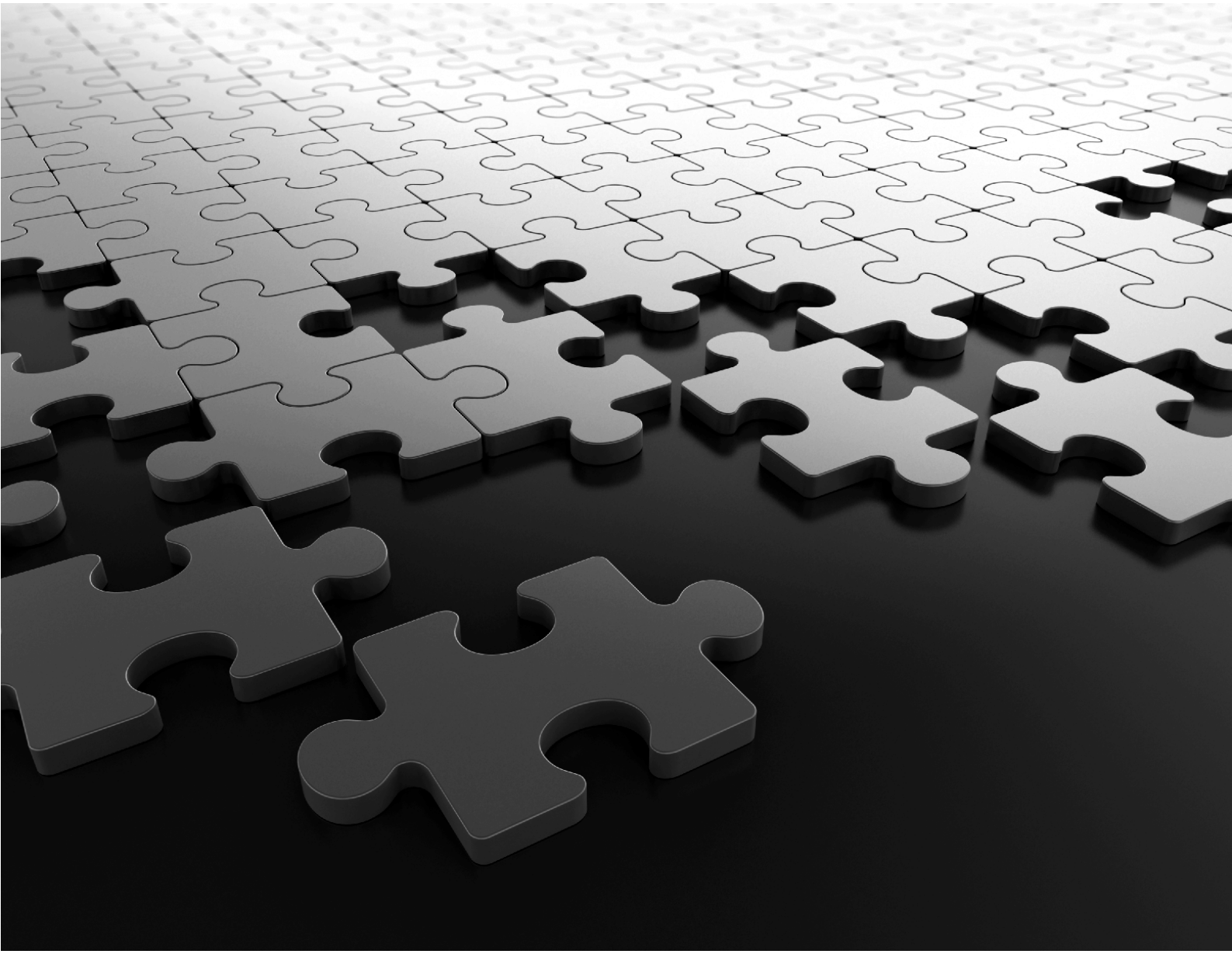
SIMADO GFX11/GFX11E
System Manual



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SIMADO GFX11

GSM/3G/4G Fixed Cellular Terminal for Voice Applications

SIMADO GFX11E

GSM/3G/4G Fixed Cellular Terminal for Emergency Applications

System Manual

Documentation Disclaimer

Matrix Comsec reserves the right to make changes in the design or components of the product as engineering and manufacturing may warrant. Specifications are subject to change without notice.

This is a general documentation for all models of the product. The product may not support all the features and facilities described in the documentation.

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Release date: December 6, 2018

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Contents

CHAPTER 1

Introduction

Welcome

Thank You for choosing SIMADO GFX11/GFX11E.

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 2G/3G/4G Fixed Cellular Terminal. Please read this document carefully before installing your system.

About this System Manual

This System Manual contains detailed information and instructions for installing, configuring and using SIMADO GFX11/GFX11E. It also contains information on protecting and maintaining the system.

This System Manual provides information and instructions for installing, configuring and using the SIMADO GFX11/GFX11E.

You may also refer to the SIMADO GFX11/GFX11E *Quick Start* shipped with the system for quick installation.

For instructions on using the features of the SIMADO GFX11/GFX11E by the clients, refer to the respective *User Guides*. The documentation can be found at https://www.matrixtelesol.com/product-manuals.html

For product registration and warranty related details, please visit https://www.matrixcomsec.com/product-registration-form.html

Intended Audience

This System Manual is aimed at:

Network and System Engineers (SE): Persons who install, configure and maintain SIMADO GFX11/GFX11E. It is assumed that they have some experience in installing and configuring GSM Fixed Cellular Terminals (FCT). System Engineer has full access to the system.

System Administrators (SA): Persons who operate the system and perform administrative functions. System Administrator has limited access to the system.

Users: Persons who actually uses SIMADO GFX11/GFX11E to make and receive calls and use 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.

Know Your SIMADO GFX11/GFX11E: Provides an overview of SIMADO GFX11/GFX11E.

Installing SIMADO GFX11/GFX11E: Contains information on how to install SIMADO GFX11/GFX11E.

Configuring SIMADO GFX11/GFX11E: Provides instructions for configuring the basic parameters of SIMADO GFX11/GFX11E.

Features of SIMADO GFX11/GFX11E: Describes in detail the various features of SIMADO GFX11/GFX11E such as Allowed-Denied Numbers, Automatic Number Translation, Battery Back-up during Power Failure, Call Progress Tones, Location Information Indication, Hotline, and provides instructions for configuring and using them.

How to Read this System Manual

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

You may use the table of contents and the Index in this document to reach the relevant topic or information you want to look up.

Cross-references are provided in blue font with hyperlinks. You can look up the source by clicking the links.

Conventions used in this System Manual

Instructions

Instructions are provided in this document in step-by-step format. Command strings to be dialed for configuring the port parameters and features are presented in the following format:

- To configure Answer Signaling on the FXS Port, dial:
  221-Answer Signal-#*
  Where,
  Answer Signal is
  0 for None
  1 for Polarity Reversal

  Default: **Polarity Reversal**

This is an instruction to configure Answer Signaling on the FXS Port, along with the default value. You must dial the digits and characters in the command string in a continuous sequence.

In the above example, by default, **Polarity Reversal** is set as Answer Signal on the FXS Port. If you do not want Answer Signaling on the FXS Port, you must dial '**0**' (the code for None) in the command string. Thus, to remove Answer Signaling on the FXS Port, you must dial the command string in a continuous sequence as: **2210#***

Notices

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

Note: *It indicates something that requires your special attention or it reminds you of something you need to do when you are using SIMADO GFX11/GFX11E.*

Caution: *It indicates an action or condition that is likely to result in malfunction or damage to SIMADO GFX11/GFX11E or your property.*

Warning: *It indicates a hazard or an action that will cause damage to SIMADO GFX11/GFX11E and/or cause bodily harm to the user.*

Tip: *It indicates a helpful hint giving you an alternative way to operate the system or carry out a procedure, or use a feature more efficiently.*

Terminology

Throughout this System Manual, both the models—**SIMADO GFX11 and SIMADO GFX11E**—have been referred to as SIMADO GFX11, unless otherwise specified. The words **SIMADO GFX11** and **System** are used synonymously.

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

System Engineers (SE): Persons who install, configure and maintain SIMADO GFX11/GFX11E.

System Administrators (SA): Persons who operate the system and perform administrative functions.

Users: Persons who uses SIMADO GFX11/GFX11E.

Caller/ Calling party: The person who make calls.

Called party: The person to whom the call is made.

GSM (Global System for Mobile): This is also referred to as the 2G network. Hence, 2G or GSM is used to denote the 2G network.

UMTS (Universal Mobile Telecommunications System): This is also referred to as the 3G network. Hence, 3G or UMTS is used to denote the 3G network.

LTE (Long Term Evolution): This is also known as the 4G network. Hence, 4G or LTE is used to denote the 4G network.

Using this System Manual, we hope you will be able to install, operate and make optimum use of your SIMADO GFX11/GFX11E. However, if you encounter any technical problems, please contact your dealer/reseller or the Matrix Customer Care.

CHAPTER 2

Know Your SIMADO GFX11/ GFX11E

Overview

SIMADO GFX11/GFX11E finds its application in the corporate offices, factories, call centers, hotels, residences and such other establishments. In an Organization, when SIMADO GFX11 is interfaced with the PBX, all the incoming calls on the Mobile Port of SIMADO GFX11 can be routed to the desired extension of the PBX. Similarly, all the outgoing calls made to the mobile phones can be routed through the Mobile Port of SIMADO GFX11, reducing the telecommunication cost of the organization.

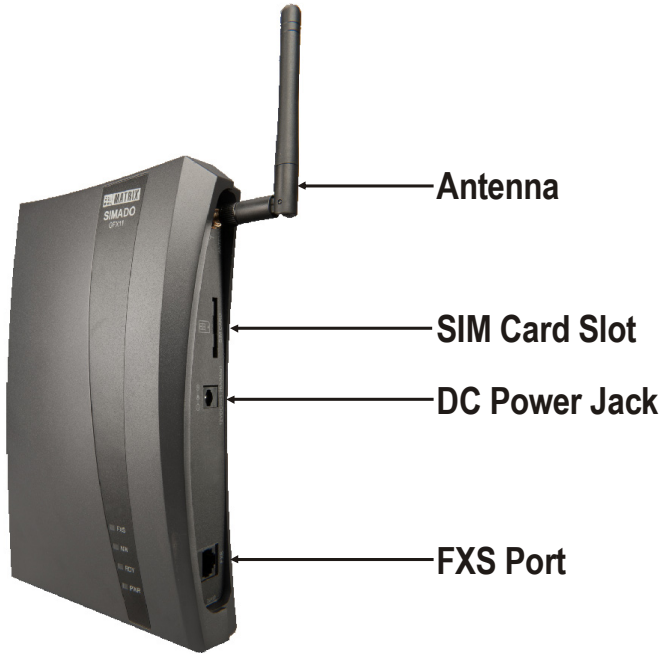
If your SIMADO GFX11/GFX11E has Quectel M95-V2 or Quectel UC20-G or Quectel EC25 engines[1], Matrix will provide future assistance only for the same.

SIMADO GFX11 is available in two configurations:

- **SIMADO GFX11 (2G/3G/4G)**
- **SIMADO GFX11E (2G/3G/4G)**

1. *If your SIMADO GFX11/GFX11E has SIMCOM or WAVECOM or Sierra Wireless SL6087 engines, Matrix will not provide any future assistance for these engines.*

SIMADO GFX11

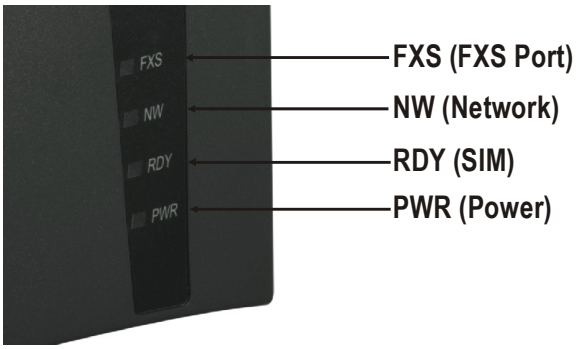


Ports and Connectors

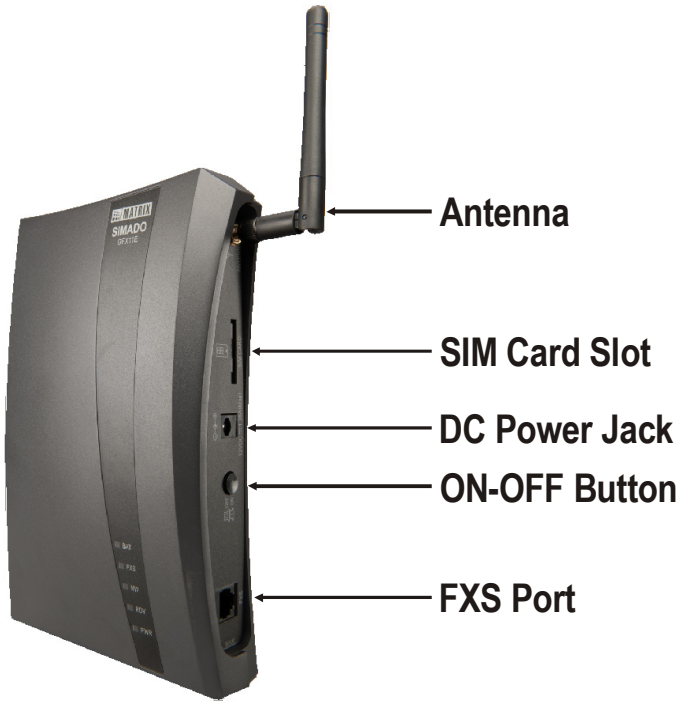
Port Name	Connector	Description
ANTENNA	SMA (Female)	To connect the Antenna for the Mobile Ports.
SIM Card	Slot	To insert a SIM Card for mobile connectivity.
12VDC-1.25A(Max)	DC Jack	To connect a Power Adapter.
FXS	RJ11	To connect a standard telephone instrument or a PBX.

LEDs

SIMADO GFX11 has 4 LEDs, labeled as FXS, NW, RDY and PWR as shown in the figure below. These LEDs indicate the status of the ports and various events occurring on the ports, including errors.



SIMADO GFX11E

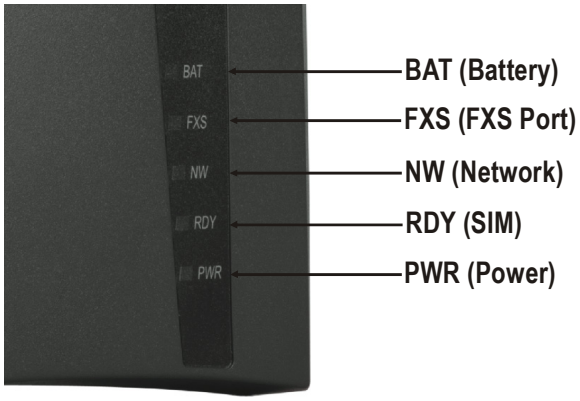


Ports and Connectors

Port Name	Connector	Description
ANTENNA	SMA (Female)	To connect the Antenna for the Mobile Ports.
SIM Card	Slot	To insert a SIM Card for mobile connectivity.
12VDC-1.25A(Max)	DC Jack	To connect a Power Adapter.
ON-OFF Button	---	To switch on or switch off the SIMADO GFX11E.
FXS	RJ11	To connect a standard telephone instrument or a PBX.

LEDs

SIMADO GFX11E has 5 LEDs, labeled as BAT, FXS, NW, RDY and PWR as shown in the figure below. These LEDs indicate the status of the ports and various events occurring on the ports, including errors.

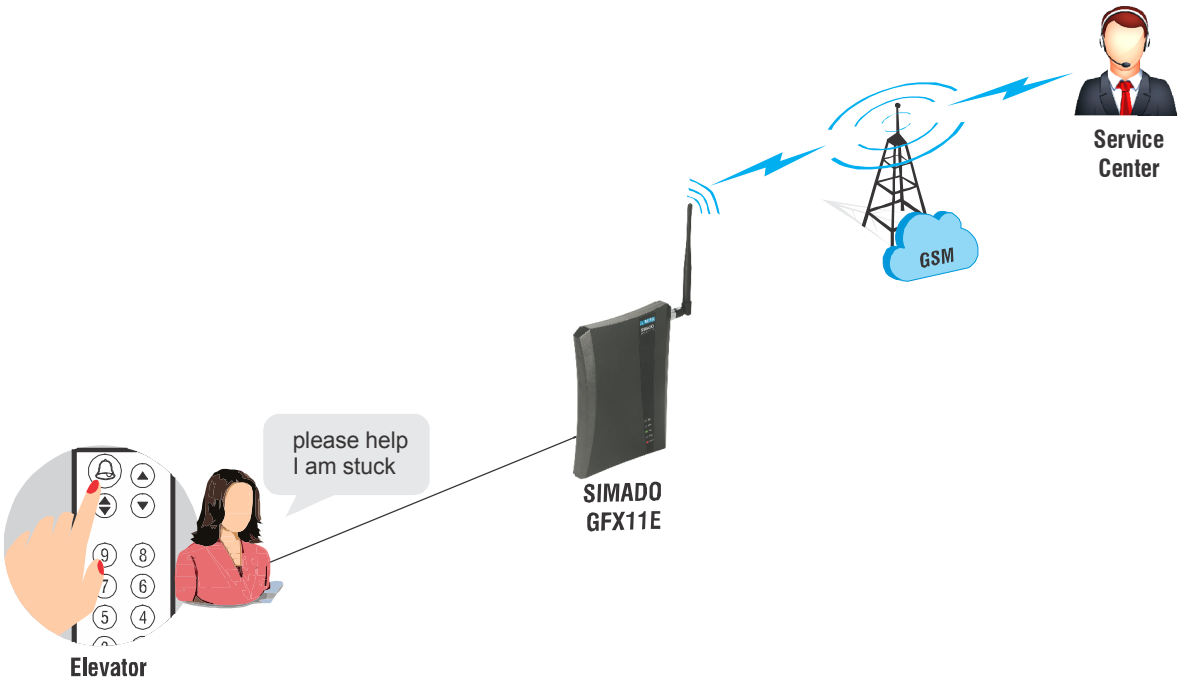


Applications of SIMADO GFX11/GFX11E

Case 1: Standalone

Case 2: SIMADO GFX11 interfaced with a PBX

Case 3: SIMADO GFX11E in Elevator (Emergency Application)



CHAPTER 3

Installing SIMADO GFX11/ GFX11E

Before You Start

Before you begin to install and set up the hardware of SIMADO GFX11/GFX11E, make sure you have the following ready:

- A standard, good quality, twisted pair telephone cable with 0.5 mm conductor diameter and RJ11 plugs for the FXS Port.
- A standard telephone instrument to connect to the FXS Port. You can also connect the FXS Port of SIMADO GFX11/GFX11E to a PBX.
- A SIM Card to test Mobile connectivity.

Protect SIMADO GFX11/GFX11E and Yourself

For safe and efficient operation of this product, read and observe the safety guidelines given in this document. When installing and using this product, take every safety precaution to reduce the risk of fire, electric shock and injury to yourself and others.

- Do not install the system at any of the locations listed below:
  - in any area where it is directly exposed to sunlight, excessive cold, humidity, corrosive fumes.
  - at the place where shocks or vibrations are frequent or strong.
  - at the place where it comes in contact with dust and oil.
  - near any water source or water body like a wash bowl, kitchen sink, bath tub or near a swimming pool, sprinkler.
  - on movable or unstable surfaces, which may cause the product to fall and get damaged.
- Always wear an electrostatic discharge preventive wrist strap or belt and use a grounding mat when handling the system with its cover open.
- Unplug the system from the power outlet before cleaning. Do not use liquid cleaners, use only a dry and soft cloth.
- Do not turn on the power supply until the installation is complete.
- Never open the system in power ON condition.
- Operate the system within the recommended power supply voltage range.

- Do not overload wall outlets and extension cords to prevent electric shock and fire.
- Take the system to a qualified technician for service and repair.
- Unplug the system from the power outlet and contact a qualified technician under the following conditions:
  - If liquid has been spilled on it.
  - If it has been exposed to rain or water.
  - If it was dropped or the cabinet is damaged.
  - If it does not operate normally.

Warning for RF Safety

This product complies with the RF exposure guidelines as per standard FCC 47 CFR part 2. We recommend that you take the following safety measures:

- Keep the RF Antenna at least 20cm away from other electronic and radio transmission devices.
- Keep the RF antenna at a place at least 20cm away from people's vicinity.
- Do not place the magnetic storage media near the system.
- 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.

Battery[2]

SIMADO GFX11E has a NI-MH AAA 7.2V/800mA battery. Do not disassemble, weld, burn or throw the battery into waste. This battery may explode and cause serious injuries.

Dispose-off the used batteries according to the local regulations.

If required, the battery should be replaced only by authorized dealers of Matrix. End Users must not attempt to replace it.

There is risk of explosion, if the Battery is replaced in an incorrect manner.

Getting Started

- Select an appropriate site to install SIMADO GFX11/GFX11E, considering the safety precautions listed earlier in this chapter.
- Unpack SIMADO GFX11/GFX11E and verify the package contents. Make sure the package contains the items listed in the table below. In case any of these is missing or damaged, contact the dealer/distributor from whom you have purchased it.

Sr. No.	Item Name	Quantity
01	SIMADO GFX11/GFX11E unit	1
02	GSM Antenna with SMA Male Connector	1

2. Applicable for SIMADO GFX11E only.

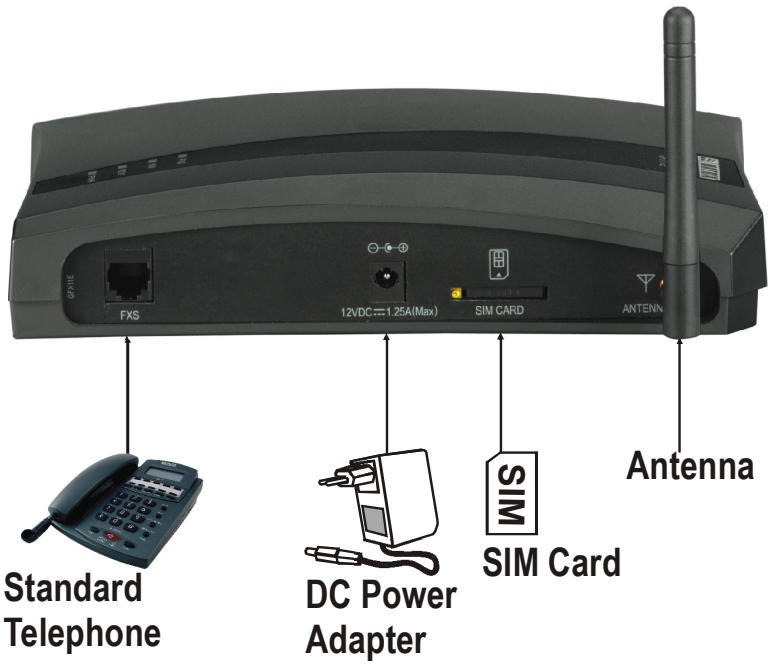
Sr. No.	Item Name	Quantity
03	Power Adapter (12V - 2A)	1
04	Line Cord (RJ11)	1
05	Wall Mounting Template	1
06	M7/30 Screw	2
07	Screw Grip	2
08	SIMADO GFX11/GFX11E Quick Start (printed)	1

- Place the system at the selected location.

  If you want to mount the system on a wall, use the mounting template for drilling the holes on the wall.

Connecting SIMADO GFX11/GFX11E

SIMADO GFX11



Select an appropriate site to install SIMADO GFX11. Make sure that the site you select has proper power supply source and sufficient network signal strength.

- To the **FXS Port**, connect a standard single line telephone using a standard telephone cable with RJ11 plugs.

  You may also connect the FXS Port of SIMADO GFX11 to a PBX.

- Insert SIM Card of the service provider in the SIM Card Slot of SIMADO GFX11.

  To enable SIM PIN protection,

  - Get a mobile handset. Insert the SIM Card into the mobile handset.

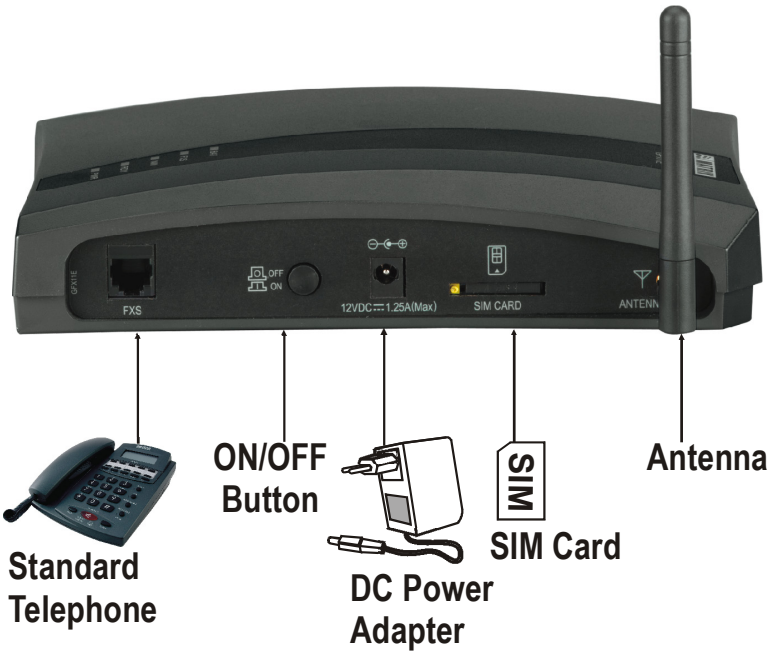
- From the mobile handset, enable PIN Protection on the SIM.
- Change the SIM PIN to **1234**. This is the default SIM PIN of SIMADO GFX11.
- If your SIMADO GFX11 has a module other than M95-V2 (2G) or UC20-G (3G), you must also disable Call Waiting on the SIM Card. This will prevent current calls from being disconnected whenever there is a waiting call on the Mobile Port.

  You can enable Call Waiting Notification in the modules M95-V2 (2G) or UC20 (3G) only. For instructions, refer "Call Waiting Notification".
- Remove the SIM Card from the mobile handset and insert it in the SIM Card Slot of SIMADO GFX11.

- *If you do not want to use PIN Protection, insert the SIM Card in the mobile handset and disable PIN protection. Remove the SIM Card from the mobile handset and insert it in the Mobile Port's SIM holder.*
- *You can change the SIM PIN to the desired value while configuring the system. For instructions on changing the SIM PIN, refer "Mobile Port Parameters".*

- Screw the antenna on to the **Antenna Connector** of SIMADO GFX11.

SIMADO GFX11E



Select an appropriate site to install SIMADO GFX11E. Make sure that the site you select has proper power supply source and sufficient network signal strength.

- To the **FXS Port**, connect a standard single line telephone using a standard telephone cable with RJ11 plugs.

  You may also connect the FXS Port of SIMADO GFX11E to a PBX.
- Insert SIM Card of the service provider in the SIM Card Slot of SIMADO GFX11E.

To enable SIM PIN protection,

- Get a mobile handset. Insert the SIM Card into the mobile handset.
- From the mobile handset, enable PIN Protection on the SIM.
- Change the SIM PIN to **1234**. This is the default SIM PIN of SIMADO GFX11E.
- If your SIMADO GFX11E has a module other than M95-V2 (2G) or UC20-G (3G), you must also disable Call Waiting on the SIM Card. This will prevent current calls from being disconnected whenever there is a waiting call on the Mobile Port.
- You can enable Call Waiting Notification in the modules M95-V2 (2G) or UC20 (3G) only. For instructions, refer "Call Waiting Notification".
- Remove the SIM from the mobile handset and insert it in the SIM Card Slot of SIMADO GFX11E.

- *If you do not want to use PIN Protection, insert the SIM in the mobile handset and disable PIN protection. Remove the SIM Card from the mobile handset and insert it in the Mobile Port's SIM holder.*
- *You can change the SIM PIN to the desired value while configuring the system. For instructions on changing the SIM PIN, refer "Mobile Port Parameters".*

- Screw the antenna on to the **Antenna Connector** of SIMADO GFX11E.

Powering ON SIMADO GFX11/GFX11E

- Connect the Power Adapter into the **Power Jack**, and plug it into a power outlet.
- Switch ON the power supply. Also, press the **ON-OFF button**[3] to switch on your SIMADO GFX11E.

  As soon as SIMADO GFX11E is powered on, the battery will also start charging. See "Battery Back-up during Power Failure" for more details.

At first power on, keep SIMADO GFX11E connected to the power supply for atleast 24 hours to ensure the battery is completely charged.

- Observe the reset cycle.

LED Indication at Power ON

- LED labeled as **BAT**[4] will start blinking (RED) after few seconds of Power On. It indicates the charging of the battery.
- LED labeled as **PWR** will glow green continuously.
- LED labeled as **FXS** and **RDY** will blink (RED) four times (500ms On, 500ms Off) and then turns Off.

3. *ON-OFF button is available only in SIMADO GFX11E.*
4. *Battery (BAT) LED is available only in SIMADO GFX11E.*

- LED labeled as **NW** will start blinking (RED) after few seconds of Power On. It indicates the network availability.

- LED labeled as **RDY** will start blinking (RED) slowly (1 sec On- 1 sec Off) till successful network registration. After that, it will glow RED continuously.

- LED labeled as **RDY** will blink (RED) fast (100 ms On- 100 ms Off) when SIM Card is absent or deactivated or SIM PIN is faulty or SIM PUK is required.

LED Indication during Normal Functioning

LED	Activity		Indication
PWR	ON		SIMADO GFX11 is power On.
	Off		SIMADO GFX11 is power Off.
RDY	ON		SIM Card is present and active.
	Off		SIMADO GFX11 is powered On but SIM Card is not detected.
	Blinking	Fast	SIM Card is absent or de-activated or SIM PIN is faulty or SIM PUK is required.
		Slow	SIM Card is detected but is not registered with the network.
NW (controlled by Module)	Off		GSM module is Off.
	Blinking	Fast	GSM module is On but is not registered with the network. (Network not available)
		Slow	GSM module is On and is registered with the network. (Network is available)
FXS	ON		FXS Port is Off-Hook.
	Off		FXS Port is On-Hook.
	Blinking		FXS Port is ringing.
BAT[a]	ON		Battery is fully charged.
	Off		Battery is absent.
	Blinking	Fast	Battery is low.
		Slow	Battery is charging.

a. Battery (BAT) LED indication is applicable only for SIMADO GFX11E.

Test Calls

Making a Call

- Lift the receiver of the telephone connected to the FXS Port of SIMADO GFX11/GFX11E. You will get the dial tone.
- Dial the desired number. You will hear the Ring Back Tone.
- Talk when the called party answers the call.
- Replace the receiver to disconnect the call.

Receiving a Call

- Ask someone to dial the number of the SIM Card inserted in the Mobile Port of SIMADO GFX11/GFX11E.
- When the telephone connected to the FXS Port of SIMADO GFX11/GFX11E rings, lift the receiver to talk.
- You will be in speech with the caller.
- Replace the receiver to disconnect the call.

SIMADO GFX11/GFX11E is supplied with factory default settings. You can use the system with these settings or configure it according to your requirement. See “Configuring SIMADO GFX11/GFX11E” for instructions.

CHAPTER 4

Configuring SIMADO GFX11/GFX11E

You can configure SIMADO GFX11/GFX11E by dialing command strings from the telephone connected to the FXS Port of SIMADO GFX11/GFX11E. You can configure the system from two modes namely: System Engineer Mode and System Administrator Mode.

*Throughout this System Manual, both the models—**SIMADO GFX11 and SIMADO GFX11E**—have been referred to as SIMADO GFX11, unless otherwise specified. The words **SIMADO GFX11** and **System** are used synonymously.*

System Engineer (SE) Mode

In System Engineer (SE) mode, you have full access to the system and you can configure and use all the features of the system.

The System Engineer mode is protected by a password referred to as **SE password**.

To configure SIMADO GFX11 from SE mode:

- Lift the receiver of the telephone connected to SIMADO GFX11.
- To enter SE mode, dial ***#*-19-SE Password***. The default SE Password is ***1234***.
- Dial the command string.
- To exit SE mode, dial ***00-#****
- Replace the receiver of the telephone.

*While dialing command strings, you must dial the digits and characters in a continuous sequence. For example, to enter SE Mode you must dial the command string as **#*191234***

System Administrator (SA) Mode

In System Administrator (SA) mode, you have limited access to the system.

You can configure and access only following features:

- SA Password Change
- Software Version-Revision Display
- Call Duration Display

- Call Divert

The System Administrator mode is also protected by a password referred to as **SA password**.

To configure SIMADO GFX11 from SA mode:

- Lift the receiver of the telephone connected to SIMADO GFX11.
- To enter SA mode, dial ***#*-18-SA Password.*** The default SA Password is ***1111***.
- Dial the command string.
- To exit SA mode, dial ***00-#****
- Replace the receiver of the telephone.

*While dialing command strings, you must dial the digits and characters in a continuous sequence. For example, to enter SA Mode you must dial the command string as **#*181111***

While configuring the system, if there is an incoming call on the FXS Port, you will get an error tone.

FXS Port Parameters

To configure the FXS Port Parameters, **enter the SE Mode**.

CLI Type

Configure the appropriate CLI Type, according to the CLI Type supported by the telephone instrument/PBX connected to the FXS Port.

- To configure the CLI Type, dial:
  222-CLI Type-#*
  Where,
  CLI Type is
  1 for None
  2 for DTMF (Number, Ring)
  3 for FSK V.23
  4 for FSK BellCore
  5 for DTMF ('D', Number, 'C', Ring)

  Default: **FSK V.23**

*You may select 'None' as CLI Type, if the telephone instrument connected to the FXS Port does not have a displa*y.

Gain for CLI Generation

You may configure the gain for CLI generation, if you have configured the CLI Type as FSK and need to adjust the gain for generating CLI.

- To configure the gain for CLI generation, dial:
  223-Gain-#*
  Where,
  Gain is
  1 for 0dB
  2 for -1.5dB
  3 for -3.0dB
  4 for -4.5dB
  5 for -6.0dB
  6 for -7.5dB
  7 for -9.0dB
  8 for -10.5dB

  Default: **-10.5dB**

First Digit Wait Timer

The First Digit Wait Timer is the time for which the system will wait for the user to dial the destination number.

- To configure the First Digit Wait Timer, dial:
  225-First Digit Wait Timer-#*
  Where,

First Digit Wait Timer is from 01 to 99 seconds.

Default: **15 seconds**

Inter Digit Wait Timer

The Inter Digit Wait Timer is the time for which the system will wait while receiving the digits dialed by the user, to consider it as end of dialing.

- To configure the Inter Digit Wait Timer, dial:
  226-Inter Digit Wait Timer-#*
  Where,
  Inter Digit Wait Timer is from 01 to 99 seconds.

  Default: **05 seconds**

End of Dialing

End of Dialing is a single digit on receipt of which, the system interprets end of the dialed string and the received digits are further processed to reach the dialed destination number. SIMADO GFX11 supports only # as end of dialing digit.

- To configure # as End of Dialing digit, dial:
  110-1-#*

- To remove # as End of Dialing digit, dial:
  110-0-#*

  Default: **# is used as end of dialing digit**

Replacing + by DTMF digits in CLI

The GSM network presents the calling party number with the prefix '+' to the called party. However, not all equipments can present the calling party number containing '+'. SIMADO GFX11 enables you to remove the prefix '+' and replace it with an appropriate number string, if required.

- To configure the replacement digit for the ‘+’ sign in the CLI, dial:
  301-Number String-#*
  Where,
  Number string can be of maximum four digits.

  Default: **00**

- To clear the replacement digit configured for the ‘+’ sign in the CLI, dial:
  301-#*

Remove Country Code from CLIP

You may remove Country Code from the CLI received on the Mobile Port before presenting it on the FXS Port, if required.

- To enable or disable the flag to remove the Country Code from the CLI received on the Mobile Port, dial:
  102-Flag-#*

Where,
Flag is
0 for Disable
1 for Enable

Default: **Disabled**

*SIMADO GFX11 will **Remove Country Code from CLIP** only after **Replacing + by DTMF digits in CLI**, if configured.*

Country Code

If you enable the flag to remove the Country Code from the CLI received on the Mobile Port, you must configure the Country Code you want to remove from the CLI.

- To configure the Country Code, dial:
  101-Country Code-#*
  Where,
  Country Code can be of maximum four digits. Allowed digits are from 0 to 9.

  Default: **Blank**

- To clear the Country Code, dial:
  101-#*

Answer Signaling on FXS Port

Answer Signaling is a signal generated on the FXS Port to indicate that the called party has answered the call (call maturity). You can configure either None or Polarity Reversal as Answer Signal on the FXS Port. 'None' is configured when no answer signaling is to be generated and 'Polarity Reversal' is configured when it is to be generated in the form of Polarity Reversal.

- To configure answer signaling on FXS Port, dial:
  221-Answer Signal-#*
  Where,
  Answer Signal is
  0 for None
  1 for Polarity Reversal

  Default: **Polarity Reversal**

Disconnect Signaling on FXS Port

Disconnect Signaling is a signal generated on the FXS Port to indicate that the other party has disconnected the call. When the called party disconnects the call, SIMADO GFX11 will play error tone to the user. You can configure one of the following options as Disconnect Signal on the FXS Port:

- **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.

- **Open Loop Disconnect:** This option is used when call disconnection is to be generated in the form of Open Loop Disconnect pulse. In Open Loop Disconnect, the battery voltage on the FXS Port is removed for the duration of the *Open Loop Disconnect Timer* and then it is restored after the FXS Port goes On-Hook.

- To configure disconnect signaling on the FXS Port, dial:
  248-Disconnect Signal-#*
  Where,
  Disconnect Signal is
  0 for None
  1 for Polarity Reversal
  2 for Open Loop Disconnect

  Default: **Polarity Reversal**

- To configure Open Loop Disconnect Timer on FXS Port, dial:
  249-Open Loop Disconnect Timer-#*
  Where,
  Open Loop Disconnect Timer is from 001 to 999 ms.

  Default: **500 ms**

No Dial Tone on FXS Port

You may enable or disable the dial tone on the FXS Port, when SIMADO GFX11 is not registered with the network.

- To enable or disable the dial tone on the FXS Port, dial:
  103-No Tone when system not registered-#*
  Where,
  No Tone when system not registered is
  0 for Disable (Tone to be played)
  1 for Enable (No Tone to be played)

  Default: **Disable**

Even when SIMADO GFX11 is not registered with the network,
- *you will be able to make Emergency calls.*
- *you will be able to configure the system by entering the programming mode.*

You may **exit the SE Mode** or continue with the system configuration.

Mobile Port Parameters

To configure the Mobile Port Parameters, enter the **SE Mode**.

Enable/Disable Mobile Port

You may disable the Mobile Port, if you want to block making of outgoing calls using SIMADO GFX11. You will receive incoming calls even when the Mobile Port is disabled.

- To enable or disable the Mobile Port, dial:
  201-Code-#*
  Where,
  Code is
  0 for Disable
  1 for Enable

  Default: **Enable**

SIM PIN

SIM PIN is a security feature used by the GSM network to prevent unauthorized use of the SIM Card. If you have enabled SIM protection on the SIM Card, you must change the SIM PIN to the desired value. To know more about enabling PIN protection on the SIM Card, see “Connecting SIMADO GFX11/GFX11E”.

- To change the current SIM PIN, dial:
  113-New SIM PIN-#*
  Where,
  New SIM PIN can be of minimum 4 and maximum 6 digits. Accepted digits are 0 to 9.

  Default: **1234**

Your SIM Card is Locked?

If you have enabled PIN protection on your SIM Card, your SIM Card may get blocked, if you enter the wrong SIM PIN thrice. To unblock your SIM Card, you will need the Personal Unlock Key (PUK). This is the unique number assigned to the SIM Card by your service provider to unlock your SIM Card. If your SIM Card gets blocked, you must get the PUK number from your service provider, register this PUK number with the network, and then assign new SIM PIN.To the register PUK, follow these steps:

- Enter SE Mode.
- Dial **114-PUK Number-New SIM PIN-#***
  Where,
  PUK number is unique 8-digit number assigned to the SIM Card.
  New SIM PIN can be of minimum 4 and maximum 6 digits. Accepted digits are 0 to 9.
- Exit SE Mode.

The SIM PIN is not set to default or changed, when you “Reinstate the Default Settings”.

Call Waiting Notification

Call Waiting Notification is supported only in the Quectel M95-V2 (2G) or UC20 (3G) modules. When Call Waiting Notification is enabled a beep will be played as a notification to the parties in-speech. When the handset is placed on-hook, the waiting call will land on the destination port as a new call.

Call Waiting features like answering the waiting call, putting the current call on hold, call toggle, conference etc will not be supported.

- To enable/disable Call Waiting Notification, dial:
  204-Flag-#*
  Where,
  Flag is
  0 for Disable
  1 for Enable

  Default: Disable

Receive Gain

You can adjust receive gain of the Mobile Port to increase/decrease the audibility of incoming speech.

- To configure the receive gain, dial:
  271-Receive Gain-#*
  Where,
  Receive Gain is
  1 for Very Low
  2 for Low
  3 for Normal
  4 for High
  5 for Very High

  Default: **Normal**

- To set the receive gain of the Mobile Port to the default value, dial:
  271-0-#*

Transmit Gain

You can adjust the transmit gain of the Mobile Port to increase/decrease the audibility of the outgoing speech.

- To configure the transmit gain, dial:
  272-Transmit Gain-#*
  Where,
  Transmit Gain is
  1 for Very low
  2 for Low
  3 for Normal
  4 for High
  5 for Very High

  Default: **Normal**

- To set the transmit gain of the Mobile Port to the default value, dial:

272-0-#*

Pause Timer

Pause timer is the time for which SIMADO GFX11 will wait while dialing out DTMF digits on the Mobile Port when the character P is detected in the DTMF number string. The Pause Timer is used for "Multi-Stage Dialing" feature.

- To configure Pause Timer for the Mobile Port, dial:
  275-Pause Timer-#*
  Where,
  Pause Timer is from 1 to 9 seconds.

  Default: **2 seconds**

Example: If the number string to be dialed out on the Mobile Port is PPP234 and the pause timer is set to 3 seconds, SIMADO GFX11 will dial out the digit 2 after P+P+P seconds, that is, 3+3+3=9 seconds.

DTMF Outdial Option

SIMADO GFX11 supports dialing of DTMF digits from the Mobile Port **Using AT Command** or **In-band**.You must select the appropriate option for DTMF Outdial.

- To configure DTMF Outdial Option on the Mobile Port, dial:
  240-DTMF Outdial Option-#*
  Where,
  DTMF Outdial Option is
  1 for In-band
  2 for Using AT Command

  Default: **In-band**

DTMF Out Dial ON Time

DTMF Out Dial ON Time signifies the time for which the DTMF digit will remain ON, while being outdialed by the system. This parameter finds its application in "Multi-Stage Dialing".

- To configure DTMF Out Dial ON Time for dialing out the DTMF digits on the Mobile Port, dial:
  241-DTMF Out Dial ON Time-#*
  Where,
  DTMF Out Dial ON Time is from 01 to 50.
  00 means default ON time of the module (70 ms) and 01 to 50 means <DTMF Out Dial ON Time>*100 ms i.e. from 100 ms to 5 secs.

  Default: **100 milliseconds**

You may **exit the SE Mode** or continue with the system configuration.

Registered Network Display

You can view the network with which the GSM module is currently registered with, on the display of the telephone connected to the FXS Port. Make sure that the telephone has a display and the CLI Type, DTMF or FSK is configured on the FXS Port. For instructions on configuring CLI Type, see "FXS Port Parameters".

- To know the network with which the mobile module is currently registered, follow the steps given below:
  Go Off-Hook.
  Dial **#*-14**
  During the confirmation tone, go On-Hook.

  The telephone connected to the FXS Port will ring and the Registration Status would be displayed on your telephone as under:

  When CLI Type is set to DTMF, it will display:

  0001 **for GSM**

  0002 **for GSM Compact**

  0003 **for UMTS**

  0004 **for Not Registered**

  For **System Firmware Version V7R1** and later, when CLI Type is set to DTMF, it will display:

  0001 **for GSM**

  0002 **for GSM Compact**

  0003 **for UMTS**

  0004 **for LTE**

  0005 **for Not Registered**

  When CLI Type is set as FSK, the Registration Status display format would be as follows:

  0001
  GSM

Mobile Network Selection

At each power ON, the Mobile Port will automatically locate and register with the network that supports the SIM Card installed in it.

However, if the Mobile Port fails to register, it will restart the process of network selection on the expiry of the *Network Registration Retry Timer*[5].

If SIMADO GFX11 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 configure Manual Network Selection.

When you enable manual network selection, you must configure the *Network Operator Priority Table*. This table requires you to configure the Network Operator Codes (MCC-MNC)[6] in order of priority for a Mobile Port. So, whenever the SIM Card tries to register with the network manually, the Mobile Port will send a query to the available GSM Network Operators. The network operators will respond to the query with their Network Operator Codes. The Mobile Port will then match the Network Operator Codes it receives with those configured in the Network Operator Priority Table and select the Network Operator that matches in order of priority. If the Mobile Port 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.

- Enter SE Mode.

- To configure network selection mode for the Mobile Port, dial:
  331-Network Selection Mode-#*
  Where,
  Network Selection Mode is
  1 for Automatic
  2 for Manual

  Default: **Automatic**

- To configure network operator's code in the priority table, dial:
  332-Priority-Code-#*
  Where,
  Priority is from 1 to 3.
  Code is MCC-MNC of the Network Operator. The MCC-MNC code must not exceed 6 digits.

  Default: **00000**

5. *The Network Registration Retry Timer defines the time for which the Mobile Port, which has failed to register with the network, should wait before attempting to re-register with the network. Network registration retry timer is 2 minutes and is non-programmable.*

6. *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.

The default priority table configured in the system is as shown below:

Priority	Network Operator Code
1	00000
2	00000
3	00000

- To clear network operator code in the priority table, dial:
  332-Priority-#*

The Frequency Band supported by GSM Network varies from country to country. Configure the Frequency Band supported by your GSM service provider(s) for the Mobile Port.

- To select Mobile Frequency Band, dial:
  333-Mobile Frequency Band-#*
  Where,
  Mobile Frequency Band is
  1 for 900 MHz
  2 for 1800 MHz
  3 for 1900 MHz
  4 for 850+1900 MHz
  5 for 900+1800 MHz
  6 for All Bands

  Default: **All Bands**

- *Frequency Band selection is not required if 3G or 4G module is installed in SIMADO GFX11.*
- *If SIMCOM300/340 or WAVECOM engine is installed and you select the Frequency Bands as All Bands, the system will automatically set the frequency to 900+1800MHz.*

- Exit SE Mode or continue with the system configuration.

Preferred Network Mode

When the Mobile Port is used in the SIMADO GFX11/GFX11E, the SIM gets registered with either GSM (2G) or UMTS (3G) or LTE (4G) network, whichever is available. You 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 Mobile Port supports GSM, UMTS and LTE 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 the following options:

ANY (GSM/UMTS/LTE): The SIM gets registered with the LTE (4G) network. When the LTE (4G) network is unreachable, the SIM gets registered with the UMTS (3G) or GSM (2G) network automatically.

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

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

LTE Only: The SIM gets registered with LTE (4G) network only.

This parameter is applicable only for SIMADO GFX11/GFX11E having 3G or 4G GSM engine.

- Enter SE Mode.

- To configure Preferred Network Mode for the Mobile Port, dial:
  334-Preferred Network Mode-#*
  Where,
  Preferred Network Mode is
  1 for Any (GSM/UMTS/LTE)
  2 for GSM only
  3 for UMTS only
  4 for LTE only

  Default: **Any (GSM/UMTS/LTE)**

- Exit SE Mode or continue with the system configuration.

MBN File Selection

SIMADO GFX11 provides you the facility to access 4G LTE network depending upon the GSM module mounted on the PCB. This is made possible through an MBN file which is required for voice calling over LTE. Every mobile service provider has unique MBN file that is already preloaded in the 4G module. The system offers two modes for selecting MBN file — Automatic and Manual.

When you enable Automatic mode for selecting the MBN file, the system automatically selects the MBN file of the mobile service provider depending upon the SIM card inserted into the slot. When you enable Manual mode for selecting the MBN file, then you can manually select the MBN file from the list of available MBN files in the GSM module.

The 4G module of SIMADO GFX11 offers backward compatibility, thereby enabling the devices to automatically get registered with 3G/2G network when not within the coverage area of 4G LTE network.

- Enter SE Mode.

- To view the MBN File Selection Mode, follow the steps given below:
  Go Off-Hook.
  Dial **335-#***
  During the confirmation tone, go On-Hook.

  The telephone connected to the FXS Port will ring and the MBN File Selection Mode would be displayed on your telephone as under:

  When CLI Type is set to DTMF, it will display:

  0000 **for Automatic**

  0001 **for Manual**

  Default:

  0000 **for Automatic**

  When CLI Type is set as FSK, it will display:

  0000
  Automatic

  0001
  Manual

- To view currently selected MBN File, follow the steps given below:
  Go Off-Hook.
  Dial **336-#***
  During the confirmation tone, go On-Hook.

  The telephone connected to the FXS Port will ring and the currently selected MBN File would be displayed on your telephone as under:

  When CLI Type is set to DTMF, it will display:

  00XX

Where XX= Index number of currently selected MBN file.

When CLI Type is set as FSK, it will display:

00XX

- To view the list of available MBN Files, follow the steps given below:
  Go Off-Hook.
  Dial **337-#***
  During the confirmation tone, go On-Hook.

  The telephone connected to the FXS Port will ring and the list of available MBN Files would be displayed one after another on your telephone as under:

  When CLI Type is set to DTMF, it will display:

  00XX

  Where XX= Index number of the MBN file

  When CLI Type is set as FSK, it will display:

  00XX
  File_Name

  Where XX= Index number of the MBN file along with its respective File Name.

You are recommended to first view the list of available MBN files in the module and then configure it manually.

- To set the Mode for MBN file selection, dial:
  338-MBN File Selection Mode-XX-#*
  Where,
  MBN File Selection Mode is
  0 for Automatic
  1 for Manual
  XX is the Index number of the MBN file to be used.

  For Example:
  To set Automatic mode for MBN File Selection, dial:
  338-0-00-#*

  To set Manual mode for MBN File Selection, dial:
  338-1-05-#*

- Exit SE Mode or continue with the system configuration.

Signal Strength

SIMADO GFX11 enables you to check the signal strength of the network with which the Mobile Port is registered. To be able to check the Signal Strength, make sure that the telephone connected to the FXS Port has a display and the CLI Type, DTMF or FSK, is configured on the FXS Port. For instructions on configuring CLI Type, see “FXS Port Parameters”.

SIMADO GFX11 will route outgoing calls through Mobile Port only when the available network strength is high or maximum.

How to check Signal Strength

To check the Signal Strength, follow the steps given below:

- Go Off-Hook.
- Dial **#*-11**
- You will get confirmation tone.
- Go On-Hook.
- Signal strength will be displayed on the LCD of your telephone.
- Go Off-Hook again, you will get dial tone.

When **FSK CLI** is set on the FXS Port of SIMADO GFX11, the signal strength will be displayed as under:

```
111111111111
Strength: -xxxdBm
```

The numbers indicate the strength of the network.

When network signal strength is high, the display would be as under:

```
111111111111
Strength: -063dBm
```

When network signal strength is low, the display would be as under:

```
11111
Strength: -101dBm
```

When network signal strength is absent, the display would be as under:

```
11111
```

When **DTMF CLI** is set on the FXS Port of SIMADO GFX11, only the numbers will be displayed as follow:

```
111111111111
```

Passwords

It is possible to configure SIMADO GFX11 and access the system in two modes: System Engineer (SE) Mode and System Administrator (SA) Mode. Both these modes are protected by Passwords. To know more about the SE Mode and the SA Mode, see “Configuring SIMADO GFX11/GFX11E”.

System Engineer (SE) Password

System Engineer mode is protected by the password referred to as SE password. SE password prevents unauthorized alterations in SIMADO GFX11 and misuse of its features and facilities. The default SE password is **1234**. You can change the default SE password to the desired value.

- Enter SE Mode.
- To change SE password, dial:
  107-New SE Password-#*
  Where,
  The New SE Password can be of maximum four digits. Allowed digits are from 0 to 9.

  Default: **1234**

Forgot SE Password?

If you forget the SE password, you can reset it to its default value by changing the position of jumper **J2.**

To set the SE password to its default value (**1234**), follow the steps given below:

- Switch Off SIMADO GFX11.
- Open the cover and locate jumper J2. The jumper is in BC position.
- Change the jumper position to AB.
- Switch On the system.
- Switch Off the system after 5 minutes.
- Restore jumper to its original BC position
- Replace the cover and switch On the system again.
- SE password is set to its default value.

*Password Reset Jumper for both SIMADO GFX11 and GFX11E is same (**J2**).*

- Exit SE Mode or continue with the system configuration.

System Administrator (SA) Password

The System Administrator level is protected by the password called SA password. The default SA password is **1111**. You can change the default SA password to the desired value.

- Enter SE/SA Mode.
- To change SA Password, dial:
  108-New SA Password-#*
  Where,
  New SA Password can be of maximum four digits. Accepted digits are from 0 to 9.

  Default: **1111**

- Exit SE/SA Mode or continue with the system configuration.

If you forget the SA password, you can change it to the desired value by entering SE Mode and dialing the same command string: ***108-New SA Password-#****. Exit SE Mode after changing the SA password.*

Reinstate the Default Settings

All the configurable parameters of SIMADO GFX11 are assigned preset values, referred to as factory defaults or default settings. Default settings can be altered and customized to match the user's requirement and preferences.

You may also reinstate the default settings in the system, if needed. When you reinstate the default settings, all parameters, except the following will be set to factory defaults.

- Call Divert
- Call Progress Tones
- Ring Type
- SIM PIN value

Restoring Default Settings

- Enter SE Mode.
- To default SIMADO GFX11, dial:
  106-Reverse SE Password-#*
  Reverse SE password is a number string of maximum 4 digits.

  For example, if your SE Password is 1234, you need to dial 4321as Reverse of SE Password.
- Exit SE Mode.

SIMADO GFX11 will restart as soon you dial the command to load default settings.

Restart the System

You can restart SIMADO GFX11 by dialing a command from the phone connected to its FXS Port, instead of switching off and switching on the system.

- Enter SE Mode.
- To restart SIMADO GFX11,dial:
  105-SE Password-#*
  Where,
  SE Password is a number string of four digits and acceptable digits are 0 to 9.
- Exit SE Mode.

Software Version and Revision Display

You can view the version-revision of the software, currently installed in SIMADO GFX11, on the LCD display of the telephone connected to the FXS Port. To be able to view the current firmware version-revision, the telephone connected to the FXS Port must have a display. The CLI Type configured on the FXS Port should be either DTMF or FSK. For instructions on configuring the CLI Type, see “FXS Port Parameters”.

How to view Software Version-Revision

- Enter SE Mode.
- To view current software version/revision of SIMADO GFX11, dial:
  109-#*
  You will get confirmation tone.
  Go On-Hook.
  Version-Revision of the software will be displayed on the LCD of your telephone.

  When the CLI type set on the FXS Port is **FSK**, the format of display would be as under:

  VVRR.SS
  VXXRYY

  Where,
  VV/XX= Software Version, RR/YY= Software Revision and SS = Sub-version

  Example:
  If software version is 07, software revision is 01 and sub-version is 01, the display would be as under:

  0701.01
  V07R01

  When CLI type set on the FXS Port is **DTMF**, the format of display would be as under:

  0701.01

- Exit SE Mode.

CHAPTER 5

Features of SIMADO GFX11/ GFX11E

*Throughout this System Manual, both the models—**SIMADO GFX11 and SIMADO GFX11E**—have been referred to as SIMADO GFX11, unless otherwise specified. The words **SIMADO GFX11** and **System** are used synonymously.*

Allowed-Denied Numbers

With the Allowed-Denied Numbers feature, you can permit and restrict the dialing of particular numbers from the FXS Port.

Allowed-Denied Numbers feature makes use of two number lists:

- **Allowed Number List:** This is the list of numbers that can be dialed out from the FXS Port.
- **Denied Number List:** This list contains the numbers that are to be restricted from being dialed out from the FXS Port.

You can configure up to five numbers in each list.

When you configure the Allowed and Denied Number Lists, for each number dialed from the FXS Port, SIMADO GFX11 will use the best-match-found logic to compare the dialed number string with the numbers configured in the Allowed Number List and the Denied Number List. The system will allow the number to be dialed, if the dialed number:

- matches with both lists.
- matches with Allowed Number list.
- matches with neither the Allowed List nor the Denied List.

The dialed number will be denied, if it matches with the Denied Number list.

- *If the number dialed from the FXS port matches with an Emergency number, SIMADO GFX11 will not compare the dialed number string with Allowed - Denied Number lists.*
- *If you have configured Security Code in SIMADO GFX11, and the user does not dial the Security Code before dialing a number, the system will play error tone to the user. For more information, see "Security Code".*

How to configure

- Enter SE Mode.

- To configure numbers in the allowed number list, dial:
  261-Location Index-Number-#*
  Where,
  Location index is from 1 to 5.
  Number can be of maximum 16 digits. Only digits 0 to 9 are allowed.

  Default: **Blank**

- To clear an entry from allowed number list, dial:
  261-Location Index-#*
  Where,
  Location Index is from 1 to 5.

- To clear all the entries from allowed number list, dial:
  261-0-#*

- To configure numbers in the denied number list, dial:
  262-Location Index-Number-#*
  Where,
  Location index is from 1 to 5.
  Number can be of maximum 16 digits and only digits 0 to 9 are allowed.

  Default: **Blank**

- To clear an entry from denied number list, dial:
  262-Location Index-#*
  Where,
  Location Index is from 1 to 5.

- To clear all the entries from denied number list, dial:
  262-0-#*

- Exit SE Mode.

Automatic Number Translation

Automatic Number Translation (ANT) can be used to modify the numbers dialed by users into a different number string before dialing out the number.

ANT can be used to modify the dialed destination numbers to match the specific route number plan of the destination networks or when the network requires adding or stripping off of the prefix of the destination number strings.

ANT can be used for Speed Dialing. It is also the basis of the feature “Multi-Stage Dialing”, used from the Mobile Port of SIMADO GFX11.

Automatic Number Translation makes use of a table in which two types of number strings are configured:

- **Dialed Number Strings:** These are numbers that need to be modified when dialed out from the system.
- **Substitute Number Strings:** These are numbers which the system should dial out in place of the dialed number strings.

You can configure up to 6 Dialed number strings and their corresponding Substitute number strings in the ANT table. The Dialed numbers and their corresponding Substitute numbers are stored in the ANT table at an Index, from 1 to 6.

Whenever an outgoing call is made from the FXS Port, SIMADO GFX11 matches the dialed number with the entries of this table using the best-match-found logic. If a match is found, SIMADO GFX11 will dial out the Substitute number string configured for the dialed number string in the ANT table.

Let us understand this feature with the help of an example.

A user dials 952652631721 from the telephone connected to the FXS Port, out of habit. SIMADO GFX11 routes this call through the Mobile Port to the desired destination. However, the GSM network does not understand the dialed number string, because it expects the user to dial +912652631721. The call is rejected.

You can avoid this by configuring the Automatic Number Translation table with the prefix of the numbers that you expect users to dial as Dialed number strings and the prefix expected by the GSM network in the Substitute Number list. In this case,

- **95**, which is the prefix of the number 952652631721 is configured as the Dialed Number String.
- **+91** which is the prefix understood by the GSM Network is configured as the Substitute Number String.

With the ANT Table configured thus, whenever a number is dialed from the FXS Port, the system matches the number string with the ANT Table. If a match is found, the system dials the Substitute Number string configured for that number in the table.

The ANT Table you must configure for the above example, is as under:

Index	Dialed Number String	Substitute Number String	Calling Card Service Number Index (A)	Calling Card Password Index (B)
1	95	+91	0	0
2	Blank	Blank	0	0
3	Blank	Blank	0	0

Index	Dialed Number String	Substitute Number String	Calling Card Service Number Index (A)	Calling Card Password Index (B)
4	Blank	Blank	0	0
5	Blank	Blank	0	0
6	Blank	Blank	0	0

Instead of configuring a specific prefix **(95)**, you can configure **Any Digit code #8** as the Dialed Number String. As the Substitute Number String, you must configure **+91#8**. Now, when the user will dial any number, the system will add +91 as prefix and then dial out the number.

In addition to the Dialed and Substitute Number strings, the ANT table also includes the following entries:

- Calling Card Service Index Number
- Calling Card Password Index

These entries are used specifically for applications that require Multi-stage Dialing, such as use of virtual Calling Cards, interfacing SIMADO GFX11 with a PBX. For more information, see “Multi-Stage Dialing”.

Similarly, you can use ANT for Speed Dialing. You can configure short codes for number strings that you frequently dial as Dialed Number Strings and the complete number strings that should be dialed out in place of the short code as the Substitute Number Strings.

How to configure

- Enter SE Mode.

- To configure the Dialed Number String, dial:
  291-Number Index-Dialed Number String-#*
  Where,
  Number Index is from 1 to 6.
  Dialed Number String can be of maximum 8 characters. Acceptable digits and characters are 0-9, #, *, A, B, C, D, F, P and +

  Default: **Blank**

  If you are configuring DTMF digits and characters in the number string, dial the codes given in the table below for each DTMF digit:

DTMF Digits	Codes
+	#1
F (Flash)	#2
P (Pause)	#3
A	#4
B	#5
C	#6
D	#7
#	##
Any Digit (0-9)	#8
End of programming command	#*

- *While configuring DTMF Digits in the number string, if you dial any code other than those given in the table, the system will play error tone.*
- *The maximum number of digits you can configure in the Number string is 16. The system considers each DTMF character (see above table) that you include in the Number string as two digits. So, DTMF characters you include in the Number String will use up more digit length than the numeric DTMF digits.*
- *In the Dialed Number String, you can configure **Any Digit code (#8)** as the first digit only.*

- To clear the Dialed Number String, dial:
  291-Number Index-#*

- To configure the Substitute Number String, dial:
  292-Number Index-Substitute Number String-#*
  Where,
  Number Index is from 1 to 6.
  Substitute Number String can be of maximum 8 characters. Acceptable digits and characters are 0-9, #, *, A, B, C, D, F, P and +

  If you are configuring DTMF Digits and characters, refer the table given in the previous command for the codes for each DTMF digit.

  Default: **Blank**

- To clear the Substitute Number String, dial:
  292-Number Index-#*

- To configure the Calling Card Service Number Index, dial:
  293-Number Index-Calling Card Service Number Index-#*
  Where,
  Number Index is from 1 to 6.
  Calling Card Service Number Index is from 0 to 2.

  Default: **0**

- To configure the Calling Card Password Index, dial:
  294-Number Index-Calling Card Password Index-#*
  Where,
  Number Index is from 1 to 6.
  Calling Card Password Index is from 0 to 2.

  Default: **0**

- To clear all the entries from Automatic Number Translation table, dial:
  290-0-#*

*If you are **not** using the ANT table for "Multi-Stage Dialing", configure **'0'** as the **Calling Card Service Number Index** and the **Calling Card Password Index** in the ANT table.*

- Exit SE Mode.

Battery Back-up during Power Failure[7]

SIMADO GFX11E supports battery back-up during power failure, to facilitate communication in the emergency condition.

When there is a power failure, SIMADO GFX11E will start operating on battery. SIMADO GFX11E will operate on battery for 4 hours in idle mode and 2 hours in talking mode.

You can view the status of the battery—low battery, charging, fully charged—through the LED indication. See "LED Indication during Normal Functioning" under *Powering ON SIMADO GFX11/GFX11E*.

When power supply is available, the battery will be charged automatically through the external power supply.

At first power on, keep SIMADO GFX11E connected to the power supply for atleast 24 hours to enable correct and complete battery charging.

The life of battery depends on various factors such as quality of GSM signal, operating temperature of the system, system status (standby mode or talking mode).

You can view whether the system is working on battery or on external power supply through the LED indication.

Power LED (PWR)	Battery LED (BAT)	Meaning
OFF	OFF	System is OFF.
OFF	ON	System is ON and working on battery.
	Slow Blinking	
	Fast Blinking	
ON	OFF	System is ON and working on External Power Supply. Battery is absent.
ON	ON	System is ON and working on External Power Supply. Battery is present and is charging or fully charged.
	Slow Blinking	

When there is a power failure, SIMADO GFX11E will start operating on battery. It will send an alert SMS "***Operating on Battery***" to the pre-programmed numbers immediately.

Similarly, it will send an alert SMS "***Low Battery***" to the pre-programmed numbers, when the system is working on battery and low battery is detected.

*Alert message strings "**Operating on Battery**" and "**Low Battery**" are non-programmable.*

You can configure upto 2 emergency contact numbers for receiving an alert SMS. Alert SMS is sent by the system only when the Mobile Port is idle or in speech condition. If the Mobile Port is in dialing state or incoming ringing state, the system will wait for the Mobile Port to be Idle or in speech condition and then deliver the SMS.

7. *Applicable only for SIMADO GFX11E.*

How to configure

- Enter SE Mode.

- To configure the Emergency Contact Number, dial:
  351-Number Index-Emergency Contact Number-#*
  Where,
  Number Index is from 1 and 2.
  Emergency number can be of maximum 16 digits. Acceptable digits are 0 to 9.

  Default: **Blank**

  The number will be stored at the Index you dialed.

- To clear the Emergency Contact Number at an index, dial:
  351-Number Index-#*
  Where,
  Number Index is from 1 and 2.

  The number stored at the dialed Index will be cleared.

- Exit SE Mode.

Call Divert

The Call Divert feature of SIMADO GFX11 enables you to divert your calls to another destination number of your choice.

Call divert is a service provider dependent feature. To use this feature, it should be activated by your GSM service provider on the SIM Card inserted in SIMADO GFX11.

If you are using a SIM registered with the VoLTE network, Call Divert will not be supported.

SIMADO GFX11 supports four types of Call Divert:

- **Call Divert-Unconditional:** All incoming calls on the Mobile Port are diverted unconditionally to the desired destination number.
- **Call Divert-When busy**: All incoming calls on the Mobile Port are diverted to the desired destination number, if the FXS Port is busy.
- **Call Divert-When No Reply**: All incoming calls on the Mobile Port are diverted to the desired destination number, if the FXS Port does not answer the call.
- **Call Divert-When SIMADO GFX11 is Off or there is no coverage**: All incoming calls on the Mobile Port are diverted to the desired destination number, if SIMADO GFX11 is switched off or there is no network coverage.

You can select the type of Call Divert you want to use and configure the desired destination number.

How to configure

Call Divert feature can be configured from the SE mode as well as from the SA mode.

- Enter SE/SA Mode.
- To set call divert, dial:
  620-Option-Code-Destination Number-#*
  Where,
  Destination Number is the number to which the calls are to be diverted. Destination number can be of maximum 16 digits.

  Option is:
  1 for All Calls - Unconditional
  2 for When Busy
  3 for when No Reply
  4 for When SIMADO GFX11 is Off or No Network Coverage

  Code is:
  0 for Disable
  1 for Enable

  Default: **Disabled**

To cancel call divert, dial:
620-Option-Code-#*

- Exit SE/SA Mode.

You cannot set more than one type of call divert at a time.

Call Duration Display

Using the Call Duration Display feature, you can check the duration of calls made from and received on the FXS Port. You can check the duration of following types of calls:

- Last Call
- All Received Calls
- All Dialed Calls
- All Calls

To be able to view the duration of calls, the telephone connected to the FXS Port must have a display. The CLI Type configured on the FXS Port should be either DTMF or FSK. For instructions on configuring the CLI Type, see "FXS Port Parameters".

How to view Call Duration

You can view Call Duration from the SE mode as well as from the SA mode.

- Enter SE/SA Mode.

- To view the duration of the desired call type, dial:
  610-Call Type-#*
  Where,
  Call Type is:
  1 for Last Call
  2 for All Received Calls
  3 for All Dialed Calls
  4 for All Calls

  If CLI type set on the FXS Port is **FSK**, the format of call display would be as under:

  N HHMMSS
  XX DUR:HH:MM:SS

  Where,
  N is the Type of Call.

N	Meaning
1	Last Call
2	All Received Calls
3	All Dialed Calls
4	All Calls

  XX represents the following:

XX	Meaning
IC	Incoming Call
OG	Outgoing Call
RC	Received Calls
DC	Dialed Calls
AC	All Calls

  DUR stands for Duration

  HH stands for Hours (Range: 00 to 99)

MM stands for Minutes (Range: 00 to 59)

SS stands for Seconds (Range: 00 to 59)

For Example:

Call duration of the last incoming call of 30 seconds will be displayed as shown below:

```
1 000030
IC DUR:00:00:30
```

If CLI type set on the FXS Port is **DTMF**, the format of call display would be as under:

```
N HHMMSS
```

Where,

N is the Type of Call.

N	Meaning
1	Last Call (may be an incoming or an outgoing call)
2	All Received Calls
3	All Dialed Calls
4	All Calls

HHMMSS stands for Hours: Minutes: Seconds

For Example:

Call duration display of last incoming call of 30 seconds will be displayed as shown below:

```
1 000030
```

- To clear all call-duration display, dial:
  610-0-#*

- Exit SE/SA Mode.

If the total call duration exceeds 99:59:59, call duration will reset to 00:00:00.

Call Progress Tones

Call Progress Tones (CPT) are audible tones sent to the calling parties to show the status of phone calls, like dial tone, error tone, busy tone. Each tone has a distinctive tone frequency and cadence assigned to it.

SIMADO GFX11 supports the following types of Call Progress Tones:

- Dial Tone
- Busy Tone
- Error Tone
- Programming Tone
- Confirmation Tone
- Ring Back Tone

Call Progress Tones are country specific. Tone standards vary from country to country. SIMADO GFX11 enables you to select the Call Progress Tones to match the tone standards of your country.

How to configure

Call Progress Tones can be configured from SE mode only.

- Enter SE Mode.

- To configure CPT for a country, dial:
  104-CPT Code-#*

  Refer the table below for CPT Codes assigned to different countries.

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

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

Default: **10 (India)**

For example, to configure CPT for Belgium, dial: **104-03-#***

- Exit SE Mode.

- *In above table, * refers to modulation of two frequencies (f1 and f2) and + refers to addition of two frequencies. Cont. is abbreviation for continuous.*
- *Confirmation tone for all countries is: 400Hz, 0.1 on 0.1 off*
- *Programming tone for all countries is: 400Hz, 0.1 on 0.9 off*

Calling Line Identification Restriction (CLIR)

You can use Calling Line Identification Restriction (CLIR) feature to suppress your number and name in the outgoing calls you make from SIMADO GFX11. You can make anonymous calls using CLIR.

This is Service Provider dependant feature. To use this feature, you must get CLIR facility activated by your service provider.

How to configure

Only SE can configure CLIR.

- Enter SE Mode.
- To enable/disable CLIR on the Mobile Port, dial:
  202-Code-#*
  Where,
  Code is
  0 for Disable
  1 for Enable

  Default: **Disabled**
- Exit SE Mode.

Some networks do not allow outgoing calls when CLIR is activated. So, check with your service provider before activating and using CLIR.

Emergency Number Dialing

This topic is applicable for firmware version V7R1.For version earlier than this, refer to “Emergency Number Dialing in Firmware Version earlier than V7R1”.

The Emergency Number Dialing feature enables users to call emergency services such as Ambulance, Fire Brigade, Police from the Mobile Port of SIMADO GFX11.

To use this feature, make sure that the Mobile Port is enabled and you have configured the Emergency Number Table in the system.However, there are certain numbers supported by the modules too. If you configure a number that is not supported by the module in the table, the system will not recognize this number as an emergency number and will not dial out this number.

The Emergency Number Table stores upto 5 numbers against Index 1 to 5. By default, certain emergency numbers are pre-configured in this table, which you cannot change. However, you may add numbers, according to your requirement to this table.

This is how Emergency Number Dialing works:

- A user dials a number.
- SIMADO GFX11 first checks the Emergency Number Table.
- If the dialed number matches with any of the un-editable numbers in the table, SIMADO GFX11 will dial out the number 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

For the above conditions, the un-editable numbers in the table will be dialed out only when these are applicable as Emergency numbers in the country where the system is installed.

- If the dialed number matches with any of the editable numbers in the table, SIMADO GFX11 dials out the number only when the SIM is present and it is registered with the network.

When the dialed number matches with an Emergency Number in the table, SIMADO GFX11 will not check the Allowed and Denied Number Lists or the Automatic Number Translation Table. It will dial out the number.

When 2G GSM engine Quectel M95-V2 is installed, SIMADO GFX11 will support the following Emergency Numbers with and without SIM present in the system.

Emergency Numbers **with SIM** present in the system:

- 112
- 911
- 000
- and other configurable numbers.

Emergency Numbers **without SIM** present in the system:

- 999

- 120
- 000
- 110
- 118
- 119
- 08

When 3G GSM engine Quectel or UC20 4G GSM engine Quectel EC25 is installed, SIMADO GFX11 will support the following Emergency Numbers with and without SIM present in the system.

Emergency Numbers **with SIM** present in the system:
- 112
- 911
- 000
- and other configurable numbers.

Emergency Numbers **without SIM** present in the system:
- 112
- 911
- 000
- 08
- 110
- 999
- 118
- 119

If GSM engine other than Quectel is installed in your system, then refer to “Emergency Number Dialing in Firmware Version earlier than V7R1”.

How to configure

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

As mentioned earlier, the Emergency Number Table stores up to 5 numbers. Each number is stored against an Index, 1 to 5. Also, by default, certain emergency numbers are pre-configured in this table, which you cannot change.

The default Emergency Table is as follows:

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

The Emergency Number you want to add to the table must be stored at Index that is editable. You can add numbers at Index 1 and 2 only.

To configure the Emergency Number Table,

- Enter SE Mode.

- To add an emergency number, dial:
  151-Index-Emergency Number-#*
  Where,
  Index is 1 and 2.
  Emergency number can be of maximum 3 digits. Acceptable digits are 0 to 9.

  The number will be stored at the Index you dialed.

- To clear the emergency number at an index, dial:
  151-Index-#*
  Where,
  Index is 1 and 2.

  The number stored at the Index you dialed will be cleared.

- Exit SE Mode.

Hotline

The Hotline feature connects you to a particular number as soon as you go Off-Hook on the telephone connected to the FXS Port of SIMADO GFX11. You can use Hotline to connect immediately to a number that you dial most frequently. The Hotline feature eliminates the repeated dialing of this number.

To use Hotline, you must first enable this feature, configure the *Hotline Delay Timer* and the desired number which you want to be dialed out when you go Off-Hook on the telephone connected to the FXS Port.

Here is an example of how Hotline works:

- You dial the number 2654227 frequently.
- You set Hotline for this number and set the Hotline Delay Timer to 3 seconds.
- Whenever you go Off-Hook, SIMADO GFX11 will play dial tone and wait for 3 seconds
- If you do not dial any digit during the Hotline Delay Timer, SIMADO GFX11 dials the hotline number 2654227.
- When the called person answers the call, you get connected.

However, if you dial a number before the Hotline Delay Timer expires, SIMADO GFX11 will outdial the number you dialed.

How to configure

- Enter SE Mode.

- To enable/disable hotline, dial:
  281-Flag-#*
  Where,
  Flag is:
  0 for Disable
  1 for Enable

  Default: **Disabled**

- To configure the Hotline destination number, dial:
  282-Destination Number-#*
  Where,
  Destination number is the number string of maximum 16 digits.

- To set the Hotline Delay Timer, dial:
  283-Timer-#*
  Where,
  Timer is from 1 to 9 seconds.

  Default: **3 seconds**

- Exit SE Mode.

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 SIMADO GFX11 is switched on, the IMEI code is transmitted and is verified in the network database called Equipment Identity Register (EIR).

The EIR consists of three lists: White list, Grey list and Black list.

- The White list consists of equipment identities that are fully permitted to access and use the network.
- The Black list contains all the equipment identities that are barred from using the network.
- The Grey list contains those equipment identities that are not barred from using the network services but are tracked by the network for evaluation purpose.

The Network will allow the GSM module to access the GSM network only if the IMEI code is registered in the White list of EIR. This number is useful in case SIMADO GFX11 is lost or stolen. The network operator can block the IMEI number of the GSM module installed in the system. Thus the important information stored in the system can be protected from misuse.

- The currently used Structure of IMEI number is as follows:
  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 configuration.
  D is Luhn check digit of the entire configuration or 0. (This is an algorithm that validates the ID number)

You can view the IMEI on the telephone connected to the FXS Port of SIMADO GFX11 irrespective of the CLI type (DTMF/ V.23 FSK/ FSK Bellcore) set on the FXS Port.

How to check IMEI code

To check IMEI code of the GSM module, follow the steps given below:

- Go Off-Hook.
- Dial **#*-13**
- You will get confirmation tone.
- Go On-Hook.
- IMEI Code of the GSM module will be displayed on the LCD of your telephone.

  For Example:

  IMEI Code of the GSM module will be displayed as shown below:

  353451041494822

- Go Off-Hook again, you will get dial tone.

Location Information Indication

Whenever you change the location of SIMADO GFX11, the network updates the current location of SIMADO GFX11. Using the Location Information Indication feature, you can find out the current location of SIMADO GFX11 on the display of the telephone connected to the FXS Port.

Location Information Indication is a service provider-dependent feature. To be able to use this feature, you must do the following:

- Get this feature enabled by your service provider.
- Configure the **CLI Type** on the FXS Port as **FSK**.

How to configure

- Enter SE Mode.

- To enable/disable location information indication on the Mobile Port, dial:
  205-Flag-#*
  Where,
  Flag is
  0 for OFF
  1 for ON

  Default: **OFF**

- Exit SE Mode.

How to view Location Information

To view the Location Information on your telephone, follow the steps given below:

- Go Off-Hook.
- Dial **#*-12**
- You will get confirmation tone.
- Go On-Hook.
- The Location Information will be displayed on the LCD of your telephone as shown below.

  MAKARPURA-GIDC

- Go Off-Hook again, you will get dial tone.

If no information is available from the network, the message 'NO LOCATION' will be displayed.

Multi-Stage Dialing

The Multi-stage Dialing feature is used where numbers dialed by users need to be modified, broken into parts, and dialed out in various stages of the call. This feature is typically used in applications like Calling Card, where users are required to dial digits in stages when making a call using a calling card.

Another application where Multi-stage Dialing is used is when SIMADO GFX11 is used as a gateway to connect a PCO and a PBX for GSM-Fixed line network connectivity.

Let us understand how this feature works in such applications with the help of examples.

Example 1: Multi-stage Dialing in Virtual Calling Card application

A typical example of Multi-Stage Dialing is the use of prepaid Calling Cards. Here, the person using a calling card must dial a fixed number string before dialing the actual number. When using a calling card,

- Users must first dial the number of the Calling Card server, for example: **160223**.
- After the call is answered by the Calling Card server, users must dial the PIN provided by the calling card service provider, for example **113212**.

  Some service providers also prompt the users to select a language before navigating further in the menu.
- After dialing the PIN number, users can dial the number they want to call, for example **0014125126508**.

Thus, when using a calling card, users must dial a very lengthy number string, each time they need to make a call using the calling card.

The use of Multi-Stage Dialing saves the time and effort of dialing out lengthy digits in stages. Here, the user dials only the end destination number and the system dials out the calling card number, password and any other prefixes that need to be dialed.

To use this feature for the Calling Card application, you must first do the following:

- Configure the Calling Card Server Number string at an Index in the **Calling Card Services Number table**. In this example, it is 160223.

  The Calling Card Service Number table would be configured as follows:

Number Index	Calling Card Number Services Number String
1	160223
2	

- Configure the Calling Card Password (PIN) provided by the service provider at an Index in **the Calling Card Password table**. In this example, it is 113212. The Calling Card Password table would be configured as follows:

Number Index	Calling Card Password String
1	113212
2	

- Configure the "Automatic Number Translation" table. The Automatic Number table consists of the Dialed Number strings and the Substitute Number strings, the Calling Card Services Number Index and the Calling Card Password Index.

  - You must configure the prefix that you expect users to dial when they use this Calling Card as **Dialed Number** string.

  - As **Substitute Number** string, you must configure the number string that the system should dial out in place of the Dialed string. In this case, the dialed number string and substitute number string are the same: the prefix '00'.

  - You must configure the Index number you assigned to the calling card in the Calling Card Services Number Index of the ANT Table. In this example, **1**.

  - You must configure the Index number you assigned to the password of the calling card in the Calling Card Password Index of the ANT Table. In this example, **1**.

    The ANT Table you configure would be as shown below:

Index	Dialed Number String	Substitute Number String	Calling Card Services Number Index	Calling Card Password Index
1	00	00	1	1
2				
3				
4				
5				
6				

- With the relevant tables configured, now, when the user dials the end destination number, 0014125126508, the system will check the ANT Table.

- If the number dialed by the user matches with the Dialed Number String in the table, the system checks the Calling Card Number Services Number Index. It fetches the number configured for this index in the Calling Card Services Number Table. The system dials out this number.

- After that, the system checks the Calling Card Password Index in the ANT table. It fetches the number configured for this index in the Calling Card Password table, and dials out this number.

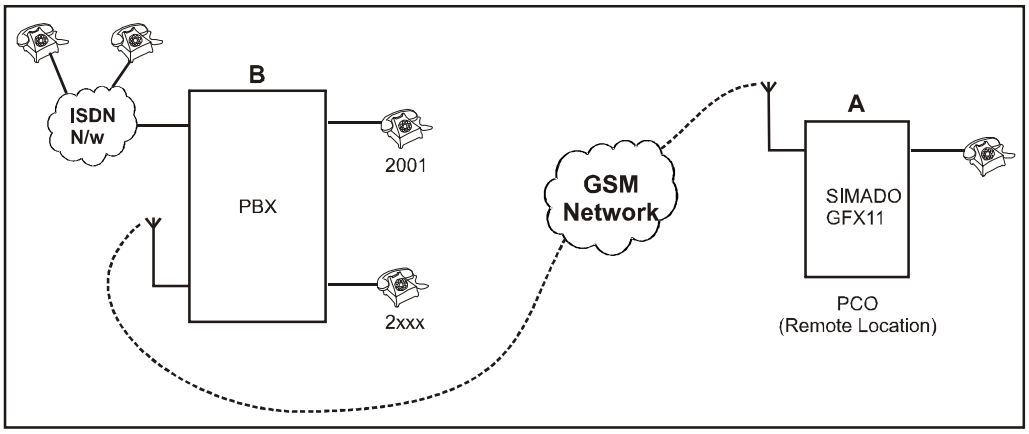
- The system then dials out the string configured as the Substitute number in the ANT table, and finally the end destination number dialed by the user.

Example 2: Multi-stage Dialing in PCO application

A PCO owner at a remote rural, hilly area wants to provide telephony services to the residents of this area using SIMADO GFX11 and a PBX located in an urban area where fixed lines CO and ISDN networks are available.

The following illustration shows how SIMADO GFX11 is connected with the PBX. Here, SIMADO GFX11 is located at the PCO in the remote area. The PBX is located in the urban area and has a GSM card installed. The PCO and the PBX have Closed User Group (CUG) services of the GSM service provider. The SIM Cards installed in

SIMADO GFX11 at the PCO and the GSM Card in the PBX are provisioned under CUG for free calling. The fixed lines providers of the PBX offer fixed lines at low rates.



SIMADO GFX11 at the PCO is so configured that whenever a customer makes a call, the call is first made to the GSM Port of the PBX. Using DISA[8] services of the PBX, the final destination number dialed by the customer is dialed, and the call is made to the final destination. However, the customer needs to dial only the destination number.

To use Multi-stage dialing for this application,

- the GSM Port of the PBX at location B should be configured for DID/DISA mode.
- you must configure the following parameters in SIMADO GFX11 at location A (the PCO):
  - Calling Card Service Number table
  - Calling Card Password table
  - Automatic Number Translation table
  - Call Proceeding Tone

  a. The mobile number of GSM Port of PBX at location B should be configured at an index in the 'Calling Card Service Number' table.

Number Index	Calling Card Number Services Number String
1	Mobile Number of GSM Port of PBX at location B
2	Blank

  The 'DISA login code + Extension Number + Extension Password' should be configured at an index in the 'Calling Card Password' table. The Calling Card Password String table would be configured like this:

Number Index	Calling Card Password String
1	107920015656
2	Blank

  Here, 1079 is the DISA login code, 2001 is the extension number and 5656 is the extension password.

8. *Direct Inward System Access.*

b. The 'Automatic Number Translation' table should be configured as given below:

Index	Dialed Number String	Substitute Number String	Calling Card Services Number Index	Calling Card Password Index
1	0044	0044	1	1
2				
3				
4				
5				
6				

c. The call proceeding tone option should be configured as **Network** tone. SIMADO GFX11 supports the following Call Proceeding tones,

- **Network Tone:** The system connects the caller to the network after dialing the Calling Card Number. The tones played by the Network are heard by the caller till the destination answers the call.
- **Pseudo Network Tone:** The system plays a tone by itself after dialing the Calling Card Number till all the digits are dialed out.
- **Silence:** The system plays silence after dialing the Calling Card Number till all the digits are dialed out.
- **Silence + Ring Back Tone:** The system plays silence after dialing the Calling Card Number for some time and then plays Ring Back tone till all the digits are dialed out.

With the above configuration in place, whenever a customer at the PCO dials the number 00449652324256, the call will be processed as follows:

- SIMADO GFX11 plays Call Proceeding Tone to the caller (customer). You can set the type of call proceeding tone you want to be played to callers. Here, Network Tone is set.
- SIMADO GFX11 will check the ANT table. Since Substitute Number String is same as Dialed Number String, no number translation will take place.
- Next, the system will check the Calling Card Services Number Index and fetch the mobile number of the GSM Port of the PBX at location which is configured in the Calling Card services Number table. The system will make a call to this mobile number.
- When the call lands on the GSM Port of the PBX at location B, the PBX will answer the call, as the GSM Port is configured in DID/DISA mode.
- SIMADO GFX11 will check the Calling Card Password index configured in the ANT table, and will fetch the DISA Login code, the extension number and password string. It will dial this number string.
- After that, the system dials out the string configured as the Substitute number in the ANT table, and finally the destination number dialed by the customer.
- The call is made to the destination number.

If the 'Calling Card Services Number string' in the ANT table is configured as '0' then only ANT logic shall be applied and the multi-stage dialing will not work. Also, the Calling card password shall not be dialed as it shall not be applicable in this case.

How to configure

- Enter SE Mode.

- To configure the 'Calling Card Service Number' table, dial:
  341-Number Index-Calling Card Services Number String-#*
  Where,
  Number Index is 1 and 2.
  Calling Card Services Number String is the number of the calling card server. This number may contain up to 8 characters. You can configure 0-9, #,*, A, B, C, D, F (Flash) and +

  Default: **Blank**

  If you are configuring DTMF digits and characters in the number string, dial the codes given in the table below for each DTMF digit:

DTMF Digits	Codes
+	#1
F (Flash)	#2
A	#4
B	#5
C	#6
D	#7
#	##
End of programming command	#*

- *While configuring DTMF Digits in the number string, if you dial any code other than those given in the table, the system will play error tone.*

- *The maximum number of digits you can configure in the Number string is 16. The system considers each DTMF character (see above table) that you include in the Number string as two digits. So, DTMF characters you include in the Number String will use up more digit length than the numeric DTMF digits.*

- To clear the Calling Card Number Services Number String from the table, dial:
  341-Number Index-#*

- To configure the Calling Card Password, dial:
  342-Number Index- Calling Card Password-#*
  Where,
  Number Index is from 1 to 2.
  Calling Card Password is a number string of a maximum of 8 characters (16 digits). You can configure 0-9, #,*, A, B, C, D, F (Flash) and +

  Default: **Blank**

  If you are configuring DTMF digits and characters in the number string, dial the codes given in the table for the previous command.

- To clear the Calling Card Password, dial:
  342-Number Index-#*

- To configure Call Proceeding Tone, dial:
  122-Call Proceeding Tone-#*

Where,
Call Proceeding Tone is
1 for Network Tone
2 for Pseudo Network Tone
3 for Silence
4 for Silence + Ring Back Tone

Default: **Network Tone**

- To configure DTMF Out Dial ON Time for dialing out the DTMF digits on the Mobile Port, dial:
  241-DTMF Out Dial ON Time-#*
  Where,
  DTMF Out Dial ON Time is from 000 to 255.
  000 means default ON time of the module (70 ms) and 001 to 255 means <DTMF Out Dial ON Time>*100 ms i.e. from 100 ms to 25500 ms.

  Default: **100 milliseconds**

As the detection of DTMF digits received over GSM network is not perfect, the performance of this feature is likely to be affected.

- Exit SE Mode.

Ring Type

SIMADO GFX11 enables you to select country-specific Ring Type for the system. You can select the Ring Type that matches the frequency and cadences of the rings supported by the local exchange in the country where SIMADO GFX11 is installed.

How to configure

- Enter SE mode.

- To select a matching ring type, dial:
  311-Code-#*
  Where,
  Code is the Ring Type code from 01 to 25. For Ring Type codes, see the table below. The values in this table are as per ETSI Standard.

Ring Type 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	Brazil	25	1.0	4.0		
03	China	25	1.0	3.0		
04	Egypt	25	2.0	4.0		
05	France	25	1.5	3.5		
06	Germany	25	3.5	5.5	0.79	1.1
07	Greece	25	1.0	4.0		
08	India	25	0.4	0.2	0.4	2.0
09	Israel	25	2.0	3.0		
10	Italy	25	1.0	4.0		
11	Japan	25	1.0	2.0		
12	Korea	25	1.0	3.0		
13	Malaysia	25	2.0	3.0		
14	New Zealand	25	2.0	3.0		
15	Poland	25	2.0	3.0		
16	Portugal	25	1.0	5.0		
17	Russia	25	1.0	3.0		
18	Singapore	25	0.4	0.2	0.4	2.0
19	South Africa	25	0.4	0.2	0.4	2.0
20	Spain	25	1.5	3.0		
21	Thailand	25	2.0	3.0		
22	UAE	25	2.0	3.0		
23	UK	25	0.4	0.2	0.4	2.0
24	USA/Canada	25	2.0	4.0		
25	Belgium	25	1.0	3.0		

  Default: **08 (INDIA)**

  For Example: To configure Ring Type for China, dial: **311-03-#***

- Exit SE mode.

Security Code

Using Security Code, you can restrict the usage of SIMADO GFX11 to certain applications and restrict users's access to the system.

For example, in a PCO application, you may want to use SIMADO GFX11 with a particular PCO machine only. You can do this by configuring the Security Code.

When you configure Security Code, users must dial Security Code to be allowed to dial numbers from the FXS Port of SIMADO GFX11. If a user fails to dial the Security Code, the system will play error tone.

Thus, you can prevent the system from being used with other devices and by unauthorized persons.

If you do not want the Security Code dialed from the FXS port to be routed through the Mobile Port, use Automatic Number Translation (ANT). Configure the Security Code as Dialed Number String in the ANT table, and keep the corresponding Substitute Number String blank. For instructions, see "Automatic Number Translation".

How to configure

- Enter SE mode.
- To configure the security code, dial:
  121-Security Code-#*
  Where,
  Security Code number can be of maximum 8 digits.
  Allowed digits are 0 to 9, A, B, C, and D.

  Default: **Blank**

  If you are configuring DTMF digits and characters in the number string, dial the codes given in the table below of each DTMF digit:

Special Digits	Code for Programming
A	#4
B	#5
C	#6
D	#7
End of Programming Command	#*

- *While configuring DTMF Digits in the number string, if you dial any code other than those given in the table, the system will play error tone.*
- *The maximum number of digits you can configure in the Number string is 16. The system considers each DTMF character (see above table) that you include in the Number string as two digits. So, DTMF characters you include in the Number String will use up more digit length than the numeric DTMF digits.*

- To clear the security code, dial:
  121-#*
- Exit SE mode.

Service Provider Lock

Service Provider Lock feature enables mobile service providers to lock SIMADO GFX11 to work with their own network only. For example, if SIMADO GFX11 is locked to work with 'Airtel', it will not work with any other service provider.

3G and 4G modules do not support this feature.

To lock SIMADO GFX11 to work with a specific service provider, follow the steps given below:

- Insert the SIM Card of the service provider with which SIMADO GFX11 is to be locked in the SIM Card slot.
- When the SIM gets registered with the network, dial the command to change Default Service Provider Password and configure the New Service Provider Password.
- Dial the command to lock SIMADO GFX11 with the service provider.
- Restart the system.
- Now SIMADO GFX11 will work only with the service provider whose SIM Card is inserted in the system.

How to configure

- Enter SE Mode.
- To change service provider password, dial:
  702-Old Service Provider Password-New Service Provider Password-#*
  Where,
  Old Service Provider Password is of four digits. Acceptable digits are 0 to 9.
  New Service Provider Password is of four digits. Acceptable digits are 0 to 9.

  Default Service Provider Password: **1234**
- To Lock/Unlock the system with the service provider, dial:
  701-Service Provider Password-Code-#*
  Where,
  Service Provider password is of four digits.
  Code is
  0 for Unlock
  1 for Lock

  Default: **'0' (Unlock)**

- *If the SIM Card is absent or not registered with the network and you have dialed the command to Lock/ Unlock the system with the service provider, SIMADO GFX11 will accept the command you dialed, but will not lock/unlock the system.*
- *The Service Provider Password is not set to default or changed, when you "Reinstate the Default Settings".*

If Service Provider password is forgotten, contact Matrix Technical Support team.

- Exit SE Mode.

Short Messaging Services (SMS)

Using Short Message Service (SMS), you can receive text messages on SIMADO GFX11. Short Messaging Service of SIMADO GFX11 notifies you of the receipt of a new message in the form of a signal or alert on the telephone connected to the FXS Port.

The received messages are stored at various locations in the memory of the SIM Card. The locations where the messages are stored are referred to as indexes. You can read the received messages if your telephone supports FSK CLI Type. After reading the messages, you can also delete them.

If you are using a SIM registered with the VoLTE network, SMS sending will not be supported.

How to configure

- Enter SE Mode.
- To enable/disable the notification of SMS, dial:
  203-Flag-#*
  Where,
  Flag is
  0 for Disable
  1 for Enable

  Default: **Disabled**
- Exit SE Mode.

How to Read the message

- Lift the receiver of telephone connected to SIMADO GFX11.
- Dial ***#*-21-Index.*** Index is the location where the SMS is stored. Index is from 001 to xxx, where, xxx is the maximum SMS capacity of the SIM Card.

  For example, if the SIM Card can store maximum 100 messages then range of index will be 001 to 100.
- Go On-Hook.
- You will get ring followed by first 16 characters of the message received.
- Again you will get ring followed by next 16 characters of the message received. This will continue till the whole message is completed.
- If you go Off-Hook during SMS retrieving process SMS retrieval is aborted and you will get dial tone.

How to Delete the message

- Lift the receiver of telephone connected to SIMADO GFX11.
- Dial ***#*-22-Index.***

- You will get Confirmation Tone.
- Go On-Hook.
- Message at the indicated index will be deleted.

Read messages are deleted one by one index-wise.

Appendix

Acronyms

ANT	Automatic Number Translation
CLIR	Calling Line Identification Restriction
CPT	Call Progress Tones
DTMF	Dual Tone Multi-Frequency
ETSI	European Telecommunications Standards Institute
FSK	Frequency Shift Keying data Transmit
FXS	Foreign Exchange Subscriber
GSM	Global System for Mobile (Communication)
IMEI	International Mobile Equipment Identity
ITU	International Telecommunication Union
LED	Light Emitting Diodes
MCC	Mobile Country Code
MNC	Mobile Network Code
ms	milliseconds
PBX	Private Branch Exchange
PIN	Personal Identification Number
PSTN	Public Switched Telephone Network
SA	System Administrator
SE	System Engineer
SIM	Subscriber Identification Module
SMS	Short Messaging Services

Features at a Glance

Sr. No.	Description	Feature Commands
01	To know the Signal Strength	***#*-11***
02	To know the Location Information	***#*-12***
03	To know the IMEI code	***#*-13***
04	To know the current network with which the GSM Module is registered	***#*-14***
05	To enter into SA mode	***#*-18-SA Password***
06	To enter into SE mode	***#*-19-SE Password***
07	To exit SE/SA mode	***00-#****
08	Reading SMS using telephone instrument	***#*-21-Index***
09	Deleting SMS using telephone instrument	***#*-22-Index***

Product Specifications of SIMADO GFX11/GFX11E

System Capacity

SIM Connection	:	1
Extension Port (FXS)	:	1
Control Architecture	:	CMOS Micro-Controller with Stored Program Control

Mobile Port

Frequency Bands

Module	GSM 850	EGSM 900	DCS 1800	PCS 1900	UMTS 850	UMTS 900	UMTS 1900	UMTS 2100	Rx-diversity	GNSS
Quectel UC20-G	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Quectel M95	✓	✓	✓	✓	×	×	×	×	×	×

Note: If your SIMADO GFX11/GFX11E has SIMCOM or WAVECOM or Sierra Wireless SL6087 engines, Matrix will not provide any future assistance for these engines.

Compliant	:	ETSI GSM Phase2/2+
SIM Interface	:	1.8V, 3V
RF Transmission Power	:	Class 4 (2W) at GSM850/EGSM900 MHz band, Class 1 (1W) at DCS1800/PCS1900 MHz band, Class 3 (0.25W) at WCDMA 850/1900/ 2100
RF Sensitivity	:	Better than -102dBm at GSM 850/EGSM900/PCS1900, Better than -106dBm at WCDMA850, Better than -108dBm at WCDMA1900/2100
Speech Gain (Transmit and Receive)	:	Configurable

Module Supported : Quectel UC20-G		
Standards and directive	**Applied / Complied Harmonized Standards**	
	RE Directive 2014/53 EU, Article 3(1)(a) ● Safety	EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
	RE Directive 2014/53 EU, Article 3(1)(a) ● Health	EN 62311:2008
	RE Directive 2014/35 EU, Article 3(1)(b) ● EMC	ETSI EN 301 489-1 V2.1.1, ETSI EN 301-408-52 V1.1.0 ETSI EN 301 489-19 V2.1.0
	RE Directive 2014/53 EU, Article 3(2) ● Radio	EN 301 908-1 V11.1.1, EN 301 908-2 V11.1.1 EN 301 511 V12.5.1*, Draft EN 303 412 V1.1.0*
	* Note: This is non-harmonized radio standard accepted by the RED (Radio Equipment Directive)	
FCC Identifier	XMR201510UC20	
Moducations Supported	GSM: GMSK, 8PSK, WCDMA: BPSK, QPSK, 16QAM GPS: BPSK GLONASS: OFDM	

Module Supported: Quectel M95	
Standards and directive	2014/53/EU Radio Equipment Directive ETSI EN 301 489-1 V1.9.2 (2011-09), ETSI EN 301 489-7 V1.3.1 (2005-11) ETSI EN 301 511 V9.0.2 (2003-03), 3GPP TS 51.010-1 V9.1.0 (2010-03) EN 62311:2008 EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
FCC Identifier	XMR201512M95
Modulations Supported	GMSK(EGSM), GMSK(DCS)

Antenna for 2G and 3G

Antenna Type : Fixed Omni Directional Swivel Antenna

Antenna Gain : Dipole = 1.8/2.5 dBi

Antenna Connector : SMA (Male), 50Ω

Module Supported: Quectel EC25-A	
Technology	**LTE / VoLTE** LTE Version : 3GPP E-UTRA Release 10
Frequency Bands	**FDD LTE:** B2/B4/B12 **Uplink Frequency band:** 1850 MHz – 1910 MHz 1710 MHz – 1755 MHz 699 MHz – 716 MHz **Downlink Frequency band:** 1930 MHz – 1990 MHz 2110 MHz – 2155 MHz 729 MHz – 746 MHz **WCDMA: B2/B4/B5** 1,900 MHz 2,100 / 1,700 MHz 850 MHz (for U.S.)
FCC Identifier	XMR201605EC25A
Modulation Supported	QPSK, 16QAM and 64QAM

Module Supported: Quectel EC25-AU		
Standards and Directives	**SAFETY**	AS/NZS 60950.1 2011
	EMC	AS/CA S042.1:2015 , AS/CA S042.4:2015
		AS/NZS CISPR 32-2015
		AS& NZS 2772.2-2016/ ARPANSA Standard RPS3-2002
	ANTEL	3GPP TS 36.521 V9.5.0
		3GPP TS 36.523-1
		3GPP TS 51.010-1 V6.5.0
		ETSI TS 102 514
		ETSI TS 134.121-1 V9.1.0
Technology	**LTE / VoLTE** LTE Version : 3GPP E-UTRA Release 10	
Frequency Bands	**FDD LTE**: B1/B3/B5/B7/B28 **Uplink Frequency band:** 1920 MHz – 1980 MHz 1710 MHz – 1785 MHz 824 MHz – 849 MHz 2500 MHz – 2570 MHz 703 MHz – 748 MHz **Downlink Frequency band:** 2110 MHz – 2170 MHz 1805 MHz – 1880 MHz 869 MHz – 894MHz 2620 MHz – 2690 MHz 758 MHz – 803 MHz **WCDMA:** B1/B5 2,100 MHz 850 MHz (for U.S.)	
FCC Identifier	XMR201805EC25AU	
Modulation Supported	QPSK, 16QAM and 64QAM	

Module Supported: Quectel EC25-E , EC25-E Minipcie		
Standards and Directives	**SAFETY**	EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
	EMC	DRAFT EN301 489-1 V2.2.0
		DRAFT EN301 489-19 V2.1.0
		DRAFT EN301 489-52 V1.1.0
		EN 55032:2015
		EN 55024:2010+A1:2015
	RADIO SPECTRUM	EN301 511 V1235.1
		EN301 908-1 V11.1.1
		EN301 908-1 V11.1.1
		EN301 908-13 V11.1.1
		DRAFT EN303 413 V1.1.0
	HEALTH	EN 62311:2008
Technology	**LTE / VoLTE** LTE Version : 3GPP E-UTRA Release 10	
Frequency Bands	**FDD LTE:** B1/B3/B5/B7/B8/B20 **Uplink Frequency band:** 1920 MHz – 1980 MHz 1710 MHz – 1785 MHz 824 MHz – 849 MHz 2500 MHz – 2570 MHz 880 MHz – 915 MHz 832 MHz – 862 MHz **Downlink Frequency band:** 2110 MHz – 2170 MHz 1805 MHz – 1880 MHz 869 MHz – 894 MHz 2620 MHz – 2690 MHz 925 MHz – 960 MHz 791 MHz – 821 MHz **TDD LTE: B38/B40/B41** 2570 MHz - 2620 MHz 2300 MHz - 2400 MHz 2496 MHz - 2690 MHz **WCDMA: B1/B5/B8** 2,100 MHz 850 MHz (for U.S.) 900 MHz **GSM:** 900/1800 MHz	
FCC Identifier	NA	
Modulation Supported	GMSK , 8PSK , QPSK , 16QAM, 64QAM(DL)	

Module Supported: Quectel EC25-V	
Technology	**LTE / VoLTE** LTE Version : 3GPP E-UTRA Release 10
Frequency Bands	**FDD LTE**: B4/B13 **Uplink Frequency band:** 1710 MHz – 1755 MHz 777 MHz – 787 MHz **Downlink Frequency band:** 2110 MHz – 2155 MHz 746 MHz – 756 MHz
FCC Identifier	XMR201607EC25V
Modulation Supported	QPSK, 16QAM and 64QAM

Antenna for 4G LTE

Antenna Type	:	Monopole Omni Directional Swivel Antenna
Antenna Gain	:	1/3 dBi
Antenna Connector	:	SMA (Male), 50Ω

FXS Port

Connection	:	RJ11
Pulse Dialing	:	10 PPS +/- 10%, Make/Break = 33:67ms
DTMF Dialing and Reception	:	ITU-T Q.23 and Q.24
Off Hook AC Impedance	:	600Ω
Loop Feed	:	35mA (Max.)
Loop Limit	:	270Ω (Excluding telephone)
On-Hook voltage (Tip-Ring)	:	-48V nominal
Return Loss	:	>18dB
Longitudinal Balance	:	>40dB
Ringing Voltage:	:	Trapezoidal: 55Vrms@25Hz
Caller ID Presentation	:	DTMF, FSK ITU-T V.23 and FSK Bellcore 202A
Answer Signaling	:	None, Polarity Reversal

Disconnect Signaling	:	None, Polarity Reversal and Open Loop Disconnect
Disconnect Signaling time	:	500ms/Programmable Timer
Protection	:	Solid-state over voltage Secondary protection

Battery[9]

Internal Battery	:	NI-MH AAA 7.2V/800mA

Power Supply

Supply Input	:	12VDC@1.25A (actual consumption), External Adapter (100-240VAC, 47-63HZ) supplied by Matrix
Power Consumption	:	5W (Typical)
Connector	:	Casio DC power Jack

LED

LED Indications	:	Battery (BAT)[a], Power Supply (PWR), Network (NW), SIM (RDY), FXS Port (FXS)

a. Applicable for SIMADO GFX11E only.

Mechanical Parameters

Dimensions (WxHxD)	:	13.35 x 19.8 x 4.46 cm (5.26" x 7.80" x 1.76")
Unit Weight of SIMADO GFX11	:	0.45 kg. Approx.
Unit Weight of SIMADO GFX11E	:	0.395 kg. Approx.
Shipping Weight of SIMADO GFX11	:	1.1 kg. Approx.
Shipping Weight of SIMADO GFX11E	:	0.980 kg. Approx.
Mounting	:	Wall Mounting or Table-Top

Operational Conditions

Temperature	:	0°C to +45°C (34°F to 113°F)
Humidity	:	5-95% RH, non-condensing

9. Applicable for SIMADO GFX11E only.

Storage Conditions

Temperature	:	-40°C to +85°C (-40°F to 185°F)
Humidity	:	0-95% RH, non-condensing

Emergency Number Dialing in Firmware Version earlier than V7R1

In **System Firmware Version V4** and earlier, the GSM module supports certain fixed Emergency Numbers. You can configure only the number supported by the module in the Emergency Number Table. If you configure a number that is not supported by the module in the table, the system will not recognize this number as an emergency number and will not dial out this number.

In **System Firmware Version V5R1 and later,** if your system has SIMCOM-2G engine (SIM340-B01 and later) or SIMCOM-3G engine (Version V1.18 and later) installed, you can configure any number in the Emergency Number Table. The system will store the same number on the GSM module and will dial out only the numbers configured in Emergency Number Table.

In **System Firmware Version V5R5**, when 2G GSM engine Sierra Wireless SL6087 is installed, SIMADO GFX11 will support the following Emergency Numbers with and without SIM present in the system.

Emergency Numbers **with SIM** present in the system:

- 112
- 911
- 000
- and other configurable numbers.

Emergency Numbers **without SIM** Present in the system:

- 112
- 911
- 000
- 08
- 110
- 999
- 118
- 119

How to configure

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

As mentioned earlier, the Emergency Number Table stores up to 5 numbers. Each number is stored against an Index, 1 to 5. Also, by default, certain emergency numbers are pre-configured in this table, which you cannot change.

The default Emergency Table for all countries except Italy is configured as follows:

Index	Emergency Number
1	Blank (Editable)
2	Blank (Editable)
3	112 (Un-editable)
4	911 (Un-editable)

Index	Emergency Number
5	000 (Un-editable)

The default Emergency Number Table for Italy is configured as shown as follows:

Index	Emergency Number
1	Blank (Editable)
2	Blank (Editable)
3	112 (Un-editable)
4	Blank (Un-editable)
5	Blank (Un-editable)

The Emergency Number you want to add to the table must be stored at Index that is editable. You can add numbers at Index 1 and 2 only.

System Commands

Description	System Commands
To configure the Country Code	**101-Country Code-#***
To clear the Country Code	**101-#***
To enable or disable the flag to remove the Country Code from the CLI received	**102-Flag-#***
To enable or disable the dial tone on the FXS Port	**103-No Tone when system not registered-#***
To select the country for tone type	***104-Code-#****
To restart the System	***105-SE Password-#****
To load Default Configuration	***106-Reverse SE Password-#****
To change SE Password	***107-New SE Password-#****
To change SA Password	***108-New SA Password-#****
To know the software version and revision	***109-#****
To configure the end of dialing digit	***110-Code-#****
To change the SIM PIN	***113-New SIM PIN-#****
To register the PUK number	***114-PUK Number-New SIM PIN-#****
To configure Security Code Number	***121-Security Code Number-#****
To clear Security Code Number	***121-#****
To configure Call Proceeding Tone	***122-Call Proceeding Tone-#****
To configure Emergency Number at an index	***151-Index-Emergency Number-#****
To clear the Emergency Number at an Index	***151-Index-#****
To Enable/Disable Mobile Port	***201-Code-#****
To Enable/Disable CLIR on Mobile Port	***202-Mode-#****
To Enable/Disable Incoming SMS notification on Mobile Port	***203-Flag-#****
To Enable/Disable the Location Information Indication	***205-Flag-#****
To configure the answer signal to be generated on FXS Port	***221-Answer Signal-#****
To configure FXS Port CLI Type	***222-CLI Type-#****
To configure the gain for CLI generation on the FXS Port	***223-Gain-#****
To configure First Digit Wait Timer	***225-First Digit Wait Timer***
To configure Inter Digit Wait Timer	***226-Inter Digit Wait Timer-#****
To configure DTMF Outdial Option on the Mobile Port	**240-DTMF Outdial Option-#***
To configure DTMF Out Dial ON Time for out dialing	***241*-DTMF Out Dial ON Time-#***
To configure the signal to be generated on disconnect signal on FXS Port	***248-Disconnect Signal-#****
To configure the open loop disconnect timer of FXS Port	***249-Open Loop Disconnect Timer-#****
To configure the Allowed Numbers List	***261-Location Index-Number-#****
To clear all numbers from an allowed list	***261-0-#****
To clear particular number from an allowed list	***261-Location Index-#****
To configure the Denied Numbers List	***262-Location Index-Number-#****
To clear all numbers from a denied list	***262-0-#****
To clear particular number from a denied list	***262-Location Index-#****
To default the Receive Gain	***271-0-#****
To configure the Receive Gain	***271-Receive Gain-#****

Description	System Commands
To default the Transmit Gain	***272-0-#****
To configure the Transmit Gain	***272-Transmit Gain-#****
To configure Pause Timer for Mobile Port	***275-Pause Timer-#****
To Enable/Disable the Hotline	***281-Flag-#****
To configure the Hotline Destination Number	***282-Destination Number-#****
To set the Hotline Delay Timer	***283-Timer-#****
To clear the Automatic Number Translation table	***290-0-#****
To configure dialed number string/substring	***291-Number Index-Dialed Number String/ Substring-#****
To clear dialed number string/substring at a given number index	***291-Number Index-#****
To configure the substitute string	***292-Number Index-Substitute Number String-#****
To clear the substitute string at a given number index	***292-Number Index-#****
To configure the Calling Card Services Number index for ANT table	***293-Number Index-Calling Card Services Number index-#****
To configure the Calling Card Password index for ANT table	***294-Number Index-Calling Card Password Index-#****
To configure the Calling Card Services Number table	***341-Number Index-Calling Card Services Number String-#****
To clear the particular Calling Card Services Number index	***341-Number Index-#****
To configure the Calling Card Password table	***342-Number Index-Calling Card Password Number String-#****
To clear the particular Calling Card Password index	***342-Number Index-#****
To configure the digit which will be replaced with '+' in the CLI	***301-Number String-#****
To clear the digit configured	***301-#****
To select the country for ring type of incoming call	***311-Code-#****
To configure Mobile Network Selection Mode	***331-Network Selection Mode-#****
To configure Network Operator Code with Priority	***332-Priority-Code-#****
To clear Network Operator Code	***332-Priority-#****
To select GSM Frequency Band	***333-Mobile Band Selection-#****
To select Preferred Network Mode	**334-Preferred Network Mode-*#****
To view MBN file selection mode	**335-*#****
To view currently selected MBN file	**336-*#****
To view the list of available MBN files one after another	**337-*#****
To select MBN file manually	**338-MBN File Selection Mode-XX-*#****
To enable/disable Call Waiting Notification[c]	**204-Flag-*#****
To configure the Emergency Contact Number[a] to send an alert SMS	**351-Number Index-Emergency Contact Number-*#****
To clear the Emergency Contact Number[b]	**351-Number Index-*#****
To view the duration of the call type	***610-Call Type-#****
To clear All Call Duration	***610-0-#****
To set Call Divert	***620-Option-Code-Destination Number-#****
To cancel Call Divert	***620-Option-Code-#****
To Lock/Unlock the system with the service provider	***701-Service Provider Password-Code-#****

Description	System Commands
To change service provider password	***702-Old Service Provider Password-New Service Provider Password-#****

a. Applicable only for SIMADO GFX11E.
b. Applicable only for SIMADO GFX11E.
c. Supported only in the Quectel M95-V2 (2G) or UC20 (3G) modules.

Warranty Statement

Matrix warrants that its products will be free from defects in material and workmanship, under normal use and service for a period of twelve (12) months from the date of installation.

Matrix warranties the replacement or repair of any product or component(s) found to be defective during the applicable period and return the same, or grant a reimbursement credit with respect to the product or component. Parts repaired or replaced will be under warranty throughout the remainder of the original warranty period only. In case of software program design defect(s) that prevents the program from performing the specified functionality, affecting service and beneficial use of the product, Matrix reserves the right to incorporate solutions in its new release of the software and make it available to the customer within a reasonable period of time. The above said with regard to the software design defect, constitutes the sole obligation of Matrix and its authorized installer with respect to the product.

Matrix does not, however, affirm or stand for that the functions or features contained in the system will satisfy its end-user's particular purpose and /or requirements or that the operation of the program will be uninterrupted or error free.

This warranty is voidable by Matrix:

1. If the product is used other than under normal use and is not properly serviced and maintained by qualified technicians.
2. If the product is not maintained under proper environmental conditions.
3. If the product is subjected to abuse, damage, misuse, neglect, fire, power flow, acts of God, accident.
4. If the product is installed or used in combination or in assembly with the products that are not supplied or authorized by Matrix or are of inferior quality or design than Matrix supplied products, which may cause reduction or degradation in functionality.
5. If the product is operated outside the product's specifications or used without designated protections.
6. If the completely filled warranty cards have not been received by Matrix within 15 days of the installation.

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 channel partners 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 user of the Product. All legal course of action subjected to Vadodara (Gujarat, India) jurisdiction only.

Disposal of Products/Components after End-Of-Life

Main components of Matrix products are given below:

- **Soldered Boards:** At the end-of-life of the product, the soldered boards must be disposed through e-waste recyclers. If there is any legal obligation for disposal, you must check with the local authorities to locate approved e-waste recyclers in your area. It is recommended not to dispose-off soldered boards along with other waste or municipal solid waste.

- **Batteries:** At the end-of-life of the product, batteries must be disposed through battery recyclers. If there is any legal obligation for disposal, you may check with local authorities to locate approved batteries recyclers in your area. It is recommended not to dispose off batteries along with other waste or municipal solid waste.

- **Metal Components:** At the end-of-life of the product, Metal Components like Aluminum or MS enclosures and copper cables may be retained for some other suitable use or it may be given away as scrap to metal industries.

- **Plastic Components:** At the end-of-life of the product, plastic components must be disposed through plastic recyclers. If there is any legal obligation for disposal, you may check with local authorities to locate approved plastic recyclers in your area.

After end-of-life of the Matrix products, if you are unable to dispose-off the products or unable to locate e-waste recyclers, you may return the products to Matrix Return Material Authorization (RMA) department.

Make sure these are returned with:
- proper documentation and RMA number
- proper packing
- pre-payment of the freight and logistic costs.

Such products will be disposed-off by Matrix.

"SAVE ENVIRONMENT SAVE EARTH"

Regulatory Information

MATRIX
TELECOM | SECURITY

Declaration of Conformity

Manufacturer's Name:	Matrix Comsec Pvt. Ltd.
Manufacturer's Address :	15 &19-GIDC, Waghodia, Dist: Vadodara 391760 Gujarat, India
Declares that the product/s Product:	GSM Fixed Cellular Terminal
Model Type:	SIMADO GFX 11, SIMADO GFX 11E(Variant)
Trade Name:	MATRIX
Product Options:	This declaration covers all options of the above product, conforms to the following product specifications:

EMI/EMC Standard:

EN 55022 : 2010
IEC 61000-3-2 : 2014 (Edition 3.0)
IEC 61000-3-3 : 2013 (Edition 4.0)
EN 55024 : 2010
IEC 61000-4-2 : 2008 (Edition 2.0)
IEC 61000-4-3 : 2010 (Edition 3.0)
IEC 61000-4-4 : 2012 (Edition 3.0)
IEC 61000-4-5 : 2014 (Edition 3.0)
IEC 61000-4-6 : 2013 (Edition 4.0)
IEC 61000-4-8 : 2009 (Edition 2.0)
IEC 61000-4-11: 2004 (Edition 2.0)

SAFETY Standard:

IEC 60950-1 : 2005(2nd Edition) + A1:2009
Supplementary Information's:
The Product herewith complies with the following directives :

EMC	2014/30/EU
Low Voltage Directive	2014/35/EU
RoHS Recast (RoHS 2)	2011/65/EU (as per standard EN 50581:2012)

Mr. Ganesh Jivani
Director
Date: 28.09.2017

Matrix Comsec Pvt. Ltd. Vadodara

CE

MATRIX COMSEC PVT. LTD.
Registered/Head Office: 394-GIDC, Makarpura, Vadodara-390 010, India. Ph: +91 265 2630555, Email: Inquiry@MatrixComSec.com • www.MatrixComSec.com
Manufacturing Unit: 15 & 19-GIDC, Waghodia, Dist. Vadodara-391 760, India. Ph: +91 2668 263172/73 • CIN: U72200GJ1998PTC034047

Module Supported : Quectel UC20-G		
Standards and directive	**Applied / Complied Harmonized Standards**	
	RE Directive 2014/53 EU, Article 3(1)(a) ● Safety	EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
	RE Directive 2014/53 EU, Article 3(1)(a) ● Health	EN 62311:2008
	RE Directive 2014/35 EU, Article 3(1)(b) ● EMC	ETSI EN 301 489-1 V2.1.1, ETSI EN 301-408-52 V1.1.0 ETSI EN 301 489-19 V2.1.0
	RE Directive 2014/53 EU, Article 3(2) ● Radio	EN 301 908-1 V11.1.1, EN 301 908-2 V11.1.1 EN 301 511 V12.5.1*, Draft EN 303 412 V1.1.0*
	* Note: This is non-harmonized radio standard accepted by the RED (Radio Equipment Directive)	
FCC Identifier	XMR201510UC20	
Moducations Supported	GSM: GMSK, 8PSK, WCDMA: BPSK, QPSK, 16QAM GPS: BPSK GLONASS: OFDM	

Module Supported: Quectel M95	
Standards and directive	2014/53/EU Radio Equipment Directive ETSI EN 301 489-1 V1.9.2 (2011-09), ETSI EN 301 489-7 V1.3.1 (2005-11) ETSI EN 301 511 V9.0.2 (2003-03), 3GPP TS 51.010-1 V9.1.0 (2010-03) EN 62311:2008 EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
FCC Identifier	XMR201512M95
Modulations Supported	GMSK(EGSM), GMSK(DCS)

Module Supported: Quectel EC25-V	
Technology	**LTE / VoLTE** LTE Version : 3GPP E-UTRA Release 10
Frequency Bands	**FDD LTE**: B4/B13 **Uplink Frequency band:** 1710 MHz – 1755 MHz 777 MHz – 787 MHz **Downlink Frequency band:** 2110 MHz – 2155 MHz 746 MHz – 756 MHz
FCC Identifier	XMR201607EC25V
Modulation Supported	QPSK, 16QAM and 64QAM

Module Supported: Quectel EC25-E , EC25-E Minipcie		
Standards and Directives	SAFETY	EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
	EMC	DRAFT EN301 489-1 V2.2.0
		DRAFT EN301 489-19 V2.1.0
		DRAFT EN301 489-52 V1.1.0
		EN 55032:2015
		EN 55024:2010+A1:2015
	RADIO SPECTRUM	EN301 511 V1235.1
		EN301 908-1 V11.1.1
		EN301 908-1 V11.1.1
		EN301 908-13 V11.1.1
		DRAFT EN303 413 V1.1.0
	HEALTH	EN 62311:2008
Technology	**LTE / VoLTE** LTE Version : 3GPP E-UTRA Release 10	
Frequency Bands	**FDD LTE:** B1/B3/B5/B7/B8/B20 **Uplink Frequency band:** 1920 MHz – 1980 MHz 1710 MHz – 1785 MHz 824 MHz – 849 MHz 2500 MHz – 2570 MHz 880 MHz – 915 MHz 832 MHz – 862 MHz **Downlink Frequency band:** 2110 MHz – 2170 MHz 1805 MHz – 1880 MHz 869 MHz – 894 MHz 2620 MHz – 2690 MHz 925 MHz – 960 MHz 791 MHz – 821 MHz **TDD LTE: B38/B40/B41** 2570 MHz - 2620 MHz 2300 MHz - 2400 MHz 2496 MHz - 2690 MHz **WCDMA: B1/B5/B8** 2,100 MHz 850 MHz (for U.S.) 900 MHz **GSM:** 900/1800 MHz	
FCC Identifier	NA	
Modulation Supported	GMSK , 8PSK , QPSK , 16QAM, 64QAM(DL)	

Module Supported: Quectel EC25-AU		
Standards and Directives	**SAFETY**	AS/NZS 60950.1 2011
	EMC	AS/CA S042.1:2015 , AS/CA S042.4:2015
		AS/NZS CISPR 32-2015
		AS& NZS 2772.2-2016/ ARPANSA Standard RPS3-2002
	ANTEL	3GPP TS 36.521 V9.5.0
		3GPP TS 36.523-1
		3GPP TS 51.010-1 V6.5.0
		ETSI TS 102 514
		ETSI TS 134.121-1 V9.1.0
Technology	**LTE / VoLTE** LTE Version : 3GPP E-UTRA Release 10	
Frequency Bands	**FDD LTE**: B1/B3/B5/B7/B28 **Uplink Frequency band:** 1920 MHz – 1980 MHz 1710 MHz – 1785 MHz 824 MHz – 849 MHz 2500 MHz – 2570 MHz 703 MHz – 748 MHz **Downlink Frequency band:** 2110 MHz – 2170 MHz 1805 MHz – 1880 MHz 869 MHz – 894MHz 2620 MHz – 2690 MHz 758 MHz – 803 MHz **WCDMA:** B1/B5 2,100 MHz 850 MHz (for U.S.)	
FCC Identifier	XMR201805EC25AU	
Modulation Supported	QPSK, 16QAM and 64QAM	

Module Supported: Quectel EC25-A	
Technology	**LTE / VoLTE** LTE Version : 3GPP E-UTRA Release 10
Frequency Bands	**FDD LTE:** B2/B4/B12 **Uplink Frequency band:** 1850 MHz – 1910 MHz 1710 MHz – 1755 MHz 699 MHz – 716 MHz **Downlink Frequency band:** 1930 MHz – 1990 MHz 2110 MHz – 2155 MHz 729 MHz – 746 MHz **WCDMA: B2/B4/B5** 1,900 MHz 2,100 / 1,700 MHz 850 MHz (for U.S.)
FCC Identifier	XMR201605EC25A
Modulation Supported	QPSK, 16QAM and 64QAM

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MATRIX COMSEC

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