dialed number strings, say 0044.
  - In the corresponding field of substitute number list, program the mobile number of GSM port of PBX at location B followed by DISA login code + Station Number + Station Password + Dialed Number String i.e. 9898000001WP107920015656P0044.

- Program Pause Timer for Mobile Ports. ***By default, Pause Timer is 2 seconds.*** (Refer "Port Parameters-Mobile" topic for programming Pause Timer)

- Call Proceeding Tone for Mobile Ports. ***By default, Call Proceeding Tone is 'Network' Tone.*** (Refer "Call Proceeding Tone" topic for programming Call Proceeding Tones for Mobile Ports)

Now when the customer at PCO dials the number 00449652324256, following sequence of events would take place:

- GFX44 installed at Location A would check ANT Table. In ANT Table number list 01 is assigned to all mobile ports in Dialed Number List column and number list 02 is assigned to all mobile ports in Substitute Number List column.
- In dialed number list, system would find number '0044'. Therefore it will check the corresponding substitute number in substitute number list. There it will find 9898000001WP107920015656P0044.
- First the system would dial out 9898000001. When call arrives at GSM port of the PBX at location B, since the GSM port is programmed in DID/DISA mode, the PBX answers the call.
- After the pause timer, the system would dial 107920015656. Again it will wait for the pause timer and will dial out 00449652324256.
- The call will be placed on the dialed destination number.

Please note that detection of DTMF digits received over GSM network is not perfect, hence 100% performance of this feature is not guaranteed. This is a technological limitation.

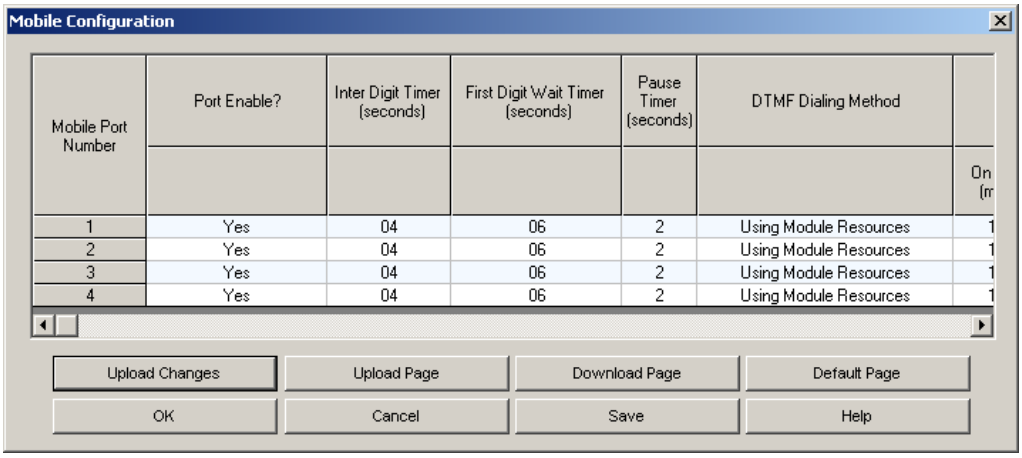
How to Program?

To use Multi Stage Dialing feature, the SE shall program the following parameters:

- Dialed Number List for Mobile port
- Substitute Number List for Mobile port
- Assign Dialed Number List and Substitute Number List to the mobile port
- Pause Timer for Mobile port
- DTMF Dialing Method for Mobile Port
- DTMF Out Dial ON Time for Mobile port
- Inter Digit Pause Time for Mobile port
- Call Proceeding Tone for Mobile port

Programming using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)
- Open 'Main Menu' and log in to Jeeves.
- Click the 'Number Lists' button and program Dialed Number List and Substitute Number List. (Refer “Number Lists”for more details)
- Click the '**Mobile Configuration**' button and program following parameters:



- **Automatic Number Translation:** Go to 'Automatic Number Translation' Table. Select 'Yes' in 'Apply?' field and assign Dialed number list and Substitute number list to the desired Mobile Port in the respective columns.

(Refer “Automatic Number Translation” for more details)

- **Pause Timer:** Pause Timer is used to provide delay between dialing of two digits on the mobile port. Program Pause Timer for each Mobile Port in this field. Range of Pause Timer is from 1 to 9 seconds. ***By default, it is 2 seconds.***

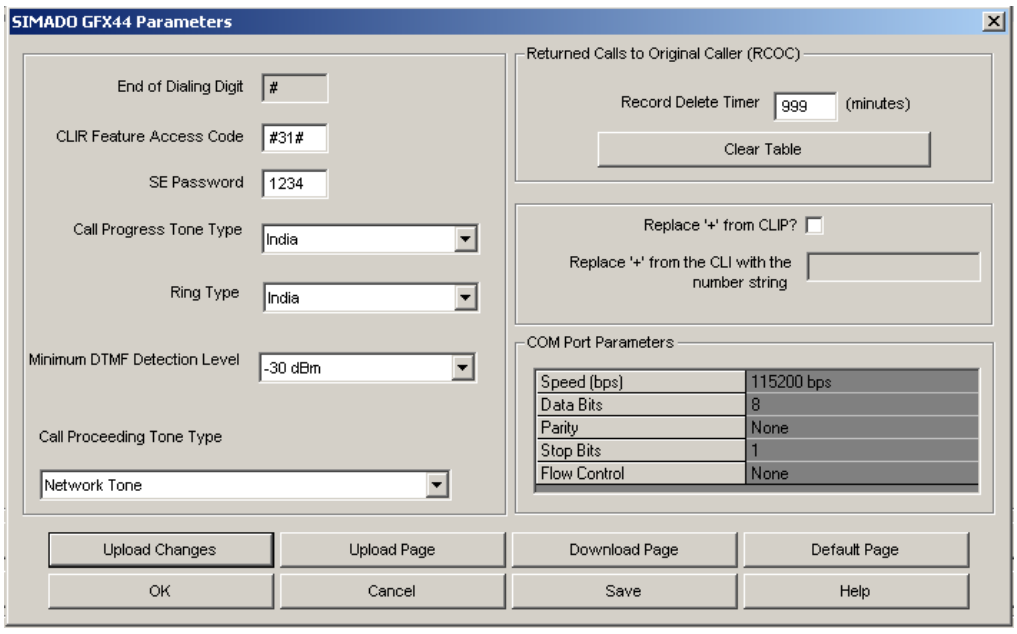
- **DTMF Dialing Method:** GFX44 supports two methods of dialing DTMF digits on the Mobile Port: *Using Module Resources* and *Using System Resources*. Select appropriate method of dialing DTMF digits on the mobile port in this field. ***By default, it is 'Using Module Resources'.***

- **DTMF Out Dial-On Time:** Program DTMF Out Dial- on Time in this field. Range of DTMF On Time is from 50 to 200 ms. ***By default, it is 100 ms.***

- **DTMF Out Dial - Inter Digit Pause Timer:** Program DTMF Out Dial Inter Digit Timer (seconds) for each Mobile Port. Range of Inter Digit Pause Timer is 20 to 200. ***By default, it is 100 ms.***

  (Refer “Port Parameters-Mobile” for more details)

- Click the 'SIMADO GFX44 Parameters' button. Select appropriate call proceeding tone in 'Call Proceeding Tone Type' field. ***By default, it is set to 'Network'.*** (Refer “Call Proceeding Tone” for more details)



Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To Program Dialed Number List and Substitute Number List for ANT Table:
  (Refer “Number Lists” topic)

- To assign Dialed Number List and Substitute Number List to a Mobile Port:
  (Refer “Port Parameters-Mobile” topic)

- To Program Pause Timer:
  Pause timer is the time for which SIMADO GFX44 will wait while dialing out DTMF digits on the mobile port. This is applicable when character P is programmed in the DTMF number string.

Use the following command to program Pause Timer for Mobile Port:
275-Mobile Port-Pause Timer-#*
Where,
Mobile Port is from 1 to 4.
Pause Timer is from 1 to 9 seconds.
By default, Pause Timer is 2 seconds for Mobile Port.

Example: If number string to be dialed out on the Mobile Port is PPP234 and pause timer is programmed as 3 seconds then SIMADO GFX44 will dial out digit 2 after P+P+P seconds i.e. 3+3+3=9 seconds.

Use the following command to program Pause Timer for all Mobile Ports:
275-*-Pause Timer-#*

- To Program DTMF Dialing Method:
  Use the following command for programming the 'DTMF Dialing method' for Mobile Port:
  282-Mobile Port-Code-#*
  Where,
  Mobile Port is from 1 to 4.

Code	Meaning
1	Using Module Resources
2	Using System Resources

By default, the DTMF Dialing method is 'Using Module Resources' for each Mobile Port.

Use the following command for programming the DTMF Dialing method for all Mobile Ports:
282-*-Code-#*

- To Program DTMF Out Dial ON Time:
  This parameter decides for how much time the DTMF digit will remain ON while dialing it out on the Mobile Port.

  Use the following command for programming 'DTMF Out dial ON Time' for Mobile Port:
  283-Mobile Port-Code-#*
  Where,
  Mobile Port is from 1 to 4.

Code	DTMF On Time (ms)
01	50
02	60
03	70
04	80
05	90
06	100
07	110
08	120
09	130
10	140
11	150
12	160
13	170
14	180
15	190

Code	DTMF On Time (ms)
16	200

By default, DTMF ON Time is 100 ms i.e. 06 for each Mobile port.

Use the following command for programming DTMF Out dial ON Time for all Mobile Ports:
283-*-Code-#*

- To Program Inter Digit Pause Time:
  This parameter decides how much time the pause (gap) should be present between two digits while dialed by the SIMADO GXF44. It is applicable only when DTMF is out dialed by the system on Mobile Port.

  Use the following command for programming 'Inter Digit Pause Time' for DTMF Dialing for Mobile port:
  284-Mobile Port-Code-#*
  Where,
  Mobile Port is from 1 to 4.

Code	Inter Digit Pause Time (ms)
01	20
02	30
03	40
04	50
05	60
06	70
07	80
08	90
09	100
10	110
11	120
12	130
13	140
14	150
15	160
16	170
17	180
18	190
19	200

By default, Inter Digit Pause Time is 100 ms i.e. 09 for each Mobile Port.

Use the following command for programming Inter Digit Pause Time for DTMF Dialing for all Mobile ports:
284-*-Code-#*

To Program Call Proceeding Tone:
(Refer "Call Proceeding Tone" topic)

Relevant Topics:

1. "Automatic Number Translation" 24
2. "Call Proceeding Tone" 40
3. "Number Lists" 82
4. "Port Parameters-FXS" 85
5. "Port Parameters-Mobile" 94

Number Lists

Number List is the data structure in which specific number strings consisting of digits and characters are programmed for functioning of the features such as Automatic Number Translation, Allowed and Denied numbers, etc.

Number lists are programmed for:

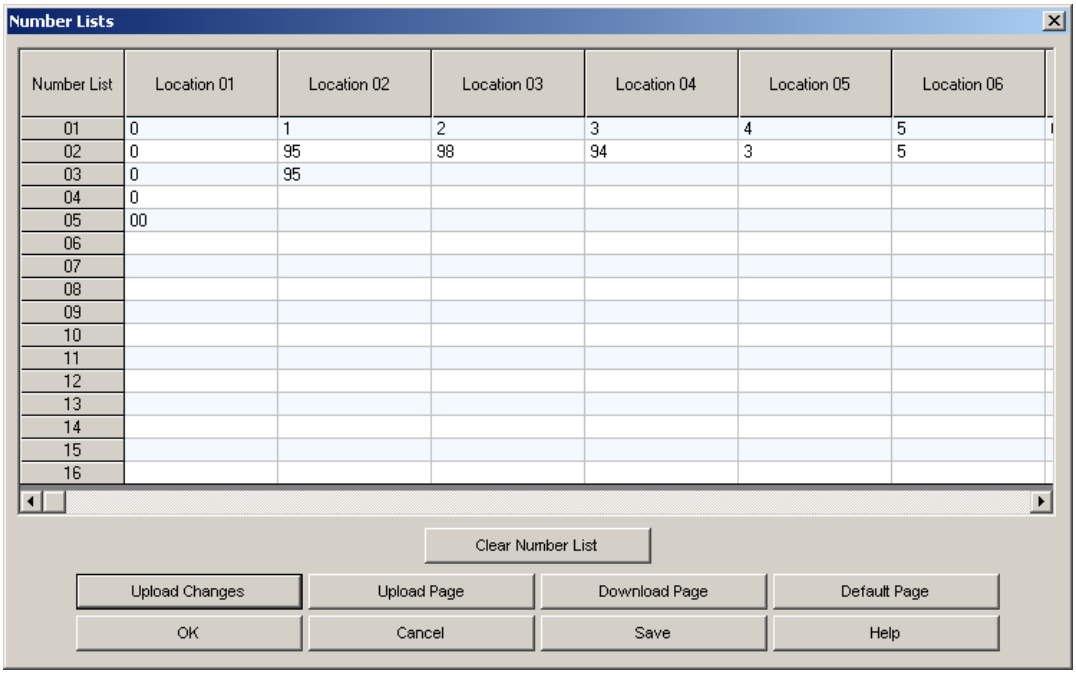
- Allowed and Denied Numbers on FXS and Mobile Port.
- Dialed and Substitute Numbers for Automatic Number Translation on Mobile port.

SIMADO GFX44 supports 16 number lists, each number list having total 24 entries. Each entry can be of maximum 40 digits long.

How to Program?

Programming using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)
- Open 'Main Menu' and log in to Jeeves.
- Click the 'Number Lists' button. Number List window will open.



- Program desired numbers in the location indexes of the number lists.
- Program numbers to be denied from FXS port in one of the number list and numbers to be allowed from FXS port in another number list.
- Assign these number lists in allowed and denied number list column of Allowed-Denied Number Table for each FXS port in the FXS Configuration windows.
- Similarly Program numbers to be denied from Mobile port in one of the number list and numbers to be allowed from Mobile port in another number list.
- Assign these number lists in allowed and denied number list column of Allowed-Denied Number Table for each Mobile port on the **Mobile Configuration** page.

- Program numbers to be dialed in one number list and numbers to be substituted in place of the dialed numbers in another number list.

- Assign these number lists in dialed and substitute number list column of Automatic Number Translation Table for each Mobile Port on the Mobile Configuration page.

- Click the 'Clear Number List' button, a number list selection window will appear. Select the number list you want to clear and click the 'OK' button. An alert message will appear as shown below:
  - Do you want to update this change in SIMADO GFX44 now? This option will clear the specified number list in SIMADO GFX44." Yes/ No. Click the 'Yes' button to clear the number list.

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To Program number string in the Number Lists:
  Use the following command to program a number string in a location index of a number list:
  101-Number List-Location Index-Number String-#*
  Where,
  Number List is from 01 to 16.
  Location Index is from 01 to 24.
  Number string can be of maximum 40 digits. Allowed digits are 0-9, #, *, A, B, C, D, F, W and +.

  Codes for programming the special digits such as A, B, C, D etc, is shown in the table given below:

Special Digits	Programming Codes
Flash (F)	#2
Pause (P)	#3
A	#4
B	#5
C	#6
D	#7
+	#1
#	##
*	**
W	*1
End of Programming Command	#*

  Default Number List is as shown below:

Location Index	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15-24
01	0	1	2	3	4	5	6	7	8	9	*	#	F	+	B
02	0	95	98	94	3	5	B	B	B	B	*	#	F	B	B
03	0	95	B	B	B	B	B	B	B	B	*	#	F	B	B
04	0	B	B	B	B	B	B	B	B	B	*	#	F	B	B
05	00	B	B	B	B	B	B	B	B	B	*	#	F	B	B
06	B	B	B	B	B	B	B	B	B	B	*	#	F	B	B
07	B	B	B	B	B	B	B	B	B	B	*	#	F	B	B
08-15	Same as 07														
16	B	B	B	B	B	B	B	B	B	B	*	#	F	B	B

- *You can program different number lists for allowed numbers, denied numbers, dialed numbers and substitute numbers for all FXS and Mobile Ports and assign the same to the respective ports.*
- *You will get error tone if you use combinations of # and * other than those mentioned in the above table. For example, #0, #1, *2 etc are invalid strings.*
- *If character W is programmed but the call is not matured, remaining number will not be dialed out as DTMF digits.*

- To Clear number string from the Number List:
  Use the following command to clear a number string from a location index of a number list:
  101-Number List-Location Index-#*

  Use the following command to clear number strings from all the locations of a number list:
  102-Number List-#*

Relevant Topics:

1. “Allowed-Denied Numbers” 19
2. “Automatic Number Translation” 24
3. “Multi-Stage Dialing” 75
4. “Port Parameters-FXS” 85
5. “Port Parameters-Mobile” 94

Port Parameters-FXS

SE should program various FXS Port parameters for smooth and proper functioning of SIMADO GFX44. SE should program following FXS Port parameters:

Port Enable?
SE can enable/disable FXS Ports as per his requirement. Disabling of FXS Port is required only in case of hardware failure.

CLIP Type
When the call originates on the mobile port, SIMADO GFX44 detects and displays the calling party number sent by the exchange or service provider on the LCD of the telephone instrument connected to its FXS port. This is called Calling Line Identification and Presentation. SIMADO GFX44 supports different types of CLIP signaling for presenting calling party number on FXS port as shown below:

- None
- DTMF
- ITU-T V.23 FSK
- Bellcore 202A

First Digit Wait Timer
First digit wait timer signifies the time for which SIMADO GFX44 waits for the user to dial a digit after the phone goes OFF-Hook. On expiry of this timer:

- SIMADO GFX44 will give error tone to the user, if fixed dialing is disabled.
- SIMADO GFX44 will dial out fixed destination number programmed, if fixed dialing is enabled.

Inter Digit Wait Timer
Inter Digit Wait Timer signifies the time period between dialing of two consecutive digits. All the digits should be dialed at a stretch within Inter Digit Wait Timer period. If the user does not dial the next digit before this inter digit wait timer expires then GFX44 will stop collecting further digits and will process the digits dialed so far.

Answer Signaling on FXS Port
Answer Signaling on FXS Port is a signal which is generated on FXS port when the called party has answered and the call is matured. When GFX44 is connected with PCO machines in Cyber Café's or with FXO port of PBX then it is required to generate maturity information on FXS port of GFX44 so that the device connected to FXS port viz. PCO machine or PBX can take appropriate decision e.g., start billing etc. In absence of maturity information on FXS port, call will not be considered as matured and no billing will be generated on PCO machine. To avoid such problems GFX44 supports 'Answer Signaling' feature. This helps in accurate billing, avoids billing of unanswered and unsuccessful call attempts.

For Answer Signaling on FXS port, one of the following options is to be selected.

- **None:** This option is used when no answer signaling is to be generated on the FXS port.
- **Polarity Reversal:** This option is used when answer signaling is to be generated in the form of Polarity Reversal on the FXS port. In Polarity Reversal, battery polarity of FXS port is reversed. For example, suppose the battery polarity of the FXS port is negative for TIP and positive for RING in normal condition. After call maturity, TIP will become positive and RING will become negative.

Disconnect Signaling on FXS port
Disconnect Signaling on FXS port is a signal which will be generated on FXS port, which indicates that the other party of the call has disconnected. When GFX44 is connected with PCO machines or with FXO port of PBX then the PCO machine or PBX is to be informed that the called party has disconnected. In absence of 'Disconnect Signaling' the call is considered as complete when the caller goes on-hook. But this may result in inaccurate billing in case of PCO machine or in case of PBX even though the call is disconnected it is considered as mature by the

PBX. To avoid such problems GFX44 supports 'Disconnect Signaling' feature. This will result in accurate billing in PCO machines.

For Disconnect Signaling on FXS port, one of the following options can be selected.

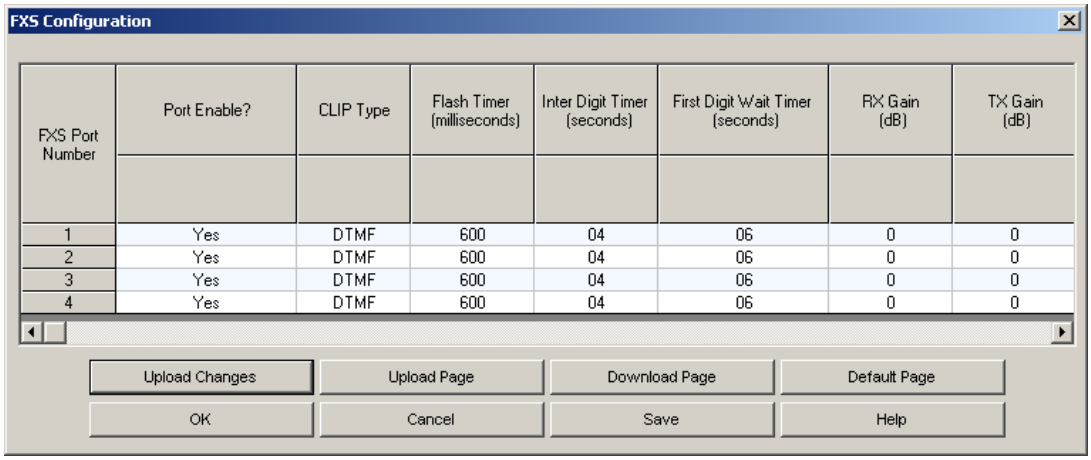
- **None:** This option is used when no disconnect signaling is to be generated on the FXS port.
- **Polarity Reversal:** This option is used when disconnect signaling is to be generated in the form of Polarity Reversal on the FXS Port. In Polarity Reversal, battery polarity of FXS Port is reversed. For example, suppose the battery polarity of the FXS Port is negative for TIP and positive for RING in speech condition. After call disconnection, TIP will become positive and RING will become negative. When FXS Port goes on-hook, idle state polarity is restored.
- **Open Loop Disconnect:** This option is used when call disconnection is to be signaled in the form of Open Loop Disconnect pulse. In Open Loop Disconnect, the battery voltage on FXS Port is removed for Open Loop Disconnect timer and then it is restored again.

How to Program?

Programming using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer "Programming SIMADO GFX44")

- On 'Main Menu' page, log in to Jeeves and click the '**FXS Configuration**' button.



- **Port Enable?:** Select 'No' from the combo box to disable the FXS Port. ***By default, 'Yes' is selected in this field.***

- **CLIP Type:** Select the type of CLIP signaling for presenting calling party number on FXS port from the following option:
  - None
  - DTMF
  - ITU-T V.23 FSK
  - Bellcore 202A

  By default, DTMF is selected in this field.
- **Flash Timer (milliseconds):** Program Flash Timer in this field. Range of Flash Timer is from 083ms to 999ms. ***By default, it is 600ms.***

- **Inter Digit Timer (seconds):** Program Inter Digit Timer in this field. Range of Inter Digit Timer is from 01 to 99 seconds. ***By default, it is 04 seconds.***

- **First Digit Wait Timer (seconds):** Program First Digit Wait Timer in this field. Range of First Digit Wait Timer is from 01 to 99 seconds. ***By default, it is 06 seconds.***

- **Rx Gain (db):** Program Rx Gain in this field. Valid options for Rx Gain are:
  - -1.5
  - 0
  - +1.5
  - +3

  By default, Rx Gain is 0.

- **Tx Gain (db):** Program Tx Gain in this field. Valid options for Tx Gain are:
  - -1.5
  - 0
  - +1.5
  - +3

  By default, Tx Gain is 0.

- **AC Impedance (Ohm):** Program AC Impedance in this field. Valid options for AC Impedance are:
  - 600 ohm
  - 900 ohm
  - Complex

  By default, 600 ohm is selected.

- **Answer Signaling:** Program Answer Signaling in this field. Valid options are:
  - None
  - Polarity Reversal

  By default, Polarity Reversal is selected.

- **Disconnect Signaling:** Program Disconnect Signaling in this field. Valid options are:
  - None
  - Polarity Reversal
  - Open Loop Disconnect

  By default, Polarity Reversal is selected.

- **Open Loop Disconnect Timer (milliseconds):** Program Open Loop Disconnect Timer in this field. Range of Open Loop Disconnect Timer is from 001ms to 999ms. ***By default, it is 500ms.***

- **Minimum Current for Off-hook Detection (mA):** Program minimum current for Off-hook detection on FXS Port in this field. You can select one of the following options:
  - 10mA
  - 12mA
  - 14mA
  - 16mA
  - 18mA

  By default, Minimum Current for Off-hook Detection is 12 mA.

- **On-hook Detection Current:** Program current to detect On-hook condition on FXS Port in this field. You can select one of the following options:
  - 10mA
  - 12mA
  - 14mA
  - 16mA
  - 18mA

By default, On-hook Detection Current is 10 mA.

- **Fixed Dialing:** Program 'Fixed Dialing' table.
  (Refer "Fixed Dialing" topic for details)

- **Allowed Denied Numbers:** Program Allowed-Denied Numbers Table.
  (Refer "Allowed-Denied Numbers" topic for details)

- **Time Table:** (Refer "Time Table" topic for the details)

- **Time Zone 1:** Program following parameters for time zone 1 here.
  - **Routing Type:** Program Routing Type for time zone 1 in this field.
  - **Routing Group:** Program Routing Group for time zone 1 in this field.

  (Refer "Routing Type" and "Routing Group" for more details)

- **Time Zone 2:** Program following parameters for time zone 2 here.
  - **Routing Type:** Program Routing Type for time zone 2 in this field.
  - **Routing Group:** Program Routing Group for time zone 2 in this field.

  (Refer "Routing Type" and "Routing Group" for more details)

- **Time Zone 3:** Program following parameters for time zone 3 here.
  - **Routing Type:** Program Routing Type for time zone 3 in this field.
  - **Routing Group:** Program Routing Group for time zone 3 in this field.

  (Refer "Routing Type" and "Routing Group" for more details)

- **Time Zone 4:** Program following parameters for time zone 4 here.
  - **Routing Type:** Program Routing Type for time zone 4 in this field.
  - **Routing Group:** Program Routing Group for time zone 4 in this field.

  (Refer "Routing Type" and "Routing Group" for more details)

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To Program Port Status
  Use the following command to enable/disable a FXS Port:
  251-FXS Port-Code-#*
  Where,
  FXS Port is from 1 to 4.

Code	Meaning
0	Disable
1	Enable

  By default, all FXS ports are enabled.

  Use the following command to enable/disable all FXS Ports:
  251-*-Code-#*

If user goes Off-Hook on the telephone instrument that is connected to the FXS Port that is disabled then he will get error tone.

- To Program CLIP Type
  Use the following command to program the CLI type for the FXS Port:
  161-FXS Port-CLIP Type-#*
  Where,
  FXS Port is from 1 to 4.

CLI Type	Meaning
0	None
1	DTMF
2	ITU-T V.23 FSK
3	Bellcore 202A

  By default, CLIP Type is 1.

  Use the following command to program the CLIP type for all FXS Ports:
  161-*-CLIP Type-#*

CLI type 'None' is selected when the telephone instrument connected to the FXS Port does not have the LCD to display the number or user does not want to receive the CLI.

- To Program Flash Timer
  Flash timer signifies the time period for which the loop current breaks.

  Use the following command to program Flash Timer for the FXS Port:
  254-FXS Port-Flash Timer-#*
  Where,
  FXS Port is from 1 to 4.
  Flash Timer is from 083ms to 999ms.
  By default, Flash Timer for all FXS Ports is 600ms.

  Use the following command to program Flash Timer for all FXS Ports:
  254-*-Flash Timer-#*

Default values for all ring types for all the countries as per ETSI standard is programmed in the system. Ring type table programmed in the GFX44 is shown above.

- To Program Inter Digit Wait Timer
  Inter Digit Wait Timer signifies the time period between dialing of two consecutive digits.

  Use the following command to program the Inter Digit Wait Timer for FXS Port:
  253-FXS Port-Inter Digit Wait Timer-#*
  Where,
  Inter Digit Wait Timer is from 01 to 99 seconds.
  By default, it is 04 seconds.

  Use the following command to program the Inter Digit Wait Timer for all FXS Ports:
  253-*-Inter Digit Wait Timer-#*

- To Program First Digit Wait Timer
  First digit wait timer signifies the time for which the system waits for the user to dial a digit after the phone goes OFF-Hook.

  Use the following command to program the First Digit Wait Timer for FXS Port:
  255-FXS Port-First Digit Wait Timer-#*
  Where,
  First Digit Wait Timer is from 01 to 99 seconds.
  By default, it is 06 seconds.

  Use the following command to program the First Digit Wait Timer for all FXS Ports:
  255-*-First Digit Wait Timer-#*

- To program Rx Gain on FXS Port
  Use the following command to program Rx Gain on FXS Port:
  259-FXS Port-Code-#*
  Where,
  FXS Port is from 1 to 4.

Code	Meaning
1	-1.5
2	0
3	+1.5
4	+3

  By default, Rx Gain for FXS Port is 2.

  Use the following command to program Rx Gain on all FXS Ports:
  259-*-Code-#*

- To Program Tx Gain on FXS Port
  Use the following command to program Tx Gain on FXS Port:
  258-FXS Port-Code-#*
  Where,
  FXS Port is from 1 to 4.

Code	Meaning
1	-1.5
2	0
3	+1.5
4	+3

  By default, Tx Gain for FXS Port is 2.

  Use the following command to program Tx Gain on all FXS Ports:
  258-*-Code-#*

- To Program AC Impedance on FXS Port:
  AC impedance of communication equipment connected to the FXS port of the gateway should match the AC impedance of the FXS port for proper transmission of the signals. If AC impedance does not match then it may lead to the signal loss. To avoid such problem, AC impedance is kept programmable.

  Use the following command to program AC Impedance on FXS Port:
  260-FXS Port-Code-#*

Where,
FXS Port is from 1 to 4.

Code	AC Impedance (Ohms)
1	600
2	900
3	Complex

By default, AC Impedance on FXS Port is 1.

Use the following command to program AC Impedance on all FXS Ports:
260-*-Code-#*

After issuing the command to program AC impedance on FXS Port, the new value of AC impedance will be effective when the user restarts GFX44.

- To Program Answer Signaling on FXS Port
  Answer Signaling on FXS Port is a signal which is generated on FXS Port when the called party has answered and the call is matured.

  Use the following command to program the answer signal to be generated on FXS Port:
  261-FXS Port-Answer Signal-#*
  Where,
  FXS Port is from 1 to 4.

Answer Signal	Meaning
0	None
1	Polarity Reversal

By default, Polarity Reversal is selected.

Use the following command to program the answer signal to be generated on all FXS Ports:
261-*-Answer Signal-#*

- To Program Disconnect Signaling on FXS port
  Disconnect Signaling on FXS port is a signal which will be generated on FXS port, which indicates that the other party of the call has disconnected.

  Use the following command to program the disconnect signal on the FXS Port:
  256-FXS Port-Disconnect Signal-#*
  Where,
  FXS Port is from 1 to 4.

Disconnect Signal	Meaning
0	None
1	Polarity (Battery) Reversal
2	Open Loop Disconnect (Battery Removal or Current Removal)

By default, Polarity Reversal is selected.

Use the following command to program the disconnect signal on all FXS Ports:
256-*-Disconnect Signal-#*

Use the following command to program Open Loop Disconnect Timer on FXS Port:
257-FXS Port-Open Loop Disconnect Timer-#*

Where,
FXS Port is from 1 to 4.
Open Loop Disconnect timer is from 001 to 999 ms.
By default, it is 500 ms.

Use the following command to program Open Loop Disconnect Timer on all FXS Ports:
257-*-Open Loop Disconnect Timer-#*

When call is disconnected, the user will get error tone.

- To program Threshold current for Off-hook detection
  Use the following command to program threshold value of current for Off-hook detection on FXS Port:
  262-FXS Port-Code-#*
  Where,

Code	Meaning
1	10mA
2	12mA
3	14mA
4	16mA
5	18mA

  By default, it is 12mA.

  Use the following command to program threshold value of current for Off-hook detection on all FXS Ports:
  262-*-Code-#*

- To program On-hook detection current
  Use the following command to program value of current for On-hook detection on FXS Port:
  263-FXS Port-Code-#*
  Where,

Code	Meaning
1	10mA
2	12mA
3	14mA
4	16mA
5	18mA

  By default, it is 10mA.

  Use the following command to program value of current for On-hook detection on all FXS Ports:
  263-*-Code-#*

- To program Fixed Dialing Table for FXS Port:
  (Refer "Fixed Dialing" for details)

- To Program Allowed Denied Number Table for FXS Port:
  (Refer "Allowed-Denied Numbers" for programming Allowed-Denied Number Table for FXS Port)

- To Program Time Table for FXS Port:
  (Refer "Time Table" for details)

- To program Time Zone Tables for FXS Port:
  (Refer “Routing Group” and “Routing Type” for details)

Relevant Topics:

1. “Allowed-Denied Numbers” 19
2. “Programming SIMADO GFX44” 6
3. “Routing Group” 109
4. “Time Table” 135

Port Parameters-Mobile

SE should program various Mobile port parameters for smooth and proper functioning of SIMADO GFX44. For e.g., GSM modules used by the system need different settings for Rx audio level and Tx audio level, for required speech level at analog phones. For this, user has to optimize the gain of RF module. SIMADO GFX44 also supports Multi-Stage Dialing feature. For this, Pause Timer and DTMF Out Dialing parameters should be programmed on the mobile port. All these parameters are described below:

Enable/Disable Mobile Port:
SE can enable/disable the mobile port as per the requirement of the User. Disabling of Mobile port is required only in cases like problem in the GSM Module, SIM Card not present, Network problems, hardware failure etc. Gateway will route the call only if the port is enabled.

Allow/ Disallow Incoming Calls:
SE has the option to either allow or block incoming calls on the mobile port.

Inter Digit Wait Timer
Inter Digit Wait Timer signifies the time period between dialing of two consecutive digits. All the digits should be dialed at a stretch within Inter Digit Wait Timer period. If the user does not dial the next digit before this inter digit wait timer expires then GFX44 will stop collecting further digits and will process the digits dialed so far.

First Digit Wait Timer
First digit wait timer signifies the time for which the system waits for the user to dial a digit after the port goes OFF-Hook. On expiry of this timer, the system will give error tone to the user.

Pause Timer
The Pause Timer is used to provide delay between dialing of two digits on the mobile port.

Receive Gain
The GSM port provides a facility to adjust the receive gain. This enables the user to increase the audibility of incoming speech.

Transmit Gain
The GSM port provides a facility to adjust the transmit gain. This enables the user to adjust the right intensity for the transmitted signal.

Mobile Frequency Band:
The Frequency Band supported by the GSM networks varies across countries. Therefore select the Frequency Band used by the GSM Service Provider(s) in the country where GFX44 is installed. For instance, select 850 + 1900 GSM frequency band for countries which support both 850 and 1900 MHz frequencies for GSM network. Similarly, set 900 + 1900 frequency band for countries that support 900 or 1900 GSM frequency band. SIMADO GFX44 supports the following GSM frequency bands:

- 900
- 1800
- 1900
- 850+1900
- 900+1800
- All Bands
  By default, ‘All Bands’ is selected.

If your system has 3G mobile ports, Frequency Band Selection will not be required.

Preferred Network Mode:
When 3G Mobile port is used in the SIMADO GFX44, the SIM gets registered with either GSM (2G) or UMTS (3G) network, whichever is available. SE can select the Network with which the SIM should be registered by setting the Preferred Network Mode.

If the SIM you have installed in the 3G Mobile port supports both GSM and UMTS services but you want it to be registered with any one of these networks, you may restrict the SIM registration with a particular network by setting the Preferred Network Mode. You may select the Preferred Network Mode from these options:

- **Dual Mode:** The SIM gets registered with the UMTS (3G) network. When the UMTS network is unreachable, the SIM gets registered with the GSM (2G) network automatically.

- **GSM:** The SIM gets registered with GSM (2G) network only.

- **UMTS:** The SIM gets registered with UMTS (3G) network only.

If your Mobile port supports GSM only, do not change the default value of this parameter.

DTMF Dialing Method
The GSM module supports dialing of DTMF digits either using 'Module Resources' or 'System Resources'. SE is recommended to select the suitable method.

- **Using Module Resources:** In this method, the DTMF digits are dialed using AT commands. But this method depends on the network i.e. for how much time the DTMF tone should be generated depends upon the service provider. However, in some cases where DTMF On time is required for more detection at the remote end, it cannot be set by the module. (For example, in BSNL when we dial any DTMF digit, it generates DTMF for 50 ms only.)

- **Using System Resources:** In this method, the DTMF digits are dialed by specific hardware device of the system and is controlled by the software of the system. However, this method is also not so reliable because it depends upon the network conditions and during call through mobile network, generally there is break in the speech and it may not be detected properly at the remote end.

DTMF Outdial

The system supports sending of DTMF digits from the Mobile Ports ‘In-band’ or through signaling, that is, ‘Using AT Command’. You can select the appropriate DTMF Outdial Option.

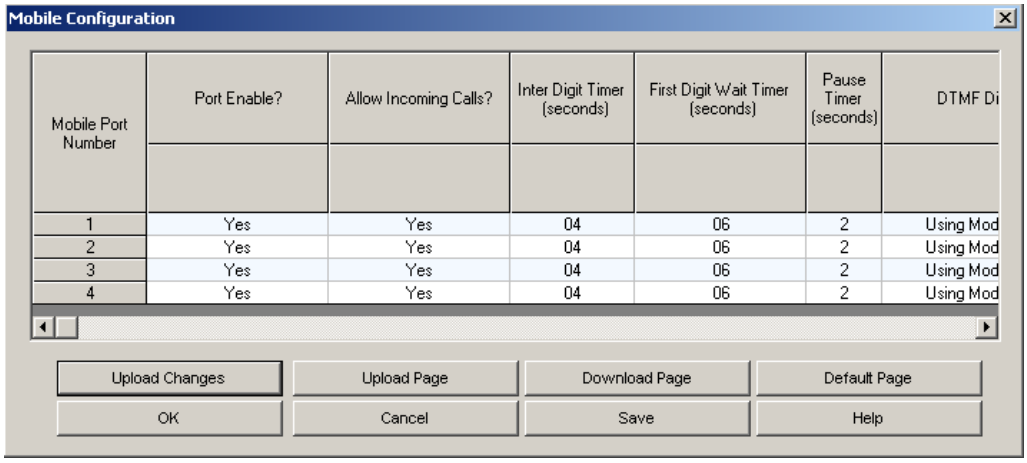
DTMF ON Time
This is the time for which the DTMF digits will remain On while being dialed out by SIMADO GFX44. This timer finds its application in *Multistage Dialing* and in *DTMF Outdialing using AT Commands*.

DTMF Inter Digit Timer
This is the time for which the system waits after dialing out each DTMF digit.

How to Program?

Programming using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer "Programming SIMADO GFX44")
- On the 'Main Menu' page, log in to Jeeves and click the '**Mobile Configuration**' button.



- **Port Enable?:** Select 'No' from the combo box to disable the Mobile Port. ***By default, 'Yes' is selected in this field.***
- **Allow Incoming Calls?: By default, 'Yes' is selected.** If you want to block incoming calls select 'No'.
- **Inter Digit Timer (seconds):** Program Inter Digit Timer in this field. Range of Inter Digit Timer is from 01 to 99 seconds. ***By default, it is 04 seconds.***
- **First Digit Wait Timer (seconds):** Program First Digit Wait Timer in this field. Range of First Digit Wait Timer is from 01 to 99 seconds. ***By default, it is 06 seconds.***
- **Pause Timer (seconds):** Pause Timer is used to provide delay between dialing of two digits on the mobile port. Program Pause Timer in this field. Range of Pause Timer is from 1 to 9 seconds. ***By default, it is 2 seconds.***
- **DTMF Dialing Method during Multistage Dialing:** GFX44 supports two methods of dialing DTMF digits on the mobile port during multistage dialing: **Using Module Resources** and **Using System Resources**. Select the appropriate method of dialing DTMF digits on the mobile port in this field. ***By default, it is 'Using Module Resources'.***
- **DTMF Outdial Option:** Select the appropriate method for dialing DTMF digits from the mobile port. You may select Using AT Commands or In-band. By default, In-band is selected.
- **DTMF Outdial-On Time:** Set the DTMF Out Dial-ON Time in this field. The range of DTMF On Time is from 50 to 200 milliseconds.By default it is set to 100 milliseconds.
- **Inter Digit Timer**: Set the DTMF Inter Digit Timer to the desired duration. The range of this timer is from 20 to 200 milliseconds. By default it is set to 100 milliseconds.
- **Rx Gain:** Program Rx Gain in this field to improve the audibility of the incoming speech. Valid options for Rx Gain are:
  - Very Low

- Low
- Normal
- High
- Very High

By default, Rx Gain is Normal for each Mobile Port.

- **Tx Gain (db):** Program Tx Gain in this field to improve the output RF signal from GFX44. Valid options for Tx Gain are:
  - Very Low
  - Low
  - Normal
  - High
  - Very High

  By default, Tx Gain is Normal for each mobile port.

- **Frequency Band (MHz):** Select GSM frequency band from the following options:
  - 900
  - 1800
  - 1900
  - 850+1900
  - 900+1800
  - All Bands

  By default, All Bands is selected.

Frequency Band selection not required if SIMCOM 3G module is installed in SIMADO GFX44.

- **Preferred Network Mode:** Select the network with with the SIM card in the mobile port should get registered. You may select:
  - **Dual Mode** to register the SIM with 2G (GSM) or 3G(UMTS) network, whichever is available.
  - **GSM** to register the SIM with 2G GSM network.
  - **UMTS** to register the SIM with 3G(UMTS) network.

  By default, Dual Mode is selected.

- **Returned Calls to Original Callers (RCOC):** (Please refer "Returned Calls to Original Callers (RCOC)" feature for details)

- **Fixed Dialing:** Program this parameter to assign Fixed Dialing Routing Type to the Mobile Port. (Refer "Routing Type" for more details)

- **Allowed Denied Numbers:** Program Allowed-Denied Numbers Table. (Refer "Allowed-Denied Numbers" topic for feature explanation)

- **Time Table:** (Refer "Time Table" topic for the details)

- **Time Zone 1:** Program following parameters for time zone 1 here.
  - **Routing Type:** Program Routing Type for time zone 1 in this field.
  - **Routing Group:** Program Routing Group for time zone 1 in this field.

  (Refer "Routing Type" and "Routing Group" for more details)

- **Time Zone 2:** Program following parameters for time zone 2 here.
  - **Routing Type:** Program Routing Type for time zone 2 in this field.
  - **Routing Group:** Program Routing Group for time zone 2 in this field.

  (Refer "Routing Type" and "Routing Group" for more details)

- **Time Zone 3:** Program following parameters for time zone 3 here.
  - **Routing Type:** Program Routing Type for time zone 3 in this field.
  - **Routing Group:** Program Routing Group for time zone 3 in this field.

  (Refer "Routing Type" and "Routing Group" for more details)

- **Time Zone 4:** Program following parameters for time zone 4 here.
  - **Routing Type:** Program Routing Type for time zone 4 in this field.
  - **Routing Group:** Program Routing Group for time zone 4 in this field.

  (Refer "Routing Type" and "Routing Group" for more details)

- **Call Minutes:** (Refer "Call Minutes" topic for details)

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To Program Port Status
  Use the following command to enable/disable the Mobile Port:
  271-Mobile Port-Code-#*
  Where,
  Mobile Port is from 1 to 4.

Code	Meaning
0	Disable
1	Enable

  By default, all the mobile ports are enabled.

  Use the following command to enable/disable all the Mobile Ports:
  271-*-Code-#*

- To program Incoming Calls
  Use the following command to Allow / Disallow Incoming Calls on a Mobile Port
  270 - Mobile Port - Code - #*
  Where,
  Mobile port is from 1-4
  Code means

Code	Meaning
0	No
1	Yes

  By default, all mobile ports are enabled.

  Use the following command to program whether to Allow / Disallow Incoming Calls for all Mobile ports:
  270 -* - Code - #*

- To Program Inter Digit Wait Timer
  This timer signifies the time between dialing of two digits on the Mobile Port.

  Use the following command to program inter digit wait timer for a Mobile Port:
  274-Mobile Port-Inter Digit Wait Timer-#*
  Where,
  Mobile Port is from 1 to 4.

Inter Digit Wait Timer is from 01 to 99 seconds.
By default, it is 04 seconds.

Use the following command to program the Inter Digit Wait Timer for all Mobile Ports:
274-*-Inter Digit Wait Timer-#*

- To Program First Digit Wait Timer
  First digit wait timer signifies the time for which the system waits for the user to dial a digit after the port goes OFF-Hook.

  Use the following command to program the First Digit Wait Timer for Mobile Port:
  276-Mobile Port-First Digit Wait Timer-#*
  Where,
  Mobile Port is from 1 to 4.
  First Digit Wait Timer is from 01 to 99 seconds.
  By default, it is 06 seconds.

  Use the following command to program the First Digit Wait Timer for all Mobile Ports:
  276-*-First Digit Wait Timer-#*

- To Program Pause Timer
  (Refer "Multi-Stage Dialing" topic for programming details)

- To Program DTMF Dialing Method
  (Refer "Multi-Stage Dialing" topic for programming details)

- To Program DTMF Out dial ON Time
  (Refer "Multi-Stage Dialing" topic for programming details)

- To Program DTMF Inter Digit Timer
  (Refer "Multi-Stage Dialing" topic for programming details)

- To Program Receive Gain
  Use the following command to program the receive gain of the Mobile Port:
  272-Mobile Port-Receive Gain-#*
  Where,
  Mobile Port is from 1 to 4.
  Receive Gain range is from 1 to 5, where 1 is minimum and 5 is maximum gain.

Receive Gain	Meaning
1	Very Low
2	Low
3	Normal
4	High
5	Very High

  By default, Receive Gain is 3 for each Mobile Port.

  Use the following command to program the receive gain of all the Mobile Ports:
  272-*-Receive Gain-#*

- To Program Transmit Gain
  Use the following command to program the transmit gain of the Mobile Port:
  273-Mobile Port-Transmit Gain-#*

Where,
Mobile Port is from 1 to 4.

Transmit Gain range is from 1 to 5, where 1 is minimum and 5 is maximum gain.

Transmit Gain	Meaning
1	Very Low
2	Low
3	Normal
4	High
5	Very High

By default, Transmit Gain is 3 for each Mobile Port.

Use the following command to program the transmit gain of all the Mobile Ports:
273-*-Transmit Gain-#*

- To Program Mobile Frequency Band for Mobile Port

  Use the following command to program Mobile Frequency Band for Mobile Port:
  278-Mobile Port-Mobile Frequency Band-#*
  Where,
  Mobile Port is from 1 to 4.

Mobile Frequency Band	Band Selection for GSM (Freq. in MHz)
1	900
2	1800
3	1900
4	850+1900
5	900+1800
6	All Bands

  By default, Mobile Frequency Band is 'All Bands'.

  For example, program GSM frequency band '4' for countries which support both 850 and 1900 MHz

  Use the following command for selection of Mobile Frequency Band on all Mobile Ports:
  278-*-Mobile Frequency Band-#*

- To program Preferred Network Mode

  Use the following command to program Preferred N/w Mode for the Mobile Port
  236-Mobile Port-Preferred N/w Mode-#*
  Where,

Preferred N/w Mode	Network
1	Dual
2	GSM
3	UMTS

  By default, Preferred N/w Mode is 1 for each Mobile Port.

Use the following command to program Preferred N/w Mode for all Mobile Ports
236-*-Preferred N/w Mode-#*

- To program DTMF Outdial:

  Use the following command to program DTMF Outdial Option

  237-Mobile Port- DTMF Outdial Option -#*
  Where,
  Mobile Port is from 1 to 4

DTMF Outdial Option	Meaning
1	In-band
2	Using AT Command

  By default, In-band is selected.

  Use the following command to program DTMF Outdial Option for all Mobile Ports
  237-*- DTMF Outdial Option -#*

- To Program Returned Calls to Original Callers (RCOC)
  (Refer "Returned Calls to Original Callers (RCOC)" for details)

- To program Fixed Dialing Table for Mobile Port:
  (Refer "Fixed Dialing" for details)

- To Program Allowed Denied Number Table for Mobile Port:
  (Refer "Allowed-Denied Numbers" for programming Allowed-Denied Number Table for Mobile Port)

- To Program Automatic Number Translation Table for Mobile Port:
  (Refer "Automatic Number Translation" for programming Automatic Number Translation Table for Mobile Port)

- To Program Time Table for Mobile Port:
  (Refer "Time Table" for details)

- To program Time Zone Tables for Mobile Port:
  (Refer "Routing Group" and "Routing Type" for details)

- To generate debug for Mobile Port Module
  (Refer "Communication Port" topic for debug of Mobile Port module)

Network Response Timer signifies the time for which the system waits for a response from the network. This timer is fixed 150 seconds, for all mobile ports.

Relevant Topics:

1. "Automatic Number Translation" 24
2. "Multi-Stage Dialing" 75
3. "Mobile Network Selection" 69
4. "Port Parameters-FXS" 85

Reinstate the Default Settings

GFX44 is supplied with a pre-defined set of variables like Mobile Port Parameters, FXS Port Parameters, SIM PIN, Call Progress Tones etc. These pre-set settings are called default settings. You will find the default value(s) of each programmable parameter under the respective topic.

If the default setting suits your requirement then you may not even need to program the system, as the system is designed to work efficiently with the default settings. However, you may program the parameters to match your requirements. Sometimes, due to some programming error or due to some operating mistake, GFX44 goes haywire and it become difficult to analyze the problem. In such a situation, it is advisable to load default values in the system.

On defaulting GFX44, following parameters will be defaulted:

- Port Parameters-FXS
- Port Parameters-Mobile
- Routing Groups
- Number Lists
- CDR Filters
- Dialed Number String Table
- Time Table
- DST Parameters
- Clear RCOC Entries
- System Parameters

On defaulting SIMADO GFX44, following parameters will not change i.e. will not be defaulted:

- Call Detail Records
- Date and Time
- SIM PIN

Restoring Default Settings

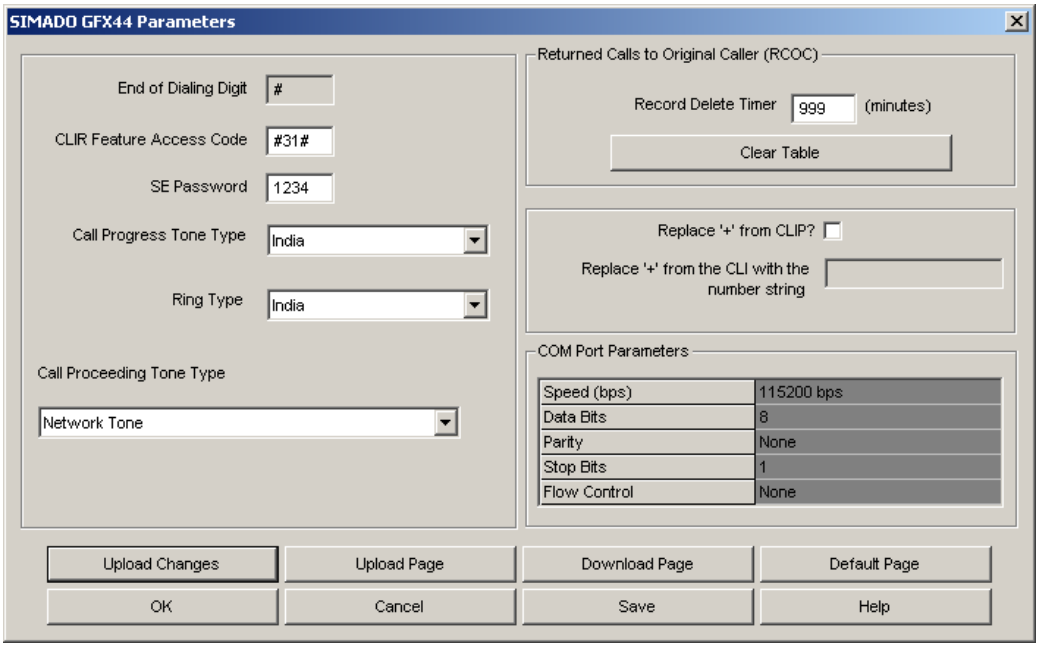
Default settings can be loaded or restored in the system either using Jeeves or issuing command from SE mode:

Using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)
- On the 'Main Menu' page, log in to Jeeves and click the '**Default SIMADO GFX44**' button. Dialog box with following message will appear on the screen:

  "This option will overwrite current system configuration with default values. All user features will be cleared and Jeeves will Log-Out. Do you want to continue?”

  Yes/No



- Click the 'Yes'. SE Password window will appear on the screen. Enter Reverse SE Password in the relevant field and click the 'OK'.
- System will restart and all the parameters will be assigned default values.

By issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

Use the following command to load the default configuration:
292-Reverse SE Password-#*
Reverse SE password is a number string of maximum 4 digits.
By default, SE Password is 1234. Therefore, Reverse of SE Password is 4321.

SIMADO GFX44 will restart as soon as command to load the default configuration is issued.

Relevant Topics:

1. “Getting Started” 11
2. “Programming SIMADO GFX44” 6

Restart the System

Sometimes it becomes necessary for the SE/User to restart SIMADO GFX44. Many a times it is difficult to walk down to the system and restart it. GFX44 gives facility to the SE/User to issue a command in SE mode to restart the system from the telephone instrument connected to it. This command does not alter any programming parameters and gives the same effect as switching OFF the system and switching it ON again.

You can restart the system either using Jeeves or by issuing command.

By Using Jeeves:

To restart GFX44 using Jeeves, follow the steps given below:

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)
- On the 'Main Menu' page, log in to Jeeves and click the 'Restart SIMADO GFX44' button. Dialog box with following message will appear on the screen:

  "This option will restart SIMADO GFX44. All the ongoing conversations will be disconnected. Do you wish to continue?”

  Yes/No

- Click the 'Yes'. SIMADO GFX44 will restart.

By issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

Use the following command to restart GFX44:
291-#*

- *Restarting the system does not default any programming parameters.*
- *Restart the system only after saving the configurations else the new configurations will be lost.*

Returned Calls to Original Callers (RCOC)

SIMADO GFX44 supports 'Returned Calls to Original Callers' feature. GFX44 maintains RCOC database in the configuration file of the system for proper functioning of the feature. When the user connected to GFX44 initiates a call to a mobile number and if that number is found busy/not responding then GFX44 will store calling party's number (GFX44 user), called party's number (remote mobile user) and originating/source port number (port through which GFX44 user initiated the call) in RCOC database if RCOC is enabled for that port.

In normal scenario, if the mobile user is busy/not-responding then the called party's number is stored in the memory of the mobile phone. Later on when the mobile user becomes free, he may call back the number that is stored in his missed call log. Now when the mobile user calls back the GFX44 user, GFX44 compares the calling party's number with the called party's numbers stored in RCOC database and if the best match is found then GFX44 will place the call on corresponding entry of originating source port of RCOC database.

Maximum 100 entries can be stored in RCOC table. Entry is stored in RCOC database only if the destination port is the Mobile Port. Source port can be either FXS Port or Mobile Port. Call details are stored in RCOC database only if RCOC feature is enabled on the destination mobile port.

SIMADO GFX44 supports three different types of RCOC:

1. **RCOC- On Busy**
   Entry is stored as RCOC-On Busy when the gateway user calls a mobile user and the mobile user is busy on another call.

2. **RCOC- On Speech**
   Entry is stored as RCOC-On Speech when the gateway user calls a mobile user and a speech is established between the two.

3. **RCOC- On No Reply**
   Entry is stored as RCOC-On No Reply when the gateway user calls a mobile user and there is no reply from the latter.

- *RCOC-on Busy and RCOC-on No Reply are not supported in SIMCOM 3G module.*

Default RCOC database maintained in the system is shown below:

Calling Party Number	Called Party Number	Originating S/w Port Number
16 digits	16 digits	FXS/Mobile

The call records stored in RCOC table is deleted from the database in the following situations:

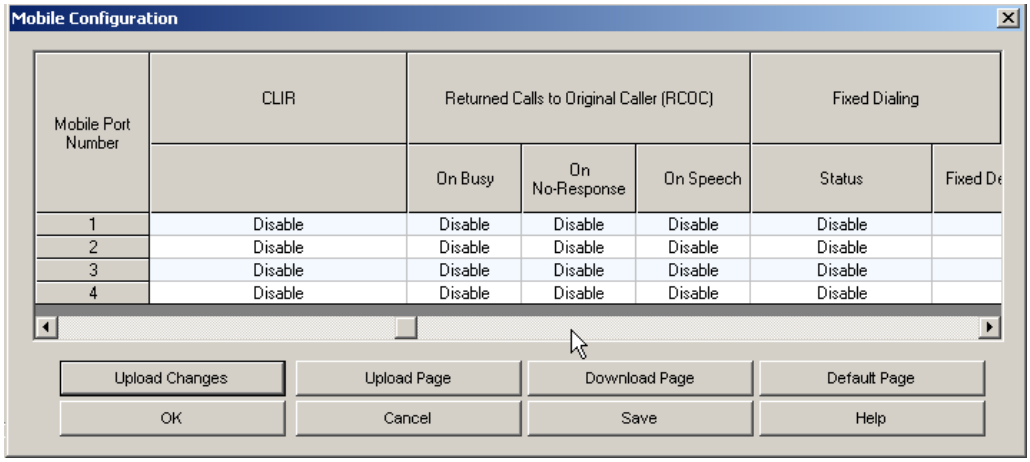
- The call record is deleted on expiry of record delete timer.
- The call record is deleted after the call has been placed on the relevant number.
- The call record is deleted when the called party calls back and the calling party is found busy and call is not routed to any other number.

How to Program?

Programming using Jeeves:

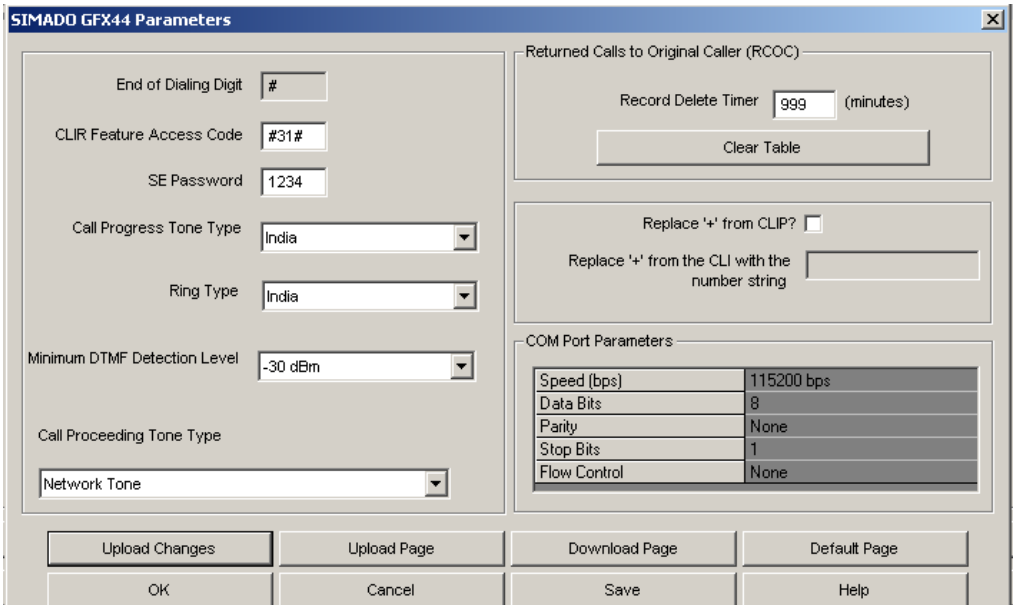
- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)

- Open 'Main Menu' page and log in to Jeeves. Click the 'Mobile configuration' button and go to 'Returned Calls to Original Callers' table.



- GFX44 supports three types of RCOC:
  - **RCOC-On Busy:** ***By default, this option is enabled for all the mobile ports.*** Disable it, if it is not required.
  - **RCOC-No Response:** ***By default, this option is enabled for all the mobile ports.*** Disable it, if it is not required.
  - **RCOC-On Speech:** ***By default, this option is enabled for all the mobile ports.*** Disable it, if it is not required.

- Click the '**SIMADO GFX44 Parameters**' button. Program 'Record Delete Timer' for RCOC table. ***By default, it is set to 999 minutes.*** Entries in RCOC table will be deleted automatically after the expiry of record delete timer for each entry.



- You can also clear RCOC table by clicking the 'Clear Table' button. Following message will appear on the screen.

- This option will delete all the 'Return Calls to Original Callers' records permanently from SIMADO GFX44. Do you wish to continue?" (Yes/No)

- Click the 'Yes' button to clear all the records in RCOC table.

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To set Record Delete Timer:
  This timer signifies the time after which the call record is deleted from the RCOC table.
  Use the following command to program record delete timer:
  221-Record Delete Timer-#*
  Where,
  Record Delete Timer is from 001 to 999 minutes.
  By default, it is set to 999 minutes.

- To Enable/Disable RCOC-On Busy on a Mobile Port:
  Use the following command to enable/disable RCOC-On Busy on a Mobile Port:
  222-Mobile Port-Code-#*
  Where,
  Mobile Port is from 1 to 4.

Code	Meaning
0	Disable
1	Enable

  By default, RCOC-On Busy is disabled for all the mobile ports.

  Use the following command to enable/disable RCOC-On Busy on all Mobile Ports:
  222-*-Code-#*

- To Enable/Disable RCOC-No Response on a Mobile Port:
  Use the following command to enable/disable RCOC-No Response on a Mobile Port:
  223-Mobile Port-Code-#*
  Where,
  Mobile Port is from 1 to 4.

Code	Meaning
0	Disable
1	Enable

  By default, RCOC-No Response is disabled for all the mobile ports.

  Use the following command to enable/disable RCOC-No Response on all Mobile Ports:
  223-*-Code-#*

- To Enable/Disable RCOC-On Speech on a Mobile Port:
  Use the following command to enable/disable RCOC-On Speech on a Mobile Port:
  224-Mobile Port-Code-#*
  Where,
  Mobile Port is from 1 to 4.

Code	Meaning
0	Disable
1	Enable

  By default, RCOC-On Speech is disabled for all the mobile ports.

  Use the following command to enable/disable RCOC- On Speech on all Mobile Ports:
  224-*-Code-#*

Use the following command to clear RCOC table entries:
225-#*

Relevant Topics:

1. “Port Parameters-Mobile” 94
2. “Routing Type” 113

Routing Group

SIMADO GFX44 supports two port types, viz. FXS and Mobile. When the call originates on the source port, it is required to be routed to the destination port as per the routing mechanism for that source port.

SE can program more than one destination port for each source port so that if one port is busy, call can be routed to another port. A routing group can be created by programming more than one destination port in the same group. SE can program maximum 8 routing groups. Each routing group can have maximum four members. Each port can be assigned different routing groups for different time zones.

SIMADO GFX44 selects the routing group for placing the call as per routing mechanism programmed for the port on which the call originates. Destination port (Member) from a routing group is selected as per member selection method assigned to that routing group. After selecting the group, SIMADO GFX44 selects the member from the selected group to place the call.

SIMADO GFX44 supports two methods of selecting a member from a group: First Free and Rotation.

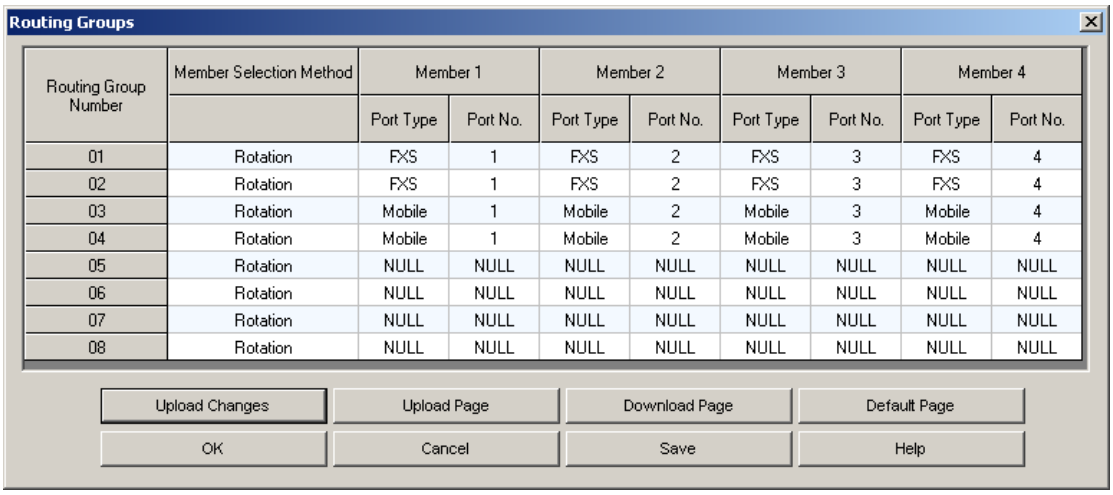
1. **First Free:** In this method, GFX44 selects the first free member from the Routing Group to place the call.

2. **Rotation:** In this method, GFX44 selects N+1th member of the routing group to place the call, where N is the last member selected by gateway for placing the call.

How to Program?

Programming using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)
- On the 'Main Menu' page, log in to Jeeves and click the '**Routing Groups**' button.



- In member selection method field, select the method for selecting a member in a group for placing the call. You can select either 'Rotation' or 'First Free' method of selecting a member. ***By default, 'Rotation' is selected.***

- Select Port Type and Port No for each member in a group. Port Type can be either FXS or Mobile. Port No. can be from 1 to 4.

- Save the changes and upload it to the system by clicking the 'Upload Page' or 'Upload Changes' button.

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To Program a Routing Group:
  Use the following command to program a routing group:
  201-Routing Group-Member Index-Port Type-Port Number-#*
  Where,
  Routing Group is from 01 to 16.
  Member Index is from 1 to 4.

Port Type	Meaning	Port Number
0	Null	0
1	FXS	1-4
2	Mobile	1-4

  Default Routing Group Table is given below:

Sr. No.	Member Selection Method	Member 1		Member 2		Member 3		Member 4	
		Port Type	Port Number	Port Type	Port Number	Port Type	Port Number	Port Type	Port Number
1	Rotation	FXS	1	FXS	2	FXS	3	FXS	4
2	Rotation	FXS	1	FXS	2	FXS	3	FXS	4
3	Rotation	Mobile	1	Mobile	2	Mobile	3	Mobile	4
4	Rotation	Mobile	1	Mobile	2	Mobile	3	Mobile	4
5	Rotation	Null	Null	Null	Null	Null	Null	Null	Null
6	Rotation	Null	Null	Null	Null	Null	Null	Null	Null
7	Rotation	Null	Null	Null	Null	Null	Null	Null	Null
8	Rotation	Null	Null	Null	Null	Null	Null	Null	Null

- To Program Member Selection Method for Routing Group:
  Use the following command to program member selection method for routing group:
  202-Routing Group-Member Selection Method-#*
  Where,
  Routing Group is from 01 to 16.

Member Selection Method	Meaning
1	First Free
2	Rotation

  By default, Member Selection Method is '2'.

- To Assign a Routing Group to a FXS Port for Time Zone1:
  Use the following command to assign a routing group to a FXS Port for Time Zone1:
  203-FXS Port-Routing Group-#*
  Where,
  FXS Port is from 1 to 4.
  Routing Group is from 01 to 16.
  By default, Routing Group 4 is assigned to all the FXS Ports.

  Use the following command to assign a routing group to all FXS Ports for Time Zone1:
  203-*-Routing Group-#*

- To Assign a Routing Group to a FXS Port for Time Zone2:
  Use the following command to assign a routing group to a FXS Port for Time Zone1:
  204-FXS Port-Routing Group-#*
  Where,
  FXS Port is from 1 to 4.
  Routing Group is from 01 to 16.
  By default, Routing Group 4 is assigned to all the FXS Ports.

  Use the following command to assign a routing group to all FXS Ports for Time Zone2:
  204-*-Routing Group-#*

- To Assign a Routing Group to a FXS Port for Time Zone3:
  Use the following command to assign a routing group to a FXS Port for Time Zone3:
  205-FXS Port-Routing Group-#*
  Where,
  FXS Port is from 1 to 4.
  Routing Group is from 01 to 16.
  By default, Routing Group 4 is assigned to all the FXS Ports.

  Use the following command to assign a routing group to all FXS Ports for Time Zone2:
  205-*-Routing Group-#*

- To Assign a Routing Group to a FXS Port for Time Zone4:
  Use the following command to assign a routing group to a FXS Port for Time Zone4:
  206-FXS Port-Routing Group-#*
  Where,
  FXS Port is from 1 to 4.
  Routing Group is from 01 to 16.
  By default, Routing Group 4 is assigned to all the FXS Ports.

  Use the following command to assign a routing group to all FXS Ports for Time Zone4:
  206-*-Routing Group-#*

- To Assign a Routing Group to a Mobile Port for Time Zone1:
  Use the following command to assign a routing group to a Mobile Port for Time Zone1:
  207-Mobile Port-Routing Group-#*
  Where,
  Mobile Port is from 1 to 4.
  Routing Group is from 01 to 16.
  By default, Routing Group 1 is assigned to all the Mobile Ports.

  Use the following command to assign a routing group to all Mobile Ports for Time Zone1:
  207-*-Routing Group-#*

- To Assign a Routing Group to a Mobile Port for Time Zone2:
  Use the following command to assign a routing group to a Mobile Port for Time Zone2:
  208-Mobile Port-Routing Group-#*
  Where,
  Mobile Port is from 1 to 4.
  Routing Group is from 01 to 16.
  By default, Routing Group 1 is assigned to all the Mobile Ports.

Use the following command to assign a routing group to all Mobile Ports for Time Zone2:
208-*-Routing Group-#*

- To Assign a Routing Group to a Mobile Port for Time Zone3:
  Use the following command to assign a routing group to a Mobile Port for Time Zone3:
  209-Mobile Port-Routing Group-#*
  Where,
  Mobile Port is from 1 to 4.
  Routing Group is from 01 to 16.
  By default, Routing Group 1 is assigned to all the Mobile Ports.

  Use the following command to assign a routing group to all Mobile Ports for Time Zone3:
  209-*-Routing Group-#*

- To Assign a Routing Group to a Mobile Port for Time Zone4:
  Use the following command to assign a routing group to a Mobile Port for Time Zone4:
  210-Mobile Port-Routing Group-#*
  Where,
  Mobile Port is from 1 to 4.
  Routing Group is from 01 to 16.
  By default, Routing Group 1 is assigned to all the Mobile Ports.

  Use the following command to assign a routing group to all Mobile Ports for Time Zone3:
  210-*-Routing Group-#*

- *Destination port (Member) from a routing group is selected as per member selection method assigned to that routing group.*
- *If only one member is programmed in a selected routing group and that member is found busy then GFX44 selects another routing group to route the call.*
- *If all members in all the groups are found busy then GFX44 starts 'Routing Group Busy Wait Timer' and again checks for the first free member in all the groups for routing the call.*
- *In case the free member is not found before the expiry of 'Routing Group Busy Wait Timer' then the GFX44 rejects the call i.e. disconnects the call after giving busy tone.*

Relevant Topics:

1. “Routing Type” 113
2. “Time Table” 135

Routing Type

When a call lands on the source port, it has to be routed to the destination port. SIMADO GFX44 routes the call to the destination port as per the routing type programmed for that port. SE can program different routing types for different time zones for all FXS and Mobile Ports.

SIMADO GFX44 supports following call routing types:

1. **Answer Number Based Routing**
   Answer number based routing refers to the routing of calls depending on the number dialed by the user. For this routing type, program Dialed Numbers Table.

   When call originates on the source port and it the routing type programmed is 'Answer Number Based' then SIMADO GFX44 will answer the call and give dial tone to the caller. When caller dials the desired digits, it will route the call to the destination port as shown below:

   a. SIMADO GFX44 will check Emergency Number Table.
      - If dialed number matches any entry then gateway will route call as per routing group programmed for that number in emergency number table.
      - If dialed number does not match any emergency number then gateway will check allowed-denied number list.

   b. SIMADO GFX44 will check Allowed- Denied Number list.
      - If dialed number matches denied number list then gateway will give error tone and disconnect the call.
      - If dialed number matches allowed number list or does not match any list or match both the lists then gateway will check dialed numbers table.

   c. SIMADO GFX44 will check Dialed Numbers Table.
      - If the dialed number string matches with the number programmed in 'Dialed Numbers table' then SIMADO GFX44 will route the call to the destination port using routing group programmed for that number in dialed number table after applying ANT logic if enabled on the destination port.
      - If dialed number string does not match dialed number table then gateway will route the call using routing group programmed for the source port according to the time zone.

2. **Answer Fixed Routing**
   Answer fixed routing refers to the routing of the calls through fixed routing group. This method is applicable when calls initiated on a source port are to be routed to the destination port through a fixed routing group. SE should program fixed routing group for each FXS and Mobile Port for each Time Zone for this type of routing.

   When call originates on the source port and if routing type programmed is 'Answer-Fixed' then SIMADO GFX44 will answer the call and give dial tone to the caller. When caller dials the desired digits, it will route the call to the destination port as shown below:

   a. SIMADO GFX44 will check Emergency Number Table.
      - If dialed number matches any entry then gateway will route call as per routing group programmed for that number in emergency number table.
      - If dialed number does not match any emergency number then gateway will check allowed-denied number list.

b. SIMADO GFX44 will check Allowed- Denied Number list.
   - If dialed number matches denied number list then gateway will give error tone and disconnect the call.
   - If dialed number matches allowed number list or does not match any list or match both the lists then gateway will route the call to the destination port as per routing group programmed for the source port after applying ANT logic, if applicable.

3. **Direct Routing**
   This is the simplest method of call routing. In this type of routing, emergency number table, allowed-denied numbers table, automatic number translation table and dialed number string table is not checked by the system.

   When direct routing type is programmed for the FXS or Mobile Port then SIMADO GFX44 will directly route the call to the destination port without answering the call. In direct routing type, if the source port is FXS then call cannot be routed to the Mobile Port as mobile network cannot process the call with blank string.

In the routing type other than 'Direct Routing', if the destination port is not free then the user gets busy tone followed by error tone till the respective timer expires. The call gets disconnected when FXS Port goes On-Hook if source port is FXS and if source port is Mobile then the call gets disconnected after the expiry of busy and error tone timer.

In case of direct routing, if destination port is free then:
- If source port is FXS and destination port is Mobile: The call is dropped by GSM network because GSM network doesn't process the call with blank string.
- If both source port and destination port is FXS: The call is placed on the destination FXS Port.
- If source port is Mobile and destination port is FXS: The call is placed on FXS Port.
- If both source port and destination port is Mobile: The call is dropped by the GSM network because GSM network doesn't process the call with blank string.

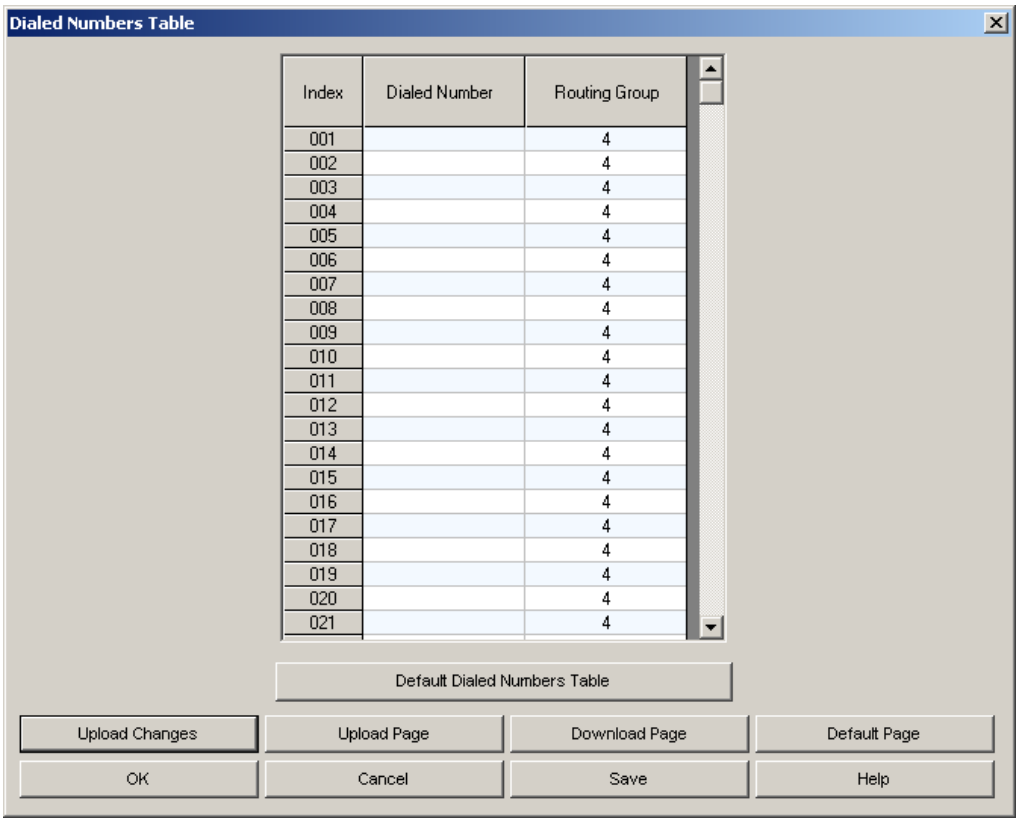
In case of direct routing, if destination port is busy then:
- If source port is FXS Port: The system will play busy tone till expiry of busy tone timer and then play the error tone, till error tone timer and finally gets disconnected when user goes On-Hook.
- If source port is Mobile Port: The user will get Ring Back Tone of the GSM network.

How to Program?

Programming using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)

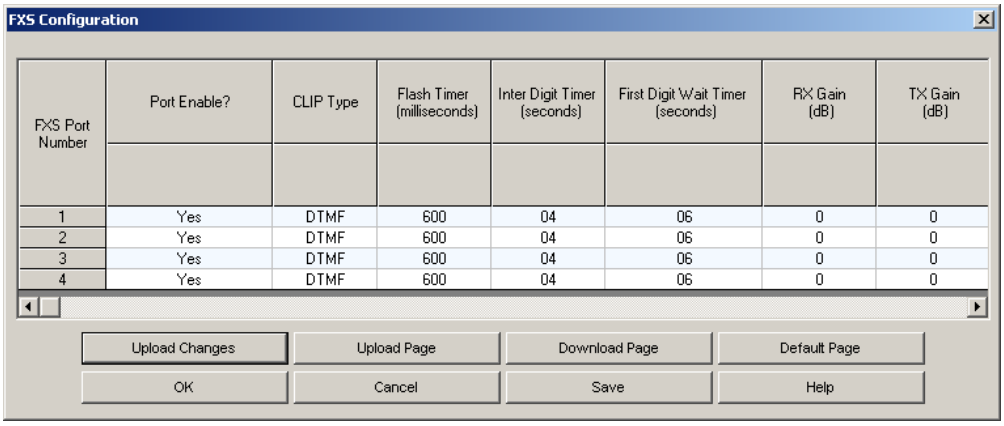
- Open 'Main Menu' page and log in to Jeeves. Click the '**Dialed Numbers Table**' button and program the following parameters:



  - **Index:** In this field, the number at which the entry is made is displayed. Maximum 250 entries can be made in the dialed numbers table.
  - **Dialed Numbers:** Program the numbers that user may dial in this field. ***By default, it is blank.***
  - **Routing Group:** Program the routing group in this field. GFX44 will route the dialed numbers to the destination port through this routing group.
  - **Default Dialed Numbers Table:** Click the **'Default Dialed Numbers Table'** button to default the dialed numbers table. An alert message will appear as shown below:

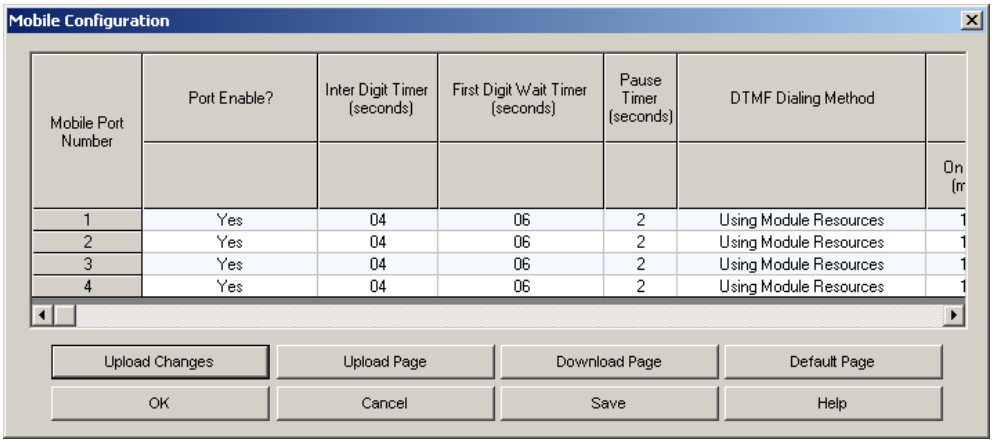
    Do you want to update this change in SIMADO GFX44 now? This option will clear entire dialed numbers table in SIMADO GFX44." Yes/ No. Click the 'Yes' button to clear entire dialed numbers table and update the changes in the system.

- Click the **'FXS Configuration'** and program following parameters:



- **Time Zone 1:** Program Routing Type and Routing Group for time zone1 for all FXS Ports. ***By default, Routing Type is Answer-Fixed and Routing Group is 4.***
- **Time Zone 2:** Program Routing Type and Routing Group for time zone2 for all FXS Ports. ***By default, Routing Type is Answer-Fixed and Routing Group is 4.***
- **Time Zone 3:** Program Routing Type and Routing Group for time zone3 for all FXS Ports. ***By default, Routing Type is Answer-Fixed and Routing Group is 4.***
- **Time Zone 4:** Program Routing Type and Routing Group for time zone4 for all FXS Ports. ***By default, Routing Type is Answer-Fixed and Routing Group is 4.***

- Click the **'Mobile Configuration'** and program following parameters:



- **Time Zone 1:** Program Routing Type and Routing Group for time zone1 for all Mobile Ports. ***By default, Routing Type is Direct and Routing Group is 1.***
- **Time Zone 2:** Program Routing Type and Routing Group for time zone2 for all Mobile Ports. ***By default, Routing Type is Direct and Routing Group is 1.***
- **Time Zone 3:** Program Routing Type and Routing Group for time zone3 for all Mobile Ports. ***By default, Routing Type is Direct and Routing Group is 1.***
- **Time Zone 4:** Program Routing Type and Routing Group for time zone4 for all Mobile Ports. ***By default, Routing Type is Direct and Routing Group is 1.***

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

To program Dialed Numbers Table:
Use the following command to program the number string in dialed numbers table:
151-Index-Number String-#*
Where,
Index is from 001 to 250.
Number string can be of maximum 8 digits. Valid characters are 0-9, #, *, A, B, C, D, F, P, W and +.

Special Digits are programmed using the codes given below:

Special Digits	Code
Flash (F)	#2
Pause (P)	#3
A	#4
B	#5
C	#6

Special Digits	Code
D	#7
+	#8
#	##
*	**
W	*1

By default, dialed number column is blank.

Use the following command to clear the dialed number string programmed at an index:
151-Index-#*
Where,
Index is from 001 to 250.

Use the following command to program the routing group for the dialed number programmed in dialed numbers table:
152-Index-Routing Group-#*
Where,
Index is from 001 to 250.
Routing Group is from 1 to 8.
By default, Routing Group is 4.

Use the following command to default the entire dialed number string table:
160-#*

To Assign Routing Type to the FXS Port:
Use the following command to assign routing type for time zone 1 to FXS Port:
181-FXS Port-Routing-Type-#*
Where,
FXS Port is from 1 to 4.

Routing Type	Meaning
0	OFF
1	Answer Number Based
2	Answer Fixed
3	Direct

By default, Routing Type for time zone 1 is 'Answer-Fixed' for all FXS Ports.

Use the following command to assign routing type for time zone 1 to all FXS Ports:
181-*-Routing-Type-#*

Use the following command to assign routing type for time zone 2 to FXS Port:
182-FXS Port-Routing-Type-#*
Where,
FXS Port is from 1 to 4.

Routing Type	Meaning
0	OFF
1	Answer Number Based
2	Answer Fixed
3	Direct

By default, Routing Type for time zone 2 is 'Answer-Fixed' for all FXS Ports.

Use the following command to assign routing type for time zone 2 to all FXS Ports:
182-*-Routing-Type-#*

Use the following command to assign routing type for time zone 3 to FXS Port:
183-FXS Port-Routing-Type-#*
Where,
FXS Port is from 1 to 4.

Routing Type	Meaning
0	OFF
1	Answer Number Based
2	Answer Fixed
3	Direct

By default, Routing Type for time zone 3 is 'Answer-Fixed' for all FXS Ports.

Use the following command to assign routing type for time zone 3 to all FXS Ports:
183-*-Routing-Type-#*

Use the following command to assign routing type for time zone 4 to FXS Port:
184-FXS Port-Routing-Type-#*
Where,
FXS Port is from 1 to 4.

Routing Type	Meaning
0	OFF
1	Answer Number Based
2	Answer Fixed
3	Direct

By default, Routing Type for time zone 4 is 'Answer-Fixed' for all FXS Ports.

Use the following command to assign routing type for time zone 4 to all FXS Ports:
184-*-Routing-Type-#*

To Assign Routing Type to the Mobile Port:
Use the following command to assign routing type for time zone 1 to a Mobile Port:
185- Mobile Port-Routing-Type-#*
Where,
Mobile Port is from 1 to 4.

Routing Type	Meaning
0	OFF
1	Answer Number Based
2	Answer Fixed
3	Direct

By default, Routing Type for time zone 1 is 'Direct' for all Mobile Ports.

Use the following command to assign routing type for time zone 1 to all Mobile Ports:
185-*-Routing-Type-#*

To Assign Routing Type for Time Zone2 to a Mobile Port:

Use the following command to assign routing type for time zone 2 to a Mobile Port:
186- Mobile Port-Routing-Type-#*
Where,
Mobile Port is from 1 to 4.

Routing Type	Meaning
0	OFF
1	Answer Number Based
2	Answer Fixed
3	Direct

By default, Routing Type for time zone 2 is 'Direct' for all Mobile Ports.

Use the following command to assign routing type for time zone 2 to all Mobile Ports:
186-*-Routing-Type-#*

To Assign Routing Type for Time Zone3 to a Mobile Port:
Use the following command to assign routing type for time zone 3 to a Mobile Port:
187- Mobile Port-Routing-Type-#*
Where,
Mobile Port is from 1 to 4.

Routing Type	Meaning
0	OFF
1	Answer Number Based
2	Answer Fixed
3	Direct

By default, Routing Type for time zone 3 is 'Direct' for all Mobile Ports.

Use the following command to assign routing type for time zone 3 to all Mobile Ports:
187-*-Routing-Type-#*

To Assign Routing Type for Time Zone4 to a Mobile Port:
Use the following command to assign routing type for time zone 4 to a Mobile Port:
188- Mobile Port-Routing-Type-#*
Where,
Mobile Port is from 1 to 4.

Routing Type	Meaning
0	OFF
1	Answer Number Based
2	Answer Fixed
3	Direct

By default, Routing Type for time zone 4 is 'Direct' for all Mobile Ports.

Use the following command to assign routing type for time zone 4 to all Mobile Ports:
188-*-Routing-Type-#*

Relevant Topics:

1. “Routing Group” 109
2. “Time Table” 135

Signal Strength

When caller tries to make a call on the GSM network, sometimes the call cannot be placed due to absence of signal or weak signal. Signal Strength feature enables SE to display the strength of network signals on the LCD of telephone instrument connected to the FXS port of GFX44.

Signal strength will be displayed on the SLT as '11111…' Signal strength is measured in dBm and it ranges from -113dBm to -51dBm. If FSK CLI is set on the FXS Port of GFX44 then the signal strength will be displayed in the format as shown below:

111111111111

Strength: -xxxdBm

The numbers indicate the strength of the network. Outgoing calls should be made only when the available network strength is high or maximum. When DTMF CLI is set on the FXS Port of GFX44, only the numbers will be displayed as follow:

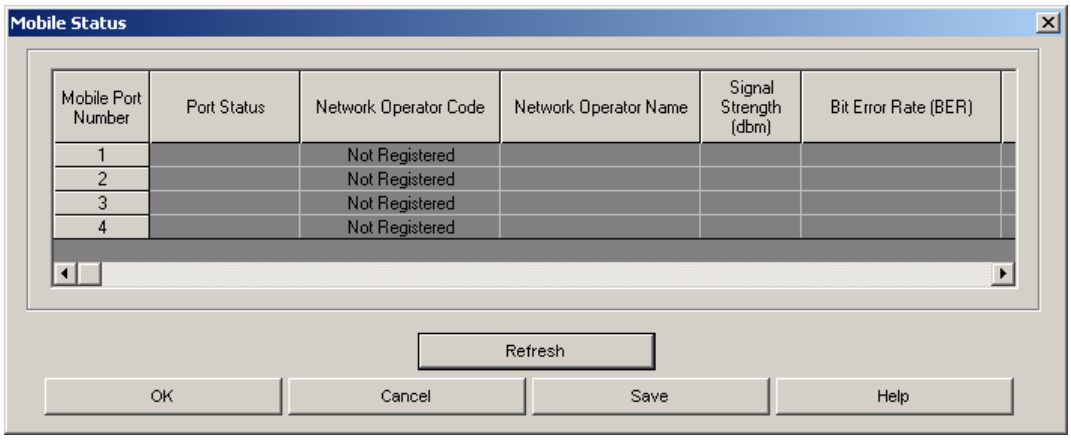
111111111111

If CLI type is programmed as 'None', user will get confirmation tone followed by ring but the signal strength will not be displayed on the SLT.

How to check Signal Strength?

Using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)
- Click the **'Mobile Status'** button to check signal strength of Mobile Network with which SIMADO GFX44 is registered.



- Click the **'Refresh'** button. You will be able to view signal strength of the mobile network to which SIMADO GFX44 is registered.

By issuing commands:

Issue command to display the signal strength, you will get confirmation tone. Go On-Hook. Signal strength will be displayed on the LCD of your telephone instrument. Go Off-Hook, you will get dial tone.

Use the following command to display the Signal Strength on SLT:
245-Mobile Port-#*
Where,
Mobile Port is from 1 to 4.

Relevant Topics:

1. “Port Parameters-FXS” 85
2. “Port Parameters-Mobile” 94

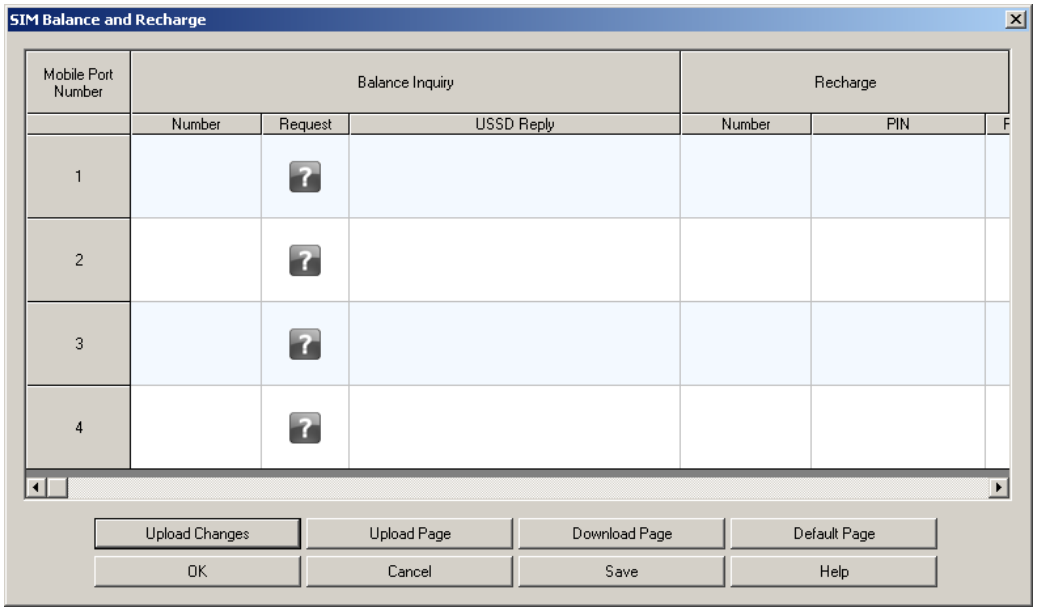
SIM Balance and Recharge

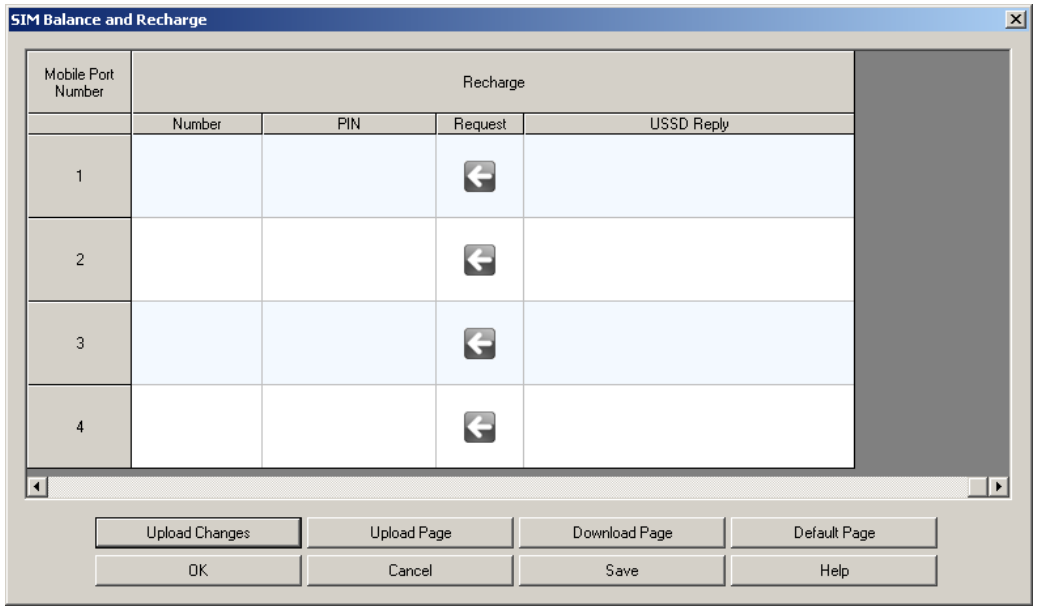
SIMADO GFX44 facilitates user to check balance of the prepaid SIM Card and recharge the same, if required. This feature depends on the network and also on the services provided by the service provider. This feature will work only when SIMCOM-2G, SIMCOM-3G and Wavecom-2G module is installed in SIMADO GFX44.

How to Program?

Programming using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)
- On the 'Main Menu' page, log in to Jeeves.
- Click the 'SIM Balance and Recharge' button and program the following parameters.





Balance Inquiry

- Balance Inquiry Number: Program the number provided by your network operator for checking the balance of your SIM Card in this field. Balance Inquiry Number can be of maximum 8 digits. Characters 0 to 9, # and * are allowed.

- **Request Button:** Click this button to make request to check the SIM Card balance.

- **USSD Reply:** Status of network response to the balance check request is displayed in this field.

Recharge

- **Recharge Number:** Program recharging service number provided by your network operator in this field. You can add balance to your prepaid SIM Card using this number. Recharge number can be of maximum 8 digits. Characters 0 to 9, # and * are allowed.

- **Recharge PIN:** Program PIN number printed on the Recharge Voucher in this field. Program # at the end of the Recharge PIN number. Recharge PIN can be of maximum 20 digits. Characters 0 to 9, # and * are allowed.

- **Request Button:** Click this button to make request to add balance in the SIM Card i.e. recharge the SIM Card.

- **USSD Reply:** Status of network response to the recharge SIM Card request is displayed in this field.

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To program Balance Inquiry Number
  Use the following command for programming the Balance Inquiry number for a Mobile Port:
  191-Mobile Port-Balance Inquiry Number-#*
  Where,
  Mobile Port is from 1 to 4.
  Balance Inquiry number can be of maximum 8 Digits and only characters 0 to 9, # and * are allowed.
  By default, Balance Inquiry number field is blank for all Mobile Ports.

  Use the following command for programming the Balance Inquiry number for all Mobile Ports:
  191-*-Balance Inquiry Number-#*

- To make Balance Inquiry
  Use the following command to make the Balance Inquiry for a Mobile Port:
  192-Mobile Port-#*
  Where,
  Mobile Port is from 1 to 4.

- *SIMADO GFX44 will execute command to make balance inquiry only if the Mobile Port is enabled, registered and idle.*
- *Balance Inquiry response will be displayed on the FXS Port only if CLI type is programmed as FSK.*

- To program Recharge Number
  Use the following command for programming the Recharge Number for a Mobile Port:
  193-Mobile Port-Recharge Number-#*
  Where,

Mobile Port is from 1 to 4.
Recharge Number can be of maximum 8 digits and only characters 0 to 9, # and * are allowed.
By default, Recharge Number field is blank for all Mobile Ports.

Use the following command for programming the Recharge Number for all Mobile Ports:
193-*-Recharge Number-#*

- To program Recharge PIN
  Use the following command for programming Recharge PIN for a Mobile Port:
  194-Mobile Port-Recharge PIN-#*
  Where,
  Mobile Port is from 1 to 4.
  Recharge PIN can be of maximum 20 digits and only characters 0 to 9, # and * are allowed.
  By default, Recharge PIN field is blank for all Mobile Ports.

- To make Recharge Request
  Use the following command to make recharge request for a Mobile Port:
  195-Mobile Port-#*
  Mobile Port is from 1 to 4.

- *SIMADO GFX44 will execute command to recharge a Mobile Port only if the Mobile Port is enabled, registered and idle.*
- *Recharging response will be displayed on the FXS Port only if CLI type is programmed as FSK.*

SIM PIN

SIM is a smart card containing all subscriber specific data stored in it. A default Personal Identification Number (PIN) is stored in the SIM Card. SIM PIN is a security feature used by the GSM network. SE is recommended to enable SIM protection of the SIM card to protect it from being misused.

How SIM PIN protection works?

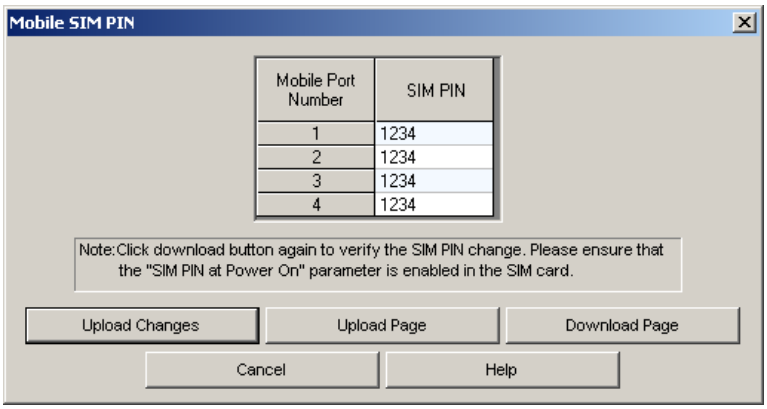
- At every Power On, the module will send SIM PIN request to the system. (If SIM protection in the SIM Card is enabled)
- The system will send the SIM PIN stored in the configuration to the module. The GSM module gets registered with the GSM network, if correct SIM PIN is issued.
- SIM PIN sent by the system should match the one that is stored in the SIM Card.
- If wrong SIM PIN is issued for three times then the system will ask for the Personal Unlock Keyword. PUK number is a unique number assigned to every SIM card by the service provider.
- If the SIM Card is locked then SE must contact the service provider and get PUK number from him to unlock the card. If wrong PUK number is entered for ten times then the SIM card will become useless.
- GSM module gets initialized only if SIM PIN of the SIM Card and that of the system matches. Hence it is necessary that the SIM PIN of SIM Card and the one that is stored in the system is same.
- If SIM PIN of SIM Card and the system is different, follow the steps given below:
  - Switch Off GFX44.
  - Remove SIM card and insert the same in the mobile instrument.
  - Enable 'SIM PIN at Power ON' parameter in the SIM card. (This step is not required if SIM protection is already ON)
  - Change the SIM PIN of the SIM card to 1234 i.e. the default SIM PIN of the system.
  - Remove SIM card from the mobile instrument and insert it in GFX44.
  - Switch on the system and change the SIM PIN after GFX44 attains normal working position by issuing command shown in 'How to Program?' topic below.
  - When SIM PIN change command is issued by the SE after following the above steps, SIM PIN of both SIM Card and that of the system is changed simultaneously.

- *SIM PIN value is not set to default / does not change, if the system is set to default or the software version revision is changed.*

How to Program?

Programming using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)
- On the 'Main Menu' page, log in to Jeeves and click the '**Mobile SIM PIN**' button.



- In 'SIM PIN' field, program SIM PIN for required mobile port.
- log in to Jeeves page and upload the changes in the system by clicking the 'Upload Changes' or 'Upload Page' button.
- You can also download SIM PIN by clicking the 'Download Changes' button.

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To Program Mobile SIM PIN
  Use the following command to change the SIM PIN of a mobile port:
  243-Mobile Port-New SIM PIN-#*
  Where,
  Mobile Port is from 1 to 4.
  New SIM PIN can be of minimum 4 digits and maximum 8 digits.
  Valid digits for SIM PIN are 0 to 9.
  By default, it is 1234.

Relevant Topics:

1. “Getting Started” 11
2. “Port Parameters-Mobile” 94

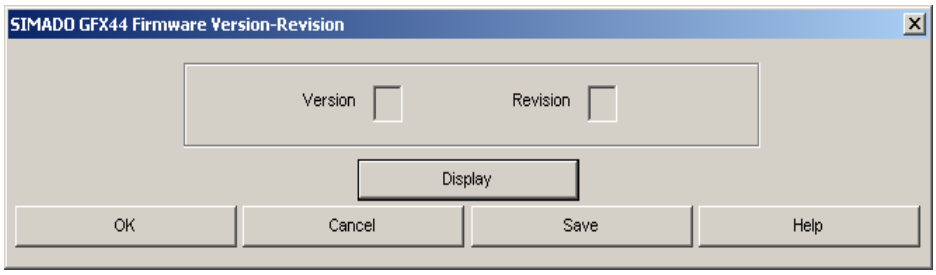
Software Version and Revision Display

Due to continuous feedbacks from the customer and for better performances of the products, up-gradation of software becomes inevitable. Before upgrading the current software, SE must know the current software version installed in GFX44. This feature enables SE to know the version revision of the software installed in the system without opening the system using the Jeeves.

How to use?

Follow the steps given below to check the software version revision:

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)
- On the 'Main Menu' page, log in to Jeeves and click the '**SIMADO GFX44 Firmware Version Revision**' button.



- SIMADO GFX44 Firmware Version Revision window will appear on the screen.
- Click the 'Display' button, Version and Revision of the firmware will be displayed in the respective fields.
- Click the 'OK' button and logout of the Jeeves.

- *The software version revision will be in following format: VxRy, where Vx software version number and Ry is software revision number.*
- *System takes some time to 'reset' at power ON. Hence, if SE tries to download the s/w version in this state, he may get version information as 'blank' or invalid data. Hence, the SE is requested to download the s/w version once the system is reset after power ON.*

Relevant Topics:

1. “Programming SIMADO GFX44” 6
2. “Port Parameters-FXS” 85

System Parameters

In SIMADO GFX44, certain global parameters are to be configured which are related to the entire system. These parameters are called System Parameters. Some of these parameters are discussed below:

- **End of Dialing Digit**
  End of Dialing is a mechanism by which SIMADO GFX44 detects end of dialing of a number string and then processes a call further for out-dialing. This feature enables faster out dialing of a number. Generally the system detects end of dialing on its FXS Port when the inter digit wait timer expires. SIMADO GFX44 also supports end of dialing by dialing a digit. ***By default, end of dialing digit is #.*** End of Dialing Digit is non-programmable.

- **Replace + from CLIP**
  GSM network presents the calling party number with prefix '+' to the called party. Few mobile equipments are unable to represent the calling party number if it contains '+'. SIMADO GFX44 provides flexibility to remove '+' and replace it with appropriate number string as required.

  Thus, if '+' is received in CLI number and 'Replace + from CLIP' is ticked then SIMADO GFX44 will check 'Replace + from incoming CLI number string' parameter.
  - If a number string is programmed in 'Replace + from incoming CLI number string' field then gateway will replace + with the number string programmed.
  - If 'Replace + from incoming CLI number string' field is left blank then gateway will strip off '+' from incoming CLI number and present the remaining numbers.
  - For e.g.: CLI number received is +919327237228
    - If replace string is programmed as 00 then CLI number displayed would be: ***00919327237228.***
    - If replace string is programmed as Blank then CLI number displayed would be: ***919327237228.***

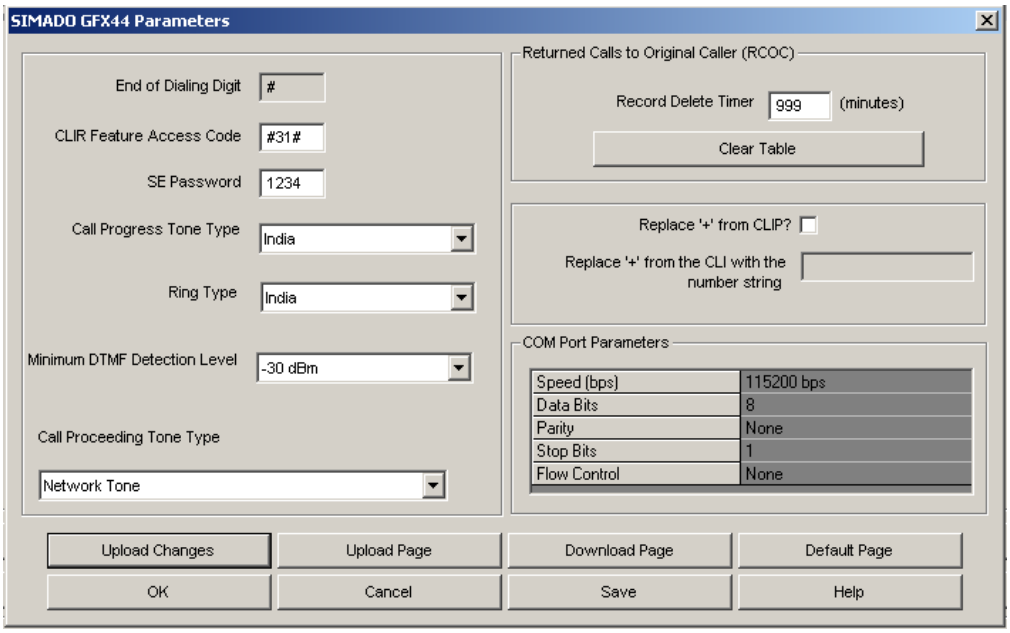
- **Ring Type**
  SIMADO GFX44 gives flexibility to the SE to match the frequency and cadences of the rings supported by the gateway to that of the country standard. SIMADO GFX44 has inbuilt ring cadences of various countries that enables SE to match the ring type of the gateway to that supported by the exchange of the country in which it is installed.

How to Program?

Programming using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer “Programming SIMADO GFX44”)

- On the 'Main Menu' page, log in to Jeeves and click the '**SIMADO GFX44 Parameters**' button. Following window will open.



- **End of Dialing Digit:** ***By default, end of dialing digit is #.*** End of Dialing Digit is non-programmable.
- **SE Password:** (Refer "System Security (Password)" for details)
- **Call Progress Tone Type:** (Refer "Call Progress Tones" for details)
- **Ring Type:** Select country in which SIMADO GFX44 is installed to match the ring type of gateway to that of the country standards. ***By default, India is selected.***
- **Call Proceeding Tone Type:** (Refer "Call Proceeding Tone" for details)
- **Replace or remove '+' character received in CLI:**
  - **Replace '+' from CLIP?:** Tick this option if you want to replace + from CLI with some other number string. ***By default, it is Untick.***
  - **Replace + from the CLI with the number string:** Program number string with which you wish to replace + in CLI. Replacement string can be of maximum 6 digits and valid digits are 0 to 9. This field will become editable only if 'Replace + from CLIP' is ticked. ***By default, it is blank.***
- **Returned Calls to Original Callers (RCOC):** (Refer "Returned Calls to Original Callers (RCOC)" for details)
- **COM Port Parameters:** (Refer "Communication Port" for details)
- **Minimum DTMF Detection Level:** You may define the minimum dB Level for detecting the DTMF digits by configuring the Minimum DTMF Detection Level. By default, -30dBm is set as the minimum level for DTMF detection.

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

- To change SE Password:
  (Refer "System Security (Password)" for details)
- To program Call Progress Tone Type:
  (Refer "Call Progress Tones" for details)

- To Program Ring Type
  Use the following command to select the country for matching the ring type:
  252-Code-#*
  Where,

Code	Country	Frequency (Hz)	CADENCE (In Seconds)			
			ON 1	OFF 1	ON 2	OFF 2
01	Australia	25	0.4	0.2	0.4	2.0
02	Belgium	25	1.0	3.0		
03	Brazil	25	1.0	4.0		
04	China	25	1.0	3.0		
05	Egypt	25	2.0	4.0		
06	France	25	1.5	3.5		
07	Germany	25	3.5	5.5	0.79	1.1
08	Greece	25	1.0	4.0		
09	India	25	0.4	0.2	0.4	2.0
10	Israel	25	2.0	3.0		
11	Italy	25	1.0	4.0		
12	Japan	25	1.0	2.0		
13	Korea	25	1.0	3.0		
14	Malaysia	25	2.0	3.0		
15	New Zealand	25	2.0	3.0		
16	Poland	25	2.0	3.0		
17	Portugal	25	1.0	5.0		
18	Russia	25	1.0	3.0		
19	Singapore	25	0.4	0.2	0.4	2.0
20	South Africa	25	0.4	0.2	0.4	2.0
21	Spain	25	1.5	3.0		
22	Thailand	25	2.0	3.0		
23	UAE	25	2.0	3.0		
24	UK	25	0.4	0.2	0.4	2.0

Code	Country	Frequency (Hz)	CADENCE (In Seconds)			
			ON 1	OFF 1	ON 2	OFF 2
25	USA/Canada	25	2.0	4.0		

By default, Code 09 i.e. India is selected.

- Call Proceeding Tone Type:
  (Refer "Call Proceeding Tone" for details)

- Replace or remove '+' character received in CLI:
  Use the following command to configure SIMADO GFX44 to strip '+'or not from received calling party number:
  216-Code-#*
  Where,

Code	Meaning
0	Do not make any modification in received CLI.
1	Replace '+' from CLI with the programmed replacement string.

By default, option 'Do not make any modification in received CLI' is programmed.

Use the following command to program the number string which is to be replaced with '+' in CLI:
217-Replacement String-#*
Where,
Replacement string can be of maximum 6 digits.
Valid digits are from 0 to 9.
By default, it is blank.

Use the following command to program replacement string as blank:
217-#*

To program Minimum DTMF Detection Level:

Use the following command to program the Minimum DTMF Detection Level:
218-Minimum DTMF Detection Level-#*

Minimum DTMF Detection Level	Meaning
01	0 dBm
02	-3 dBm
03	-6 dBm
04	-9 dBm
05	-12 dBm
06	-15 dBm
07	-18 dBm
08	-21 dBm
09	-24 dBm
10	-27 dBm

Minimum DTMF Detection Level	Meaning
11	-30 dBm

By default, it is -30dBm

- Returned Calls to Original Callers (RCOC):
  (Refer “Returned Calls to Original Callers (RCOC)” for details)

- COM Port Parameters:
  (Refer “Communication Port” for details)

Relevant Topics:

1. “Call Progress Tones” 42
2. “Call Progress Tones” 42
3. “Communication Port” 48
4. “Port Parameters-FXS” 85
5. “Port Parameters-Mobile” 94
6. “System Security (Password)” 133

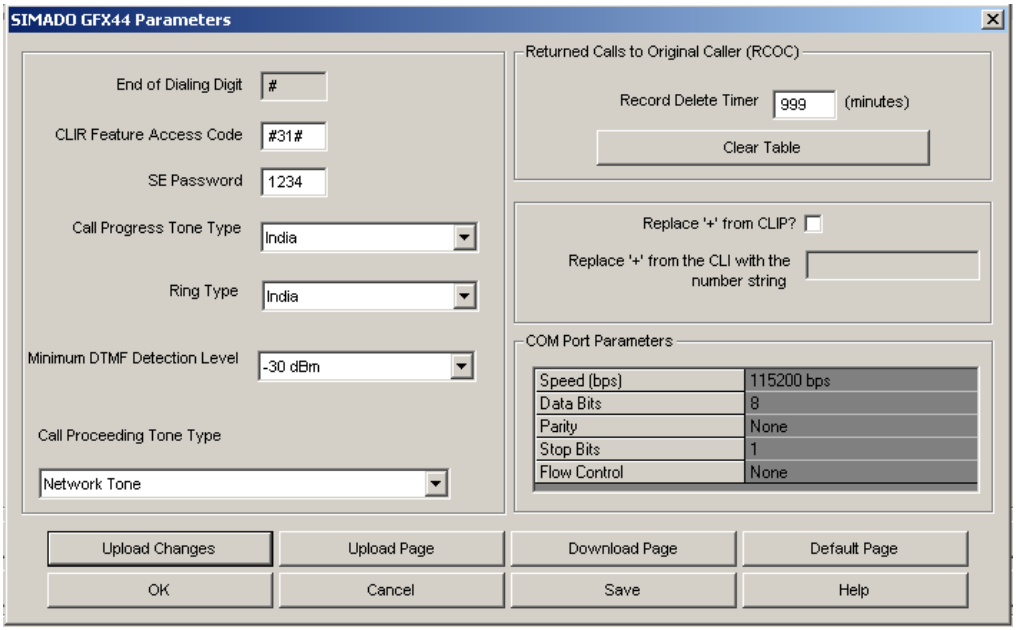
System Security (Password)

System Engineer can enter the programming mode to change the settings of the system with the help of SE Password. Default SE Password is 1234. SE Password can be changed either using Web Jeeves or by issuing command as shown below:

How to Program?

Programming SE password using Web Jeeves:

- Click the 'SIMADO GFX44 Parameters' link. '**SIMADO GFX44 Parameters**' window will open.



- **SE Password:** Change SE password in this field, if required. Default SE Password is 1234. SE Password is useful for entering the programming mode or to log in to Jeeves for programming SIMADO GFX44.

Programming SE Password using System Command:

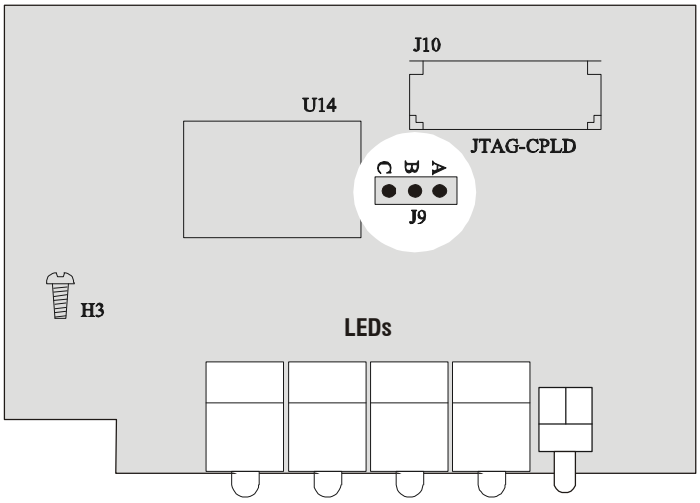
- Use the following command to change the SE password:
  293-New SE Password-#*
  Where,
  New SE Password is a number string of 4 digits.
  By default, SE password is 1234.

Default SE Password:

It is very important to remember the SE password. Without this password, it is not possible to enter the programming mode and change the settings. Thus it is advisable to note this password at a safe place. However, if the SE password is lost, then it can be set to its default value by following the steps given below:

- Switch Off the system

- Locate a mini jumper J9 on the main PCB



- Put the jumper in A-B position
- Switch it On
- Wait for 15 seconds
- Switch Off the system
- Restore the jumper in its original position (B-C)
- Switch it On again
- SE password gets defaulted (1234)

Relevant Topic:

1. “Programming SIMADO GFX44” 6

Time Table

Each day is divided into four time zones for each day of the week. It is possible to program SIMADO GFX44 such that a user may initiate a call from a particular port during particular time zone of each day of the week. Similarly, it is possible to route all the incoming calls on a particular Mobile Port during a particular time zone. For example, calls can be routed through Mobile Port in week days i.e. Monday to Friday whereas it can be routed through FXS Port on weekends. This is possible by programming Time Table in SIMADO GFX44.

How it works?

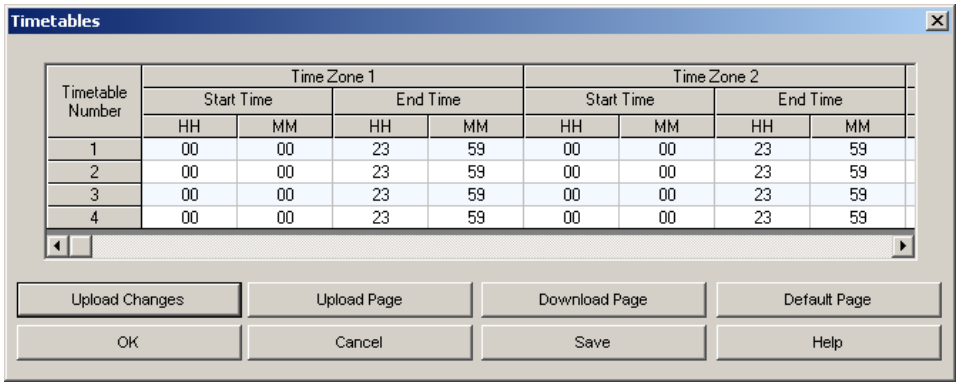
SIMADO GFX44 provides facility to program four time tables. Each time table is divided into four time zones. The SE can program different routing types and routing groups for each time zone in a time table and assign it to the desired port. Time Table can be assigned to each FXS and Mobile Port.

When a call originates on source port, the system checks the time table assigned to the source port. It determines the call routing option for the current time zone and routes the call accordingly. If no time table has been assigned to the source port the call routing option programmed for time zone 1 is chosen for routing the call.

How to Program?

Programming using Jeeves:

- Open Jeeves of SIMADO GFX44. (Refer 'Programming SIMADO GFX44)
- Open 'Main Menu' page and log in to Jeeves.
- Click the **'Time Tables'** button. A time table window will open.



- Program 'Start Time' and 'End Time' for all time zones for each day of the week as per your requirement.
- Assign Time table to each FXS Port in the time table column of FXS Configuration. ***By default, time table 1 is assigned to each FXS Port.***
- Assign Time table to each Mobile Port in the time table column of Mobile Configuration. ***By default, time table 1 is assigned to each Mobile Port.***

Programming by issuing commands:

Enter SE Mode (Programming mode) and follow the steps given below:

To Program Time Zones in the Time Table
Use the following command to program time zones in the time table:
331-Time Table-Day-Time Zone-Start Time-End Time-#*

Where,
Time Table is from 1 to 4.
Day is from 1 to 7. (1 is for Sunday and 7 is for Saturday)
Time Zone is from 1 to 4.
Start Time is in HH:MM format.
End Time is in HH:MM format.
HH is from 00 to 23.
MM is from 00 to 59.

Default Time Table is given below:

Time Table	Day	Time Zone 1				....	Time Zone 4			
		Start Time		End Time			Start Time		End Time	
		HH	MM	HH	MM		HH	MM	HH	MM
1	Sunday	00	00	23	59	....	00	00	23	59
	Monday	00	00	23	59	....	00	00	23	59
	Tuesday	00	00	23	59	....	00	00	23	59
	Wednesday	00	00	23	59	....	00	00	23	59
	Thursday	00	00	23	59	....	00	00	23	59
	Friday	00	00	23	59	....	00	00	23	59
	Saturday	00	00	23	59	....	00	00	23	59
2	Sunday	00	00	23	59	....	00	00	23	59
	Monday	00	00	23	59	....	00	00	23	59
	Tuesday	00	00	23	59	....	00	00	23	59
	Wednesday	00	00	23	59	....	00	00	23	59
	Thursday	00	00	23	59	....	00	00	23	59
	Friday	00	00	23	59	....	00	00	23	59
	Saturday	00	00	23	59	....	00	00	23	59
3	Sunday	00	00	23	59	....	00	00	23	59
	Monday	00	00	23	59	....	00	00	23	59
	Tuesday	00	00	23	59	....	00	00	23	59
	Wednesday	00	00	23	59	....	00	00	23	59
	Thursday	00	00	23	59	....	00	00	23	59
	Friday	00	00	23	59	....	00	00	23	59
	Saturday	00	00	23	59	....	00	00	23	59
4	Sunday	00	00	23	59	....	00	00	23	59
	Monday	00	00	23	59	....	00	00	23	59
	Tuesday	00	00	23	59	....	00	00	23	59
	Wednesday	00	00	23	59	....	00	00	23	59
	Thursday	00	00	23	59	....	00	00	23	59
	Friday	00	00	23	59	....	00	00	23	59
	Saturday	00	00	23	59	....	00	00	23	59

To Assign Time Table to the FXS Port:
Use the following command to assign time table to the FXS Port:
332-FXS Port-Time Table-#*
Where,
FXS Port is from 1 to 4.
Time Table is from 1 to 4.
By default, Time Table 1 is assigned to all the FXS Ports.

Use the following command to assign time table to all the FXS Ports:
332-*-Time Table-#*

To Assign Time Table to the Mobile Port:
Use the following command to assign time table to the Mobile Port:
333-Mobile Port-Time Table-#*
Where,
Mobile Port is from 1 to 4.
Time Table is from 1 to 4.
By default, Time Table 1 is assigned to all the Mobile Ports.

Use the following command to assign time tables to all the Mobile Ports:
333-*-Time Table-#*

Time Table gets defaulted when SE defaults the system.

Relevant Topics:

1. “Routing Type” 113
2. “Routing Group” 109
3. “Reinstate the Default Settings” 102

Appendix

Acronyms

ANT	Automatic Number Translation
BT	Busy Tone
COM Port	Communication Port
CLIP	Calling Line Identification and Presentation
CPT	Call Progress Tones
CPTG	Call Progress Tones Generation
DST	Daylight Savings Time
DTMF	Dual Tone Multi-Frequency
ET	Error Tone
FDWT	First Digit Wait Timer
FXS	Foreign Exchange Subscriber
GSM	Global System for Mobile (Communication)
HH	Hours
IMEI	International Mobile Equipment Identity
ITU	International Telecommunication Union
LED	Light Emitting Diodes
MCC	Mobile Country Code
MNC	Mobile Network Code
MM	Minutes
Ms	milliseconds
PBX	Private Branch Exchange
PIN	Personal Identification Number
PSTN	Public Switched Telephone Network
PWR	Power
RBT	Ring Back Tone
RCOC	Returned Calls to Original Callers
RTC	Real Time Clock
SE	System Engineer
Sec	Seconds (time)
SIM	Subscriber Identification Module
TZ	Time Zone

Frequently Asked Questions (FAQs)

Q.1. LED is not glowing after power up?
Ans. Check the power supply between mains and DC jack of SIMADO GFX44.

Q.2. I do not have PC to use serial Jeeves for configuration. Can I still change the system configuration?
Ans. Yes, you can enter into programming mode using command ****-19-1234*** followed by SE Password 1234 either from FXS or Mobile port and change configuration by issuing system commands.

Q.3. Can I use the SIM PIN protection in SIMADO GFX44?
Ans. Yes, you can use the SIM PIN protection in SIMADO GFX44. (Refer "SIM PIN" for more details)

Q.4. I am not able to make any call from FXS port. I only get error tone when I go off-hook from FXS port.
Ans. Check the status of port whether enable or not. If not, enable the port. Check the call routing for current time zone. (Refer "Routing Type" for details)

Q.5. SIMADO GFX44 does not register to GSM network?
Ans. Check whether the SIM card is properly inserted. Check SIM PIN. Check the availability of good GSM signal. Check the connectivity of antenna etc. (Refer "SIM PIN" and "Signal Strength" for details)

Q.6. Incoming calls on Mobile port are not getting placed on FXS, still caller gets ring back tone?
Ans. Check port status and routing type programmed for the Mobile Port. (Refer "Routing Type" and "Routing Group" for details)

Q.7. I am hearing garbled voice. What should I do?
Ans. If you are using antenna without wire, use wired antenna for better gain. If you are using wired antenna, change the antenna position.

Q.8. I have EPABX with FXS and FXO interface. Can SIMADO GFX44 be integrated with existing EPABX and also reduces the call cost?
Ans. Yes, you can connect SIMADO GFX44 with your existing EPABX. When installed with FXO ports of EPABX, it enables you to make calls from the extensions of EPABX, directly to GSM network which bypass the PSTN exchange and results in significant saving in call costs.

Q.9. I have FXO-VoIP gateway. Can SIMADO GFX44 be intergraded with existing gateway and also reduces the call cost?
Ans. Yes, you can connect SIMADO GFX44 with your existing FXO-VoIP gateway. When installed with FXO ports of VoIP gateway, it enables the direct routing of call between GSM and VoIP network which bypass the PSTN exchange and results in significant saving in call costs.

Product Specifications

Configuration/Capacity:

Description	Application	GFX44
Maximum Mobile Ports	GSM Network	4
Maximum FXS Ports	Analog Phone Connectivity	4
Antenna Port	Antenna Connection	1
COM Port-RS232C	Computer Connectivity	1

GSM Parameters:

GSM Band	:	Quad Band 850/900/1800/1900, programmable
Compliant	:	ETSI GSM Phase2 + Standard
SIM Card	:	One SIM per GSM Channel
RF Transmission Power	:	2W in case of 850/900MHz band 1W in case of 1800/1900MHz band
RF Sensitivity	:	Better than -106dBm

FXS (SLT) Port Parameters:

Connection	:	RJ11
Off Hook Line Impedance	:	600Ω (programmable)
Number of Long Loop extension lines	:	All extension for 360Ω loop limit. 2 extensions for 2700Ω (Max.) loop limit excluding telephone resistance.
Loop Feed	:	39mA (Max.)
Ringing Voltage	:	55Vrms @ 25Hz, 3 REN
Pulse Dialing	:	10pps and 20pps @ 1:2, 2:3 and 1:1
DTMF Dialing and Reception	:	ITU-T Q.23 and Q.24
CLIP	:	DTMF, FSK ITU-T V.23 and FSK Bellcore 202
Flash Timer	:	83-999 msec. (Programmable)
Answer Signaling on FXS	:	None, Polarity (Battery) Reversal
Disconnect Signaling on FXS	:	None, Polarity (Battery) Reversal, Open Loop Disconnect

Power Supply:

Power Supply	:	12VDC, 2 Amp.

Power Consumption:

Power Consumption	:	8W (Typical)

Antenna Parameters:

Type of Antenna	:	Dipole/Whip Fixed/Omni Directional Antenna, Roof-Top antenna with flexible cable of 3mtrs. is optional
Antenna Gain	:	2.5dBi
Antenna Connector	:	SMA (Female), 50Ω Impedance

Interface:

Communication Port	:	DB9 Connector (Male) (RS-232C)

LED Indication:

Number of LEDs	:	9 (4 Mobile, 4 FXS, 1 Power)
Power Supply Status	:	Power ON
Network Status	:	Present, Absent, SIMPIN Faulty, PUK Required
GSM Module Status	:	Module Fail

Environmental:

Operating Temperature	:	-10°C to +50°C (14°F to 122°F)
Store Temperature	:	-40°C to +85°C (40°F to 185°F)
Operating Humidity	:	5-95% RH, Non-Condensing
Storage Humidity	:	Max. 95% Non Condensing at 40°C (104°C)

Packaging:

Dimensions (W x H x D)	:	163 x 230 x 55 mm (6.42" x 9.06" x 2.17")
Unit Weight	:	0.740Kg (1.63lbs)
Shipping Weight	:	1.875Kg (4.13lbs)
Installation	:	Wall Mountable, Desk-Top

Warranty Statement

Matrix Comsec Pvt. Ltd. (Matrix) warrants to its consumer purchaser any of its products to be free of defects in material, workmanship and performance for a period of 15 months from date of manufacturing or 12 months from the date of installation which ever is earlier.

During this warranty period, Matrix will at its option, repair or replace the product at no additional charge if the product is found to have manufacturing defect. Any replacement product or part/s may be furnished on an exchange basis, which shall be new or like-new, provided that it has functionality at least equal to that of the product, being replaced. All replacement parts and products will be the property of Matrix. Parts repaired or replaced will be under warranty throughout the remainder of the original warranty period only.

This limited warranty does not apply to:

1. Products that have been subjected to abuse, accident, natural disaster, misuse, modification, tampering, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product or if the model or serial number has been altered, tampered with, defaced or removed.
2. Products which have been damaged by lightning storms, water or power surges or which have been neglected, altered, used for a purpose other than the one for which they were manufactured, repaired by customer or any party without Matrix's written authorization or used in any manner inconsistent with Matrix's instructions.
3. Products received improperly packed or physically damaged.
4. Products damaged due to operation of product outside the products' specifications or use without designated protections.

Warranty valid only if:

- Primary protection on all the ports provided.
- Mains supply is within limit and protected.
- Environment conditions are maintained as per the product specifications.

Warranty Card:

- When the product is installed, please return the warranty card with:
  - Date, signature and stamp of the customer
  - Date, signature and stamp of the channel partner

- Matrix assumes that the customer agrees with the warranty terms even when the warranty card is not signed and returned as suggested.

The Purchaser shall have to bear shipping charges for sending product to Matrix for testing/rectification. The product shall be shipped to the Purchaser at no-charge if the material is found to be under warranty. The Purchaser shall have to either insure the product or assume liability for loss or damage during transit.

Matrix reserves the right to waive off or make any changes in its warranty policy without giving any notice.

If Matrix is unable to repair or replace, as applicable, a defective product which is covered by Matrix warranty, Matrix shall, within a reasonable time after being notified of the defect, refund the purchase price of the product provided the consumer/purchaser returns the product to Matrix.

In no event will Matrix be liable for any damages including lost profits, lost business, lost savings, downtime or delay, labor, repair or material cost, injury to person, property or other incidental or consequential damages arising out of use of or inability to use such product, even if Matrix has been advised of the possibility of such damages or losses or for any claim by any other party.

Except for the obligations specifically set forth in this Warranty Policy Statement, in no event shall Matrix be liable for any direct, indirect, special, incidental or consequential damages whether based on contract or any other legal theory and where advised of the possibility of such damages.

Neither Matrix nor any of its distributors, dealers or sub-dealers makes any other warranty of any kind, whether expressed or implied, with respect to Matrix products. Matrix and its distributors, dealers or sub-dealers specifically disclaim the implied warranties of merchantability and fitness for a particular purpose.

This warranty is not transferable and applies only to the original consumer purchaser of the Product. Warranty shall be void if the warranty card is not completed and registered with Matrix within 30 days of installation.

All legal course of action subjected to Vadodara (Gujarat, India) Jurisdiction only.

System Commands

Description	*Programming Commands*
To enter into SE mode	***-19-SE Password**
To exit SE mode	***00-#***
Allowed and Denied Lists	
To assign an allowed number list to a FXS Port	***111-FXS Port-Number List-#***
To assign an allowed number list to all FXS Ports	***111-*-Number List-#***
To assign a denied number list to a FXS Port	***112-FXS Port-Number List-#***
To assign a denied number list to all FXS Ports	***112-*-Number List-#***
To assign an allowed number list to Mobile Port	***113-Mobile Port-Number List-#***
To assign an allowed number list to all Mobiles	***113-*-Number List-#***
To assign a denied number list to Mobile Port	***114-Mobile Port-Number List-#***
To assign a denied number list to all Mobiles	***114-*-Number List-#***
To enable/disable allowed/denied logic on FXS	***115-FXS Port-Code-#***
To enable/disable allowed/denied logic on all FXS	***115-*-Code-#***
To enable/disable allowed/denied logic on Mobile	***116-Mobile Port-Code-#***
To enable/disable allowed/denied logic on all Mobiles	***116-*-Code-#***
Automatic Number Translation	
To assign a dialed number list to a Mobile port	***123-Mobile Port-Number List-#***
To assign a dialed number list to all Mobile ports	***123-*-Number List-#***
To assign a substitute number list to Mobile	***124-Mobile Port-Number List-#***
To assign a substitute number list to all Mobiles	***124-*-Number List-#***
To enable/disable ANT logic on Mobile Port	***126-Mobile Port-Code-#***
To enable/disable ANT logic on all Mobile Ports	***126-*-Code-#***
Call Detail Recording (CDR)	
To Start/Stop the CDR Report	***131-Code-#***
To print all calls to terminated on FXS	***132-FXS Port-FXS Port-#***
To enable/disable the filter for calls terminated on FXS	***141-Code-#***
To print all calls to terminated on Mobile	***133-Mobile Port-Mobile Port-#***
To enable/disable the filter for calls terminated on Mobile	***142-Code-#***
To print all calls to originated on FXS	***134-FXS Port-FXS Port-#***
To enable/disable the filter for calls originated on FXS	***143-Code-#***
To print all calls to originated on Mobile	***135-Mobile Port-Mobile Port-#***
To enable/disable the filter for calls originated on Mobile	***144-Code-#***

Description	*Programming Commands*
To print all calls from-to-date	***136-DD-MM-YYYY-DD-MM-YYYY-#****
To print all calls between all calls	***137-HH-MM-HH-MM-#****
To print all calls called party number	***138-Number List-#****
To print all calls calling party number	***139-Number List-#****
To print all calls with call duration	***140-Seconds-#****
To set default filters	***149-#****
To clear CDR buffer	***150-Reverse SE Password-#****
Call Minutes	
To enable/disable Call Minutes for a Mobile Port	***311-Mobile Port-Flag-#****
To enable/disable Call Minutes for all Mobile Ports	***311-*-Flag-#****
To program free Call Minutes for a Mobile Port	***312- Mobile Port-Minutes Allowed- #****
To program free Call Minutes for all Mobile Ports	***312-*-Minutes Allowed- #****
To enable/disable Scheduled Reset for a Mobile Port	***313-Mobile Port-Flag-#****
To enable/disable Scheduled Reset for all Mobile Ports	***313-*-Flag-#****
To program the date for Scheduled Reset for a Mobile Port	***314-Mobile port-Date-#****
To program the date for Scheduled Reset for all Mobile Ports	***314-*-Date-#****
To reset Minutes manually for a Mobile Port	***315-Mobile Port-#****
To reset Minutes manually for all Mobile Port	***315-*-#****
To program the option when Minutes Used is equal to or greater than Minutes Allowed	***316-Mobile Port-Option-#****
To program the option when Minutes Used is equal to or greater than Minutes Allowed for all Mobile Ports	***316-*-Option-#****
To display Minutes Used on the telephone instrument	***317-Mobile Port-#****
Call Proceeding Tone	
To set call proceeding tone for Mobile	***277-Call Proceeding Tone-#****
Call Progress Tones (CPT)	
To program a CPTG for a country	***281-Code-#****
Calling Line Identification Restriction	
To enable/disable CLIR on the Mobile Port	***285-Mobile Port-Code-#****
To program CLIR Access Code	***110-Access Code-#****
To clear CLIR access code	***110-#****
Communication Port	
To start and stop the system debug	***309-Code-#****
To start and stop the mobile port debug	***279-Mobile Port-Code-#****

Description	*Programming Commands*
Date and Time	
To program the current date	***296-DD-MM-YYYY-#****
To program current time	***297-HH-MM-SS-#****
To program the day of the gateway	***298-Day-#****
Daylight Saving Time Adjustment	
To select DST Forward Time Adjustment Type	***321-DST Forward Time Adjustment Type-#****
To select DST Forward Parameter Day-Month wise	***322-Ordinal No.-Day-Month-HH-MM-HH-MM-#****
To select DST Forward Parameter Date-Month wise	***323-Date-Month-HH-MM-HH-MM-#****
To select DST Backward Time Adjustment Type	***324-DST Backward Time Adjustment Type-#****
To select DST Backward Parameter Day-Month wise	***325-Ordinal No.-Day-Month-HH-MM-HH-MM-#****
To select DST Backward Parameter Date-Month wise	***326-Date-Month-HH-MM-HH-MM-#****
Emergency Number Dialing	
To program the emergency number in table	***233-Index-Emergency Number-#****
To clear the emergency number at an index	***233-Index-#****
To assign routing group for an index	***234-Index-Routing Group-#****
Fixed Dialing	
To enable/disable fixed dialing on a FXS port	***171-FXS Port-Code-#****
To enable/disable fixed dialing on all FXS ports	***171-*-Code-#****
To program fixed destination number for FXS	***172-FXS Port-Number String-#****
To program fixed destination number for all FXS	***172-*-Number String-#****
To enable/disable fixed dialing on a Mobile port	***175-Mobile Port-Code-#****
To enable/disable fixed dialing on all Mobile	***175-*-Code-#****
To program fixed destination number for Mobile	***176-Mobile Port-Number String-#****
To program fixed destination number for all Mobile	***176-*-Number String-#****
International Mobile Equipment Identity	
To read IMEI number of mobile port	***By Jeeves***
Mobile Network Selection	
To program network selection mode for Mobile	***231-Mobile Port-Mode-#****
To program network selection mode for all Mobiles	***231-*-Mode-#****
To program network operator number with priority	***232-Mobile Port-Priority-Code-#****
To clear network operator number	***232-Mobile Port-Priority-#****
To read network operator code for mobile	***By Jeeves***
Mobile Port Status	
To know the type of network with which the Mobile Port is registered	***239-Mobile Port-#****

Description	*Programming Commands*
To display the Mobile Port status	***280-Mobile Port-#****
Multi-Stage Dialing	
To program 'Pause Timer' for Mobile Port	***275-Mobile Port-Pause Timer-#****
To program 'Pause Timer' for all the Mobile Ports	***275-*-Pause Timer-#****
To program the DTMF Dialing Method for Mobile Port	***282-Mobile Port-Code-#****
To program the DTMF Dialing Method for all the Mobile Ports	***282-*-Code-#****
To program 'DTMF Out dial ON Time' for Mobile Port	***283-Mobile Port-Code-#****
To program DTMF Out dial ON Time for all the Mobile Ports	***283-*-Code-#****
To program Inter Digit Pause Time for DTMF Dialing for Mobile Port	***284-Mobile Port-Code-#****
To program Inter Digit Pause Time for DTMF Dialing for all the Mobile Ports	***284-*-Code-#****
Number Lists	
To program a number string in a location	***101-Number List-Location Index-No. String-#****
To clear a location in the number list	***101-Number List-Location Index-#****
To clear all the location in the number list	***102-Number List-#****
Port Parameters-FXS	
To enable/disable a FXS port	***251-FXS Port-Code-#****
To enable/disable all the FXS ports	***251-*-Code-#****
To set Inter Digit Wait Timer for FXS	***253-FXS Port-Inter Digit Wait Timer-#****
To set Inter Digit Wait Timer for all FXS	***253-*-Inter Digit Wait Timer-#****
To set Flash Timer for FXS port	***254-FXS Port-Flash Timer-#****
To set Flash Timer for all FXS ports	***254-*-Flash Timer-#****
To set First Digit Wait Timer for FXS port	***255-FXS Port-First Digit Wait Timer-#****
To set First Digit Wait Timer for all FXS	***255-*-First Digit Wait Timer-#****
Program disconnect signal to generated on FXS on IC/OG	***256-FXS Port-Disconnect Signal-#****
To program disconnect signal to generated all FXS on IC/OG	***256-*-Disconnect Signal-#****
To program open loop disconnect timer on FXS	***257-FXS Port-Open Loop Disconnect Timer-#****
To program open loop disconnect timer all FXS	***257-*-Open Loop Disconnect Timer-#****
To set Transmit Gain on FXS port	***258-FXS Port-Code-#****
To set Transmit Gain on all the FXS ports	***258-*-Code-#****
To set Receive Gain on FXS port	***259-FXS Port-Code-#****

Description	*Programming Commands*
To set Receive Gain on all the FXS ports	***259-*-Code-#****
To program AC Impedance on FXS port	***260-FXS Port-Code-#****
To program AC Impedance on all FXS	***260-*-Code-#****
To program signal to be generated as answer signaling on FXS	***261-FXS Port-Answer Signal-#****
To program signal to be generated as answer signaling on all FXS	***261-*-Answer Signal-#****
To program threshold value of current for Off-hook detection on FXS Port	***262-FXS Port-Code-#****
To program threshold value of current for Off-hook detection on all FXS Ports	***262-*-Code-#****
To program value of current for On-hook detection on FXS Port	***263-FXS Port-Code-#****
To program value of current for On-hook detection on all FXS Ports	***263-*-Code-#****
To program CLIP type for FXS port	***161-FXS Port-CLIP Type-#****
To program CLIP type for all FXS ports	***161-*-CLIP Type-#****
Port Parameters-Mobile	
To enable/disable a Mobile port	***271-Mobile Port-Code-#****
To enable/disable all Mobile ports	***271-*-Code-#****
To Allow / Disallow Incoming Calls on a Mobile Port	**270 - Mobile Port - Code - #***
To Allow / Disallow Incoming Calls for all Mobile ports	**270 -* - Code - #***
To program a receive gain of a Mobile port	***272-Mobile Port-Receive Gain-#****
To program a receive gain of all Mobiles ports	***272-*-Receive Gain-#****
To program a transmit gain of a Mobile port	***273-Mobile Port-Transmit Gain-#****
To program a transmit gain of all Mobile ports	***273-*-Transmit Gain-#****
To set Inter Digit Wait Timer for a Mobile port	***274-Mobile Port-IDWT-#****
To set Inter Digit Wait Timer for all Mobile ports	***274-*-Inter Digit Wait Timer-#****
To set First Digit Wait Timer for a Mobile port	***276-Mobile Port-First Digit Wait Timer-#****
To set First Digit Wait Timer for all Mobiles ports	***276-*-First Digit Wait Timer-#****
To set mobile frequency band for a Mobile port	***278-Mobile-Mobile Frequency Band-#****
To set mobile frequency band for all Mobile ports	***278-*-Mobile Frequency Band-#****
To set Preferred Network Mode for a Moblie port	***236-Mobile Port-Preferred N/w Mode-#****
To set same Preferred Network Mode for all Mobile ports	***236-Preferred N/w Mode-#****
To program DTMF Outdial Option	***237-Mobile Port- DTMF Outdial Option -#****

Description	*Programming Commands*
Reinstate the Default Settings	
To set default all the parameters	***292-Reverse SE Password-#****
Restart the System	
To restart the system	***291-#****
Returned Calls to Original Callers (RCOC)	
To program record delete Timer	***221-Record Delete Timer-#****
To enable/disable RCOC for busy destination	***222-Mobile Port-Code-#****
To enable/disable RCOC for busy destination all mobiles	***222-*-Code-#****
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To assign a Routing Group to all FXS ports for TimeZone1	***203-*-Routing Group-#****
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To assign a Routing Group to all FXS ports for TimeZone2	***204-*-Routing Group-#****
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To assign a Routing Group to all Mobile ports for TimeZone3	***209-*-Routing Group-#****
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To clear dialed number string at an index	***151-Index-#****
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To assign routing type for TimeZone1 for all Mobiles	***185-*-Routing Type-#****
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To assign routing type for TimeZone2 for all Mobiles	***186-*-Routing Type-#****
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Regulatory Information

DECLARATION OF CONFORMITY

Manufacturer's Name:	Matrix Telecom Pvt. Ltd
Manufacturer's Address:	38-39, GIDC, Waghodia, Dist Vadodara 391 760
Declares that the products	
Product :	GSM Gateway
Model Type:	Simado GFX44
Trade Name:	MATRIX
Product Options	This declaration covers all options of the above products

Conforms to the following product specification.

EMI/EMC:

Standard

CISPR 22 Edition 5/ 5.2 2006-03 (Edition 5:2005 consolidated with amendment 1:2005 & 2:2006)
IEC 61000-3-2 Edition 2.2 2004-11 (Edition 2:200 consolidated with amendment 1:2001 and 2:2004)
IEC 61000-3-3 Edition 1.1 2002-03 (Edition 1:1994 consolidated with amendment 1:2001)
IEC 61000-4-2 Edition 1.2 2001-04 (Edition 1:1995 consolidated with amendment 1:1998 and 2:2000)
IEC 61000-4-3 Edition Third 2006-02
IEC 61000-4-4 Edition Second 2004-07
IEC 61000-4-5 Edition 1.1 2001-04 (Edition 1:1995 consolidated with amendment 1:2000)
IEC 61000-4-6 Edition 2.1 2004-11 (Edition 2:2003 consolidated with amendment 1:2004)
IEC 61000-4-8 Edition 1.1 2001-03 (Edition 1:1993 consolidated with amendment 1:2000)
IEC 61000-4-11 Edition Second 2004-03

SAFETY

IEC 60950 -1: 2001 first Edition.

Supplementary Information:

The Product herewith comply with the requirement of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC and carry the CE-marking accordingly.

MATRIX TELECOM PVT. LTD. VADODARA

CE

Mr.Ganesh Jivani
Director
Date: 18th Oct 2008 Vadodara

Declaration of Conformity
(RoHS Declaration)

We, Matrix Telecom Private Limited hereby declare that the product listed below, to which this Declaration of Conformity relates, is in the conformity with the requirement of the following European Union Directive for RoHS compliance:

Document No.	Title	Edition/Date of Issue
EN 2002/95/EC	Restriction of Hazardous Substances	27 January 2003

Type of Equipment : GSM Gateway
Equipment Name : Simado
Equipment Models : GFX44

Manufacturer's Name : Matrix Telecom Private Limited
Address : 39 – GIDC
Waghodia – 391 760
Dist: Vadodara, India

Additional Information:

The text of EU Directive 2002/95/EC may be found at the following website:
http://europa.eu.int/eur-lex/pri/en/oj/dat/2003/l_037/l_03720030213en00190023.pdf

Date : 15th May 2007
Place : Vadodara, India

Ganesh Jivani
(Director)
Matrix Telecom Private Limited

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