

# Warm Welcome



## Pre-eminent Features

- Reliable, Compact and Sturdy design
- ETSI GSM phase 2/2+ compliance
- Superior call routing techniques
- Quad-band 2G and Tri-band 3G network support
- Compatible with any PBX



# MATRIX SIMADO GFX11

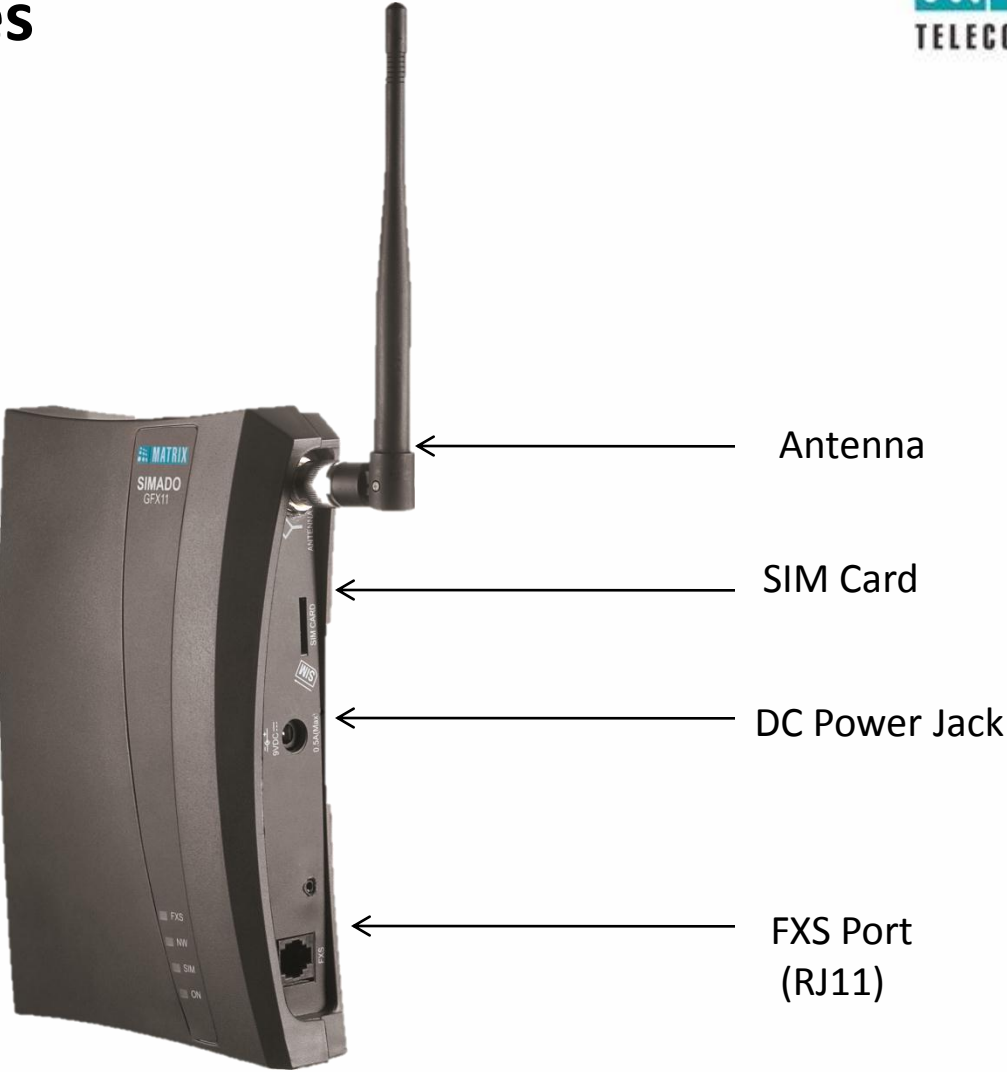
## FCT for Voice Applications



# INTRODUCTION

- Fixed cellular terminal for voice applications
- Incoming calls on GSM are routed to the FXS port
- Outgoing calls from FXS port are routed through GSM network
- Can be used as a stand-alone system
- Can be connected with any existing PBX
- Adds GSM mobility and cost benefit to the existing infrastructure

# System Interfaces

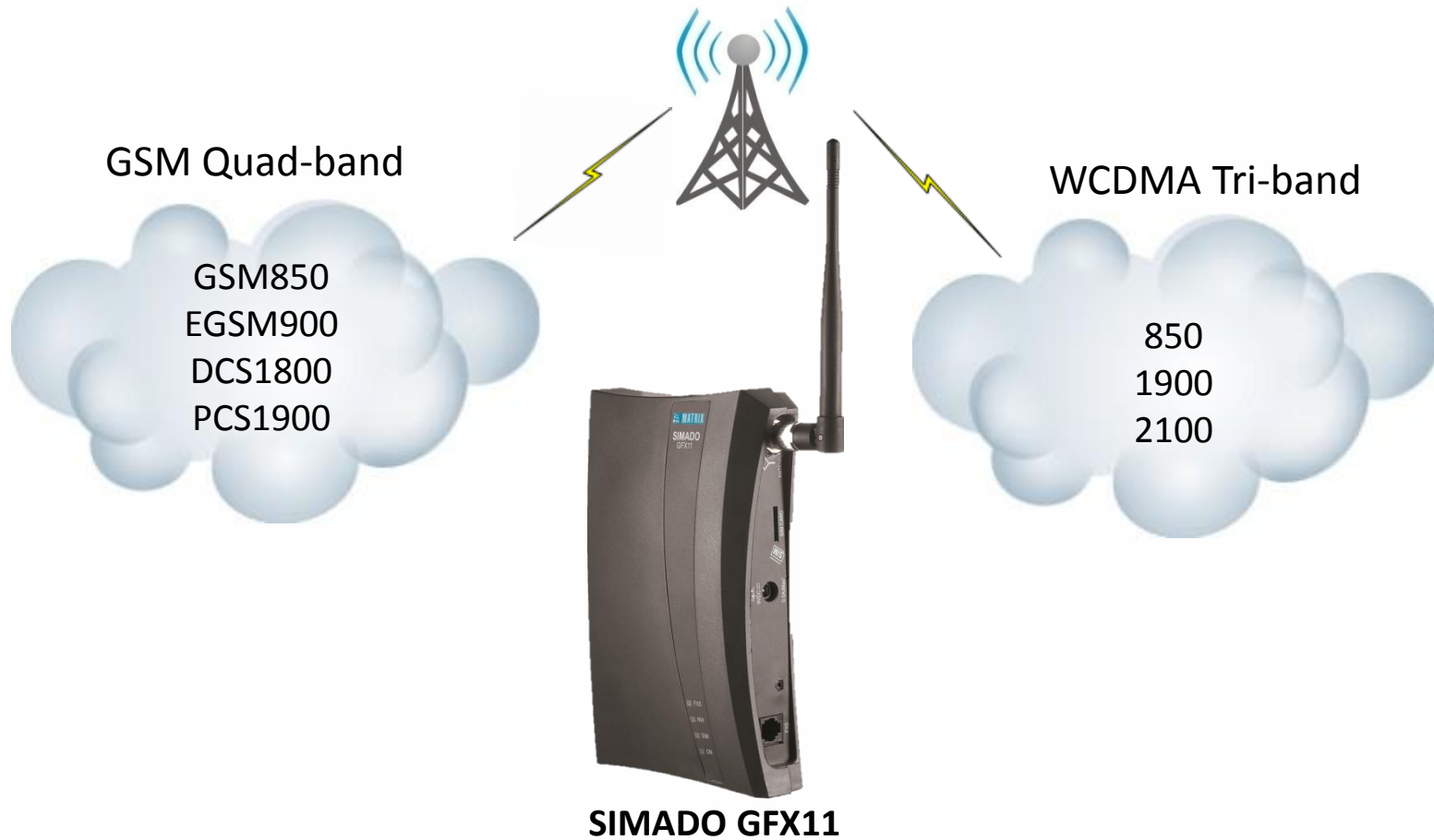


**SIMADO GFY11**

# System Models

|                        |                                                                                    |
|------------------------|------------------------------------------------------------------------------------|
| <b>SIMADO GFX11</b>    | GSM FCT for Voice Applications With 1 GSM Port and 1 FXS Port                      |
| <b>SIMADO GFX11 3G</b> | GSM FCT for Voice Applications With 1 3G Port , 1 FXS                              |
| <b>SIMADO GFX11E</b>   | GSM FCT for Emergency Applications with 1 GSM Port, 1 FXS Port and battery back-up |

# Network Support



# 3G Network Support

- Matrix SIMADO GFX11 3G supports:
  - ✓ 2G Network: Quad-band support for GSM network
  - ✓ 3G Network: Tri-band support for WCDMA network
- Call established over 3G network offer:
  - ✓ Noise-free, stanch voice quality
  - ✓ Enhanced security
- Fallback compatibility
  - ✓ Flexibility to switch to alternate network (2G)
  - ✓ Assures round-the-clock network connectivity
  - ✓ Users can traverse between regions uninterruptedly

|                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>2001<br/>Japan Used WCDMA as a<br/>Commercial Service,<br/>Bypassing Earlier GSM<br/>Generations<br/><b>Source: Mobile<br/>Communications Systems and<br/>Security/Man Young Rhee</b></p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



# LED Indications



- FXS (Phone On/Off Hook)
- NW (Network Availability)
- SIM (SIM Card)
- Power On

SIMADO 6FX11

# System Features

- Allowed and Denied List
- Automatic Number Translation
- Call Divert
- Call Duration Display
- Call Progress Tones
- Calling Line Identification and Presentation (CLIP)
- Calling Line Identification Restriction (CLIR)

# System Features

- Emergency Number Dialing
- Hotline
- International Mobile Equipment Identity (IMEI)
- Location Information Indication
- Multi-Stage Dialing
- Network Selection
- Reinstall Default Setting
- Security Code

# System Features

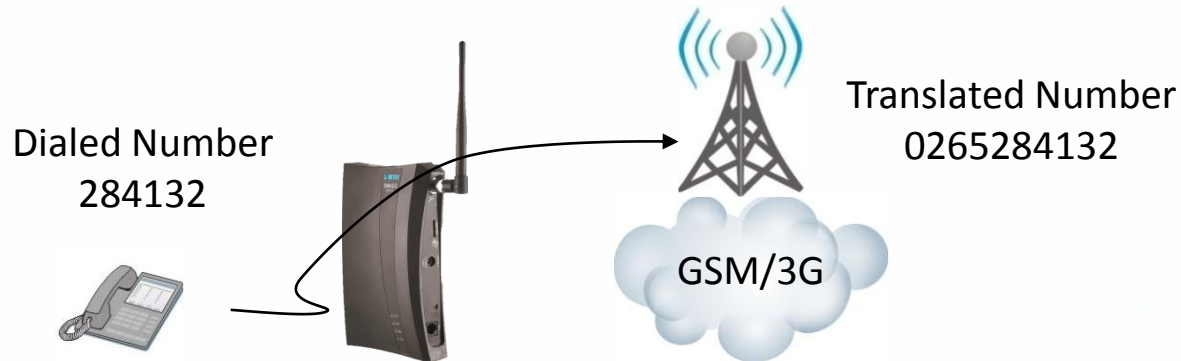
- Service Provider Lock
- Short Message Services (Receive and Delete)
- Signal Strength Indication
- SIM PIN
- Software Version and Revision Display
- System Programming
- System Restart
- System Security

# Allowed and Denied List

- Program Allowed and Denied Number Lists
- Allow/Restrict Dialing of the Programmed Numbers
- 5 Numbers, Each of 16 Digits Can be Programmed in Allowed and Denied Number List Individually
- Based on “Best Match Found” Logic, Calls are Allowed/Denied
- Programmed Emergency Numbers are Excluded From Such Verification
- Useful to Control Telephone Call Cost
- Trim the Use of System’s National/International Dialing Facility as per Requirement

# Automatic Number Translation

- Translates dialed number string into an understandable format by the GSM/3G network, Example:
  - ✓ While placing calls to landline numbers
  - ✓ User may dial only the number
  - ✓ GFX11 prefixes the area code
  - ✓ The number string will be understood by the GSM network
- No need to change dialing habits
- Aids in speed dialing and multi-stage dialing set-ups



# Call Divert

- Diverts incoming calls on mobile port to a configured alternate destination:
  - ✓ Unconditionally
  - ✓ When FXS port is busy
  - ✓ When FXS Port does not answer
  - ✓ When GFX11 is switched-off or out of coverage area
- This feature requires activation from SIM service provider

# Call Duration Display

- Duration of calls made or received on FXS port can be viewed on LCD enabled phones
- Display options:
  - ✓ Duration of last dialed or received call
  - ✓ Total duration of calls made



# Call Progress Tones

- Different Types of Tones: Dial Tone, Ring Back Tone, Busy Tone, Error Tone
- Different call progress tones and ring cadence for different regions

# Calling Line Identification and Presentation

- Detection and presentation of calling party number on FXS port
- Signaling Types:
  - ✓ DTMF
  - ✓ ITU-T V.23 FSK
  - ✓ Bellcore FSK

# Calling Line Identification Restriction

- Restrict displaying ones identity while placing calls
- This feature is service provider specific

# Emergency Number Dialing

- Configure 4 emergency numbers (Ex. Ambulance, Police, Fire Brigade and Others)
  - ✓ Place call even if SIM is not present
- Configured emergency numbers are excluded from such verification
  - ✓ In case, no emergency number is programmed
  - ✓ Emergency number stored in SIM will be dialed
  - ✓ Else default emergency number stored in the firmware will be dialed

## Hotline (Fixed Dialing)

- Just by lifting the handset, the frequently dialed number can be dialed-out
- Configure the fixed numbers after which delay happens
- Any other number can be dialed, before configured delay elapses
- Beneficial in point-to-point connectivity set-ups

# International Mobile Equipment Identity

- 15/17 digit code used to identify a GSM module on GSM network
- When SIMADO GFX11 is switched-on
- IMEI number is verified with service providers list of authorized users
- In case of lost/stolen equipment
  - ✓ Get IMEI number blocked
  - ✓ Prevent misuse of information stored in the gateway

# Location Information Indication

- Displays the information of the location where the device has been placed
- Information can be viewed on LCD enabled phones
- This feature requires activation from SIM service provider
- Best fits in
  - ✓ Logistics and Transportation vehicles

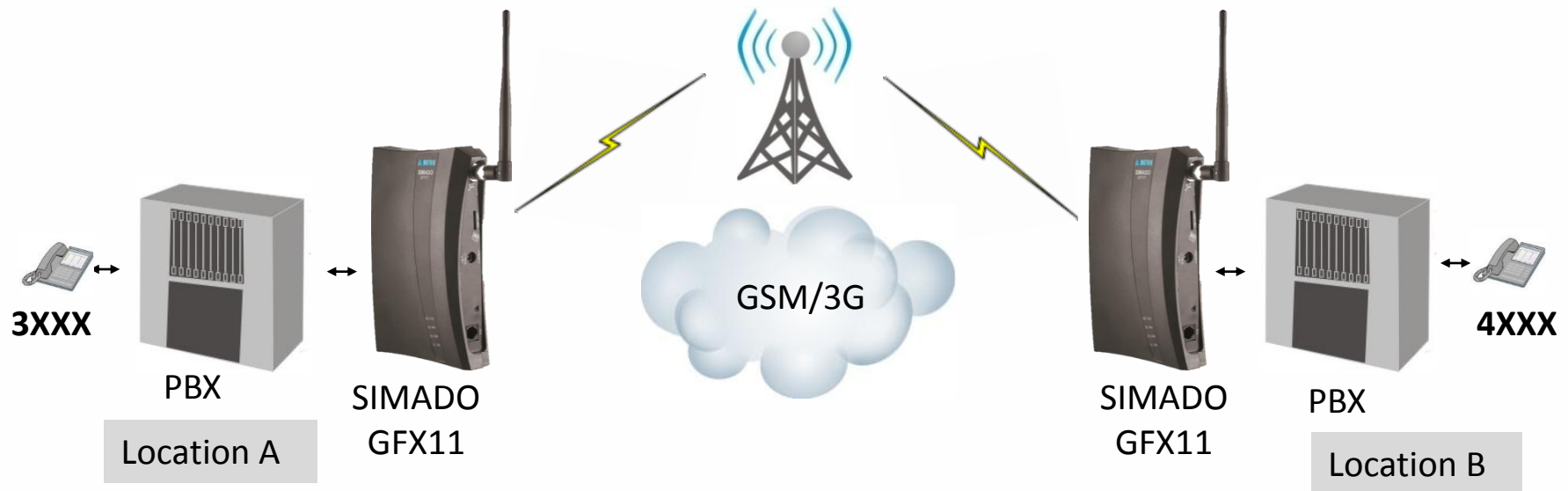
# Multi-Stage Dialing

- At times, series of numbers have to be dialed before dialing the actual number
- Example: while using a virtual calling cards (ITC card)
  - ✓ User is required to dial long number strings
    - **Toll-free Number Provided by the Service Provider + ITC Card Number + Destination Number to be Called**
  - ✓ Eliminates dialing long number strings
  - ✓ Configure ANT table, calling card password table and calling card service provider table
  - ✓ User can now dial only the destination number
- Used in Organizations with multiple branch offices
- Connect various locations via GSM network





# Multi-Stage Dialing: Application Scenario

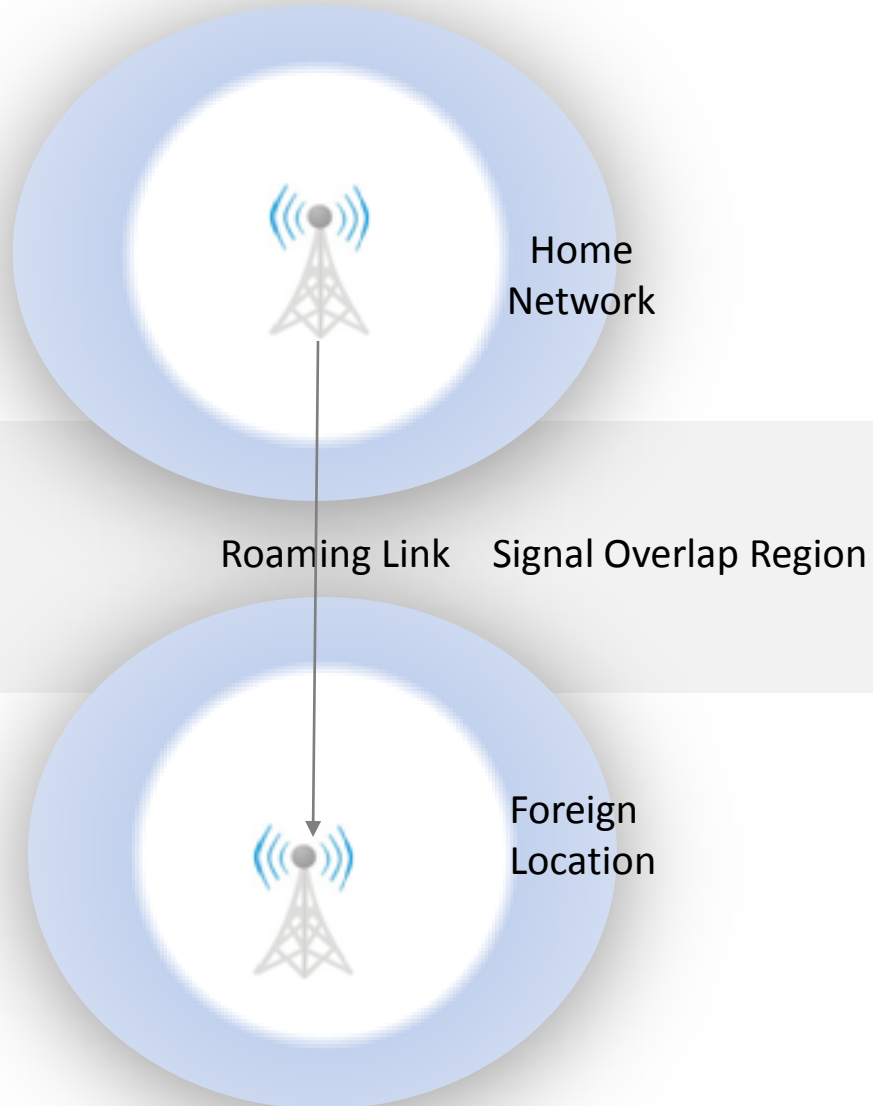


- Connect SIMADO GFX11 in front of the pre-installed PBX system
- Avail CUG (closed user group) services from the service provider for free dialing between the offices
- Calls can be easily established between the two locations
- System supports differentiated tones to indicate various dialing stages

# Network Selection

- Once the Power is ON, system searches and registers itself with the available network
  - ✓ Network is selected as per network signal strength
  - ✓ Ensures round-the-clock connectivity by registering with an available network
- System can be configured for manual network selection mode
  - ✓ Avoids unnecessary charges due to registration with unwanted networks
  - ✓ Network is selected as per assigned priority in a priority table
- Single GSM port can be programmed for maximum of 4 networks
- Multiple attempts are made to register with an available network

# Network Selection



- Network signals may overlap in the expanse of a national border
- Set the system for manual network selection mode
- Avoid false roaming charges, due to registration with a foreign network

# Reinstate Default Settings

- SIMADO GFX11 is supplied with default settings for various parameters
- Any operating mistake may necessitate defaulting the system
- Default the system by entering se mode from the telephone
- Minimizes configuring labor

# Security Code



- Interface GFX11 with the Payphone
- Route all calls through GSM/3G network
- Bypasses toll charges borne while placing inter-network calls
- Program security code in SIMADO GFX11 to restrict its use

# Service Provider Lock

- Locks SIMADO GFX11 to work with specific service provider
- The password is different from SE and SA
- An immense utility feature for the service providers
- Locks or unlocks the system, even when a SIM card is not inserted

# Short Messaging Service

- Notifies receipt of a new SMS
- Notification is in the form of signal or alert on phone
- Received messages are stored at various locations (indexes) in the SIM/RUIM
- Read or delete received messages with phone supporting FSK CLI

# Signal Strength

- Gauge available signal strength
- 15 step signal strength indication on telephone instrument's LCD screen
- Telephone instrument should be FSK compatible



# SIM PIN

- SIM is a smart card with subscriber specific data stored in it
- SIM PIN is a security feature used by the GSM network
- A PIN (Personal Identification Number) can be enabled in the SIM
- At each Power-on, device is authenticated for PIN
- This PIN should match with the stored SIM PIN
- System will attempt registration to a GSM network after correct SIM PIN is issued
- Wrong PIN attempt thrice would block the SIM
- A blocked SIM can be opened by entering the SIM PUK provided by the GSM operator
- Prevents misuse of SIM card

# System Programming

- Program the device with a phone
- Two differentiated programming levels:
  - ✓ System Engineer (SE) Level:
    - Grants full system access
    - Password authentication is required to enter SE programming mode
  - ✓ System Administrator (SA) Level:
    - Authorized to program only administrative system features
    - Password authentication is required to enter SA programming mode

# System Restart

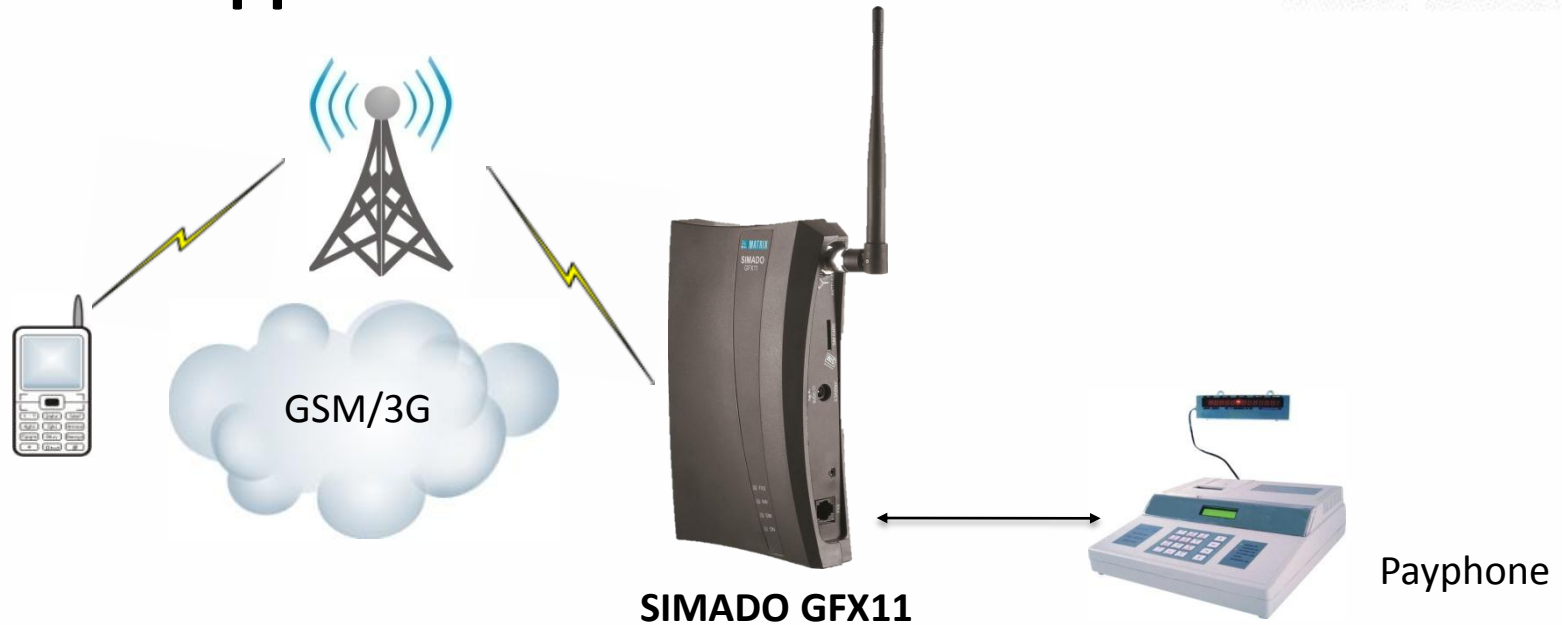
- When physical reach to system is difficult
- Restart the system from telephone instrument connected to phone

# System Security

- SIMADO GFX11 is secured with passwords at two levels:
  - 1) System Engineer (SE) Level
  - 2) System Administrator (SA) Level
- System Engineer can alter SA password if required
- Technique to default SE password in case of forgotten password
- Prevents unauthorized alterations and misuse of system features and facilities

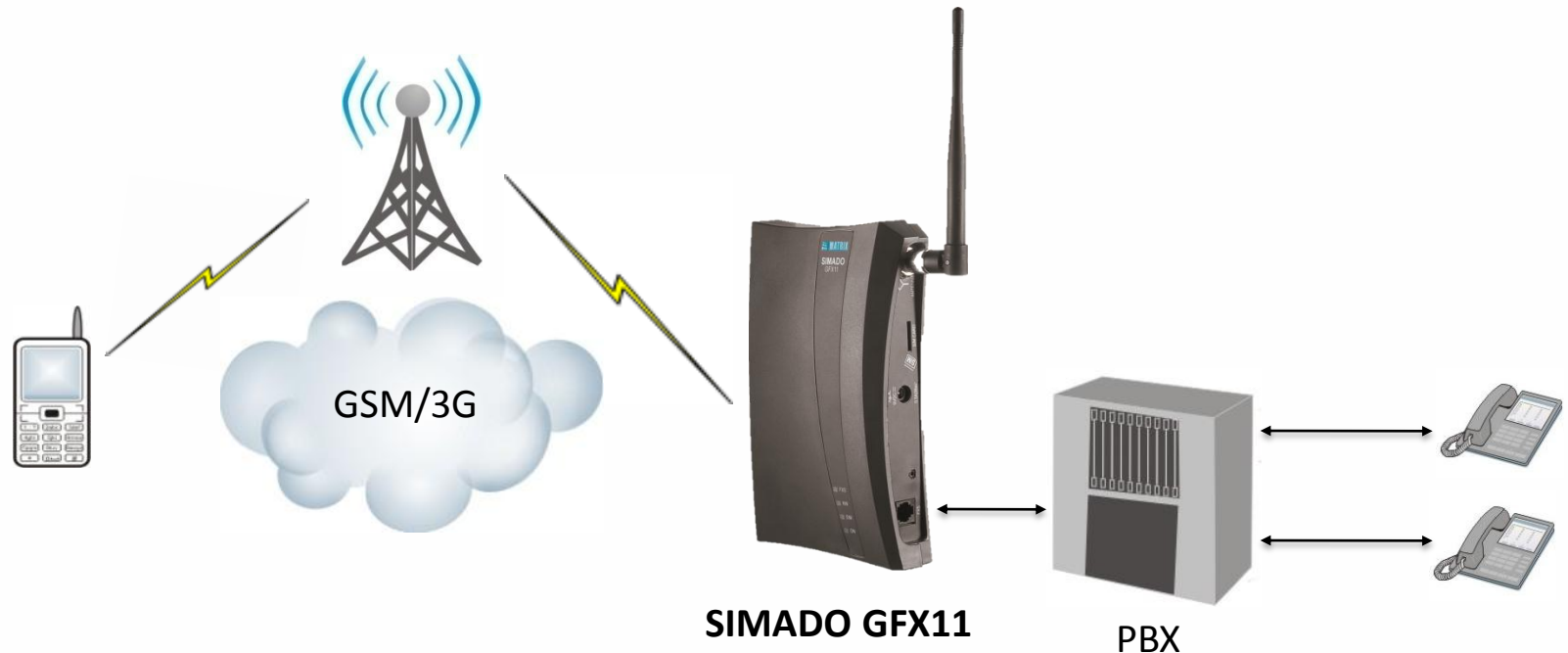
# Applications

# Payphone Application



- Interface GFX11 with the Payphone
- Route all calls through GSM/3G network
- Supports polarity reversal, ensuring accurate billing
- Security Code: Limits system usage to a Payphone
- Works with most Payphones, no need of changing existing Payphone

# GSM FCT with existing PBX Application



- PBX Can be Interfaced With System's FXS Ports
- PBX Users Can Make/Receive Calls to/from Mobile Terminals
- Works With All PBX, No Need of Changing Existing PBX

# Emergency Application



Elevator

## **SIMADO GFX11E**

- Establishes communication link with the help center during emergency situations like elevator break-down or power cuts
- Used in various applications like elevators, ATM centers, parkades, hospitals, shopping malls and senior citizen's homes



# Target Customer

- Call Centers
- Corporate Offices and Factories
- Emergency Applications
- GSM Service Providers
- Hotels
- Organizations With Field Staff
- Point-to-Point Communication Points
- Public Call Offices (Payphones)
- Remote Project Sites
- Residences

# Specifications

|                                    |                                                                                                                                        |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Power Supply</b>                | External Adaptor 12V DC/1.25A (Universal Input Range 90-265VAC, 47- 65Hz)                                                              |
| <b>Power Consumption (Typical)</b> | 5 Watt                                                                                                                                 |
| <b>RF Sensitivity</b>              | Better than -102dBm at<br>GSM850/EGSM900/DCS1800/PCS1900<br>Better than -106dBm at WCDMA 850<br>Better than -108dBm at WCDMA 1900/2100 |
| <b>Dimensions (W X H X D)</b>      | 5.26"X7.80"X1.76"                                                                                                                      |
| <b>Unit Weight</b>                 | 450 Grams                                                                                                                              |
| <b>Mounting Options</b>            | Wall Mount and Table Top                                                                                                               |
| <b>Antenna Connector</b>           | TNC (Male)                                                                                                                             |

Thank You

- Type of Presentation: SIMADO GFX11 Features and Applications
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