



## **SIMADO GFXD1111S** GSM/3G to FXS and FXO Router

### The Value Maximizer

Different telecom networks offer advantages in different aspects. Today's businesses expect the specific benefits from each of these networks. The Plain Old Telephone System (POTS) and GSM are two such omni-present networks. Most establishments have access to both these networks and need to bridge and interconnect them. This allows them to dynamically select one of the networks on per-call basis for obvious benefits of cost and Quality of Service (QoS).

The SIMADO GFXD1111S is one such gateway equipment offering interfaces for GSM, FXS and FXO ports. It can be used with any brand of existing PBX or even in a stand-alone mode. SIMADO GFXD1111S supports flexible and intelligent Least Cost Routing (LCR) options providing significant cost savings and round-the-clock connectivity.

Let Matrix SIMADO GFXD1111S add that competitive edge to your business by reducing telephone costs!

Matrix SIMADO GFXD1111S is a gateway to interface GSM and Plain Old Telephone System (POTS) networks. On the GSM side, it supports quad-band operation allowing it to work with any GSM network. On the POTS side both, FXS and FXO interfaces are supported. Incoming calls on GSM port can be routed on FXS or FXO port. Outgoing calls from the FXS are routed either on the GSM port or the FXO port depending on the least cost routing logic.

PBX users can avail of the low tariff of GSM networks by connecting the SIMADO GFXD1111S with the PBX without changing their existing infrastructure. The users continue to make and receive calls without worrying on which network their calls are routed. The SIMADO GFXD1111S routes the calls either on POTS or GSM network depending on the destination numbers dialed by the users. The system can also be used without a PBX in a stand-alone mode.

Intelligent and flexible routing is the forte of the SIMADO GFXD1111S. Various Least Cost Routing (LCR) schemes are offered. Numbers received from calling network are converted by Automatic Number Translation (ANT) to match with the numbering plan of the destination network. Users can also avail of value-added features like closed user group and conference offered by the service providers.

The SIMADO GFXD1111S obviates the need for providing separate mobile phones to members of the organisation, or for subscribing to multiple mobile connections. Thus, bringing about significant reduction in the capital and recurring costs.

The SIMADO GFXD1111S (only) supports sending and receiving fax from a PC. SMS, Internet browsing, E-mail access and file transfer are also supported.

Matrix SIMADO GFXD1111S is very easy to install and operate. It can be mounted on a wall or a table surface.

Get connected through SIMADO GFXD1111S and enjoy the best of both worlds!

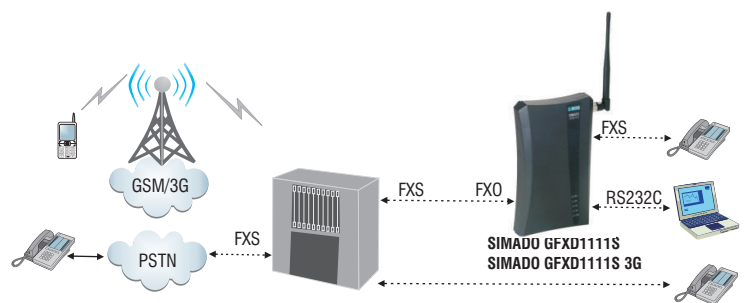
## APPLICATIONS OF SIMADO GFXD1111S



Stand-alone Application



(FXS) with PBX (FXO) Application



(FXO) with PBX (FXS) Application



SIMADO GFXD1111S 3G



SIMADO GFXD1111S

## KEY FEATURES

### 3G Network Support

Matrix SIMADO GFXD1111S 3G offers accessibility of 3G networks for Voice communication. It supports Quad-band for 2G Network and Tri-band for WCDMA Network. It supports fallback compatibility and hence offers flexibility to access any available network. Users are always assured for connectivity using the alternate network in case the preferred (3G) network signal is weak or unavailable. With 3G power, an organization experiences Noise-free, Stanch and Crystal Clear Voice Quality, Enhanced Security and Utmost Coverage.

### 12 KHz / 16 KHz Metering (PCO Application)

The SIMADO GFXD1111S provides both 12KHz and 16KHz metering for PCO applications. It generates 12KHz / 16KHz metering pulses for the PCO monitor connected to its FXS port to print the bill as per the call rate.

### Abbreviated Dialing

Up to 32 frequently used numbers can be stored in the internal memory. These numbers can be dialed just by using abbreviated codes.

### Allowed and Denied Lists

Allowed and Denied Lists are used to restrict the dialing of long-distance and international numbers. A number is blocked if its prefix matches any entry in the Denied List. On the other hand, a number is allowed to go through if it matches any entry of the Allowed List. This provides flexibility of allowing only specific numbers while blocking all others.

### Automatic Number Translation

The SIMADO GFXD1111S modifies the incoming number or part thereof so that it matches with the numbering plan of the destination network. For example, GSM networks require dialing of complete numbers including the area codes. If a caller has dialed only the local number, the Simado GFX1111S adds area code as appropriate prefix.

### FXO-GSM Bridge

In case an existing PBX does not have a spare trunk (CO) port, the Matrix SIMADO GFXD1111S can be connected to an extension of the PBX. The users can make GSM calls through the extension port on which the FXO port of the SIMADO GFXD1111S is connected. Even the incoming calls can be made to land on the desired extensions of the PBX. External callers can reach the desired extensions just by dialing the extension numbers once the call is answered by the SIMADO GFXD1111S.

### Call Divert

This feature gives the user flexibility to user to divert incoming calls of a GSM port to another GSM or FXO port in different conditions like Unconditionally, When busy, No-reply and No-coverage.

### Call Progress Tones and Rings

The SIMADO GFXD1111S provides Call Progress Tones like Dial Tone, Ring Back Tone and Busy Tone etc. Country-specific tones can be selected to match those of the country where it is installed. Similarly, ring cadences can also be selected.

### Calling Party Control (CPC)

The SIMADO GFXD1111S can send Calling Party Control call release signal on its FXS ports. This signal is then sensed by the PBX or other equipment to release the ports when a call is terminated by the party on the GSM side of the network. This prevents the blockage of ports. The system also detects CPC signals on the FXO Port.

### Caller Line Identification Presentation (CLIP)

The SIMADO GFXD1111S supports CLIP on FXS, FXO and GSM ports. A port can be programmed to receive or send CLIP using any of the standards like DTMF, FSK ITU-T and FSK Bellcore.

### Caller Line Identification Restriction (CLIR)

The SIMADO GFXD1111S can be programmed to deactivate CLIP being sent on the GSM port if the network supports such flexibility.

### Compact and Sturdy

The SIMADO GFXD1111S is an integrated gateway. It can be installed on a wall or any table surface.

### Speech Gain

The SIMADO GFXD1111S allows users to select speech levels for receive and transmit gains to improve speech quality.

### Emergency Number Dialing

The SIMADO GFXD1111S allows user to dial emergency numbers for services like Police, Fire Brigade or Ambulance without SIM or without network registering. A maximum of 4 emergency numbers can be programmed. These numbers can also be dialed on the FXO port.

### General Packet Radio Services (GPRS Class 10)\*

The GSM engine used in SIMADO GFXD1111S is GPRS Class 10 enabled. The user can browse the Internet and check his emails. When it is connected to a proxy, multiple users can share the bandwidth for the Internet and emails. (This feature is supported in SIMADO GFXD1111S)

### International Mobile Equipment Identity (IMEI)

International Mobile Equipment Identity (IMEI) number provided on SIMADO GFXD1111S GSM engine is a unique 15-digit code to identify an individual GSM port. This number can be used to associate and tie the equipment with a particular GSM network.

### Least Cost Routing

The SIMADO GFXD1111S can route a call either on GSM or on the FXO (PSTN) network depending on which option is cost-effective. Time, destination number and combination of both, are the three options supported by the Least Cost Routing (LCR). It is possible to route all the mobile number on the GSM and all the land line numbers on the FXO port. Users can dial the numbers without worrying about the cost. The SIMADO GFXD1111S automatically chooses the option that costs the least for a given number.

### LED Indications

A dual-color LED is provided for FXS port, FXO port and SIM status. They indicate current status of calls on these ports. Power and GSM network status are also shown on the respective LEDs.

### Lifeline

The SIMADO GFXD1111S provides seamless communication in the event of non-availability of GSM network. For example, in the absence of the GSM network, all calls are dialed out from the FXO (PSTN) port, automatically. This feature sets user free from selecting FXO ports manually. In true sense it provides a "Lifeline" so critical to your business environment.

### Network Selection

The SIMADO GFXD1111S provides the user flexibility to select the network manually or automatically. The GSM port can be programmed to work only with selected networks, preventing registering with other costly networks. A Maximum of 4 networks can be programmed for the GSM port.

### Short Message Services (SMS)\*

SMS received can be read on the computer or on the display of the SLT. Messages can be composed and sent through the computer only. Indication regarding new messages is available on the SLT or on the computer.

### Signal Strength Indication

15 steps indication of the network signal strength will be displayed on the LCD of SLT. The telephone instrument must be FSK compatible and should have a 3-line LCD.

### SIM PIN

The SIMADO GFXD1111S allows the user to program the 4-digit PIN number (Personal Identification Number) which prevents the SIM against unauthorized use. The User has to enter the PIN for making any operations. The User can change the SIM PIN as and when required. The SIM gets blocked if the PIN is entered wrongly thrice in a row.

### SIM PUK

PUK (Personal Unlock Key) number provided by service provider can be entered in SIMADO GFXD1111S. It is an 8-digit number which is assigned to the SIM card. The SIM PUK is required to unlock the SIM which gets blocked on entering SIM PIN wrongly thrice in a row.

## FEATURES

### Software Features

- 12KHz/16 KHz Metering (PCO Application)
- Abbreviated Dialing
- Allowed and Denied Lists
- Automatic Number Translation
- Call Divert
- Call Duration Display
- Call Hold
- Call Maturity-Reversal
- Call Options
- Call Progress Tones
- Call Swap
- Call Waiting
- Calling Line Identification and Presentation (CLIP)
- Calling Line Identity Restriction (CLIR)
- Conference
- Configuration Reports
- Data Services
- Distinctive Rings
- Emergency Number Dialing
- Enhanced Mode
- Fax Transmission (PC Fax)\*
- General Packet Radio Services (GPRS Class10)\*
- Hotline
- IMEI Number
- Lifeline
- Least Cost Routing (Time, Number and Combination)
- Location Information Indication
- Network Selection
- Programming the system (FXS, RS232C, GSM Port)
- Short Message Services (SMS)\*
- Signal Strength Indication
- SIM Lock
- SIP PIN
- SIM PUK
- System Password

### Hardware Features

- 3G Network Support
- Compact and Sturdy
- LED Indications
- Quad-band Operation
- Real Time Clock (RTC)
- RS232C (COMM) Port
- SLIC Based Design
- SMT Technology

SIMADO GFXD1111S



## TECHNICAL SPECIFICATIONS

|                                    |  |
|------------------------------------|--|
| GSM Port                           |  |
| GSM Band                           | : Quad Band: GSM850, EGSM900, DCS1800, PCS1900<br>Tri Band: WCDMA 850/1900/2100 MHz  |
| Compliant                          | : ETSI GSM Phase2/2+   |
| SIM Card                           | : One SIM  |
| SIM Interface                      | : 1.8V, 3V   |
| Transmission Power                 | : Class 4 (2W) at GSM 850 and EGSM900 MHz band<br>Class 1 (1W) at DCS1800 and PCS1900 MHz band<br>Class 3 (0.25W) at WCDMA 850/1900/2100 |
| RF Sensitivity                     | : Better than -106dBm<br>Better than -106dBm at WCDMA 850<br>Better than -108dBm at WCDMA 1900/2100                                      |
| External Antenna                   | : 2.5/1.8*dBi, 50W, TNC (Male) Connector, Fixed Omni Directional Swivel Antenna  |
| FAX*                               | : PC Fax   |
| Speech Gain (Transmit and Receive) | : Programmable in step of 3 dB   |
| GPRS*                              |  |
| Connectivity                       | : GPRS Multi-slot Class 10, GPRS Mobile Station Class B  |
| Data GPRS                          | : Downlink transfer: 85.6 Kbps (Max),<br>Uplink transfer: 42.8 Kbps (Max)<br>Supports Packed Switched Broadcast Control Channel          |
| FXO (CO)Port                       |  |
| Connection                         | : RJ11   |
| Off Hook Line Impedance            | : 600  |
| Loop Limit                         | : 1500W  |
| Pulse Dialing                      | : 10PPS and 20PPS @1:2, 2:3, 1:1   |
| DTMF Dialing and Reception         | : ITU-T Q.23 and Q.24  |
| CLI Reception                      | : DTMF, FSK ITU-T V.23 and FSK Bellcore 212A   |
| Call Maturity                      | : Polarity Reversal  |
| Protection                         | : Solid state (Over Voltage and Over Current) built-in<br>Secondary Protection   |
| FXS (SLT) Port                     |  |
| Connection                         | : RJ11   |
| Off Hook Impedance                 | : 600W   |
| Loop Limit                         | : 270W (Max) Excluding Telephone set   |
| Loop Feed                          | : 39mA (Max)   |
| Ringing Voltage                    | : 55Vrms @25Hz, 3REN   |
| Pulse Dialing                      | : 10 PPS and 20PPS @ 1:2, 2:3 and 1:1  |
| DTMF Dialing and Reception         | : ITU-T Q.23 and Q.24  |
| CLIP                               | : DTMF, FSK ITU-T V.23 and FSK Bellcore 212A   |
| Call Maturity                      | : 16KHz or 12KHz SPM, Polarity Reversal  |
| Protection                         | : Solid state (Over Voltage and Over Current) built-in<br>Secondary Protection   |
| COMM Port (RS232C)                 | : DB9 (Female)   |
| LED Indications                    | : Power Supply, Network, SIM, FXS and FXO  |
| Transmission (Between FXS-FXO)     |  |
| Return Loss                        | : Better than 18dB   |
| Insertion Loss                     | : < 1dB  |
| Inter-Channel Cross-Talk           | : < -65dBm   |
| Idle Channel Noise                 | : < -70dBmOp   |
| Longitudinal Balance               | : Better than 40dB   |
| Power Supply                       |  |
| Input                              | : 12VDC @1.25A through External Adaptor<br>(90-265VAC, 47-63Hz)  |
| Power Consumption                  | : 5W (Typical)   |
| Connector                          | : DC Power Jack  |
| Mechanical                         |  |
| Dimensions (WxHxD)                 | : 18.35x19.8x4.46cm (5.26"x7.80"x1.76")  |
| Unit Weight                        | : 1.2Kgs (2.6lbs) Approx.  |
| Shipping Weight                    | : 1.9Kgs (4.2lbs) Approx.  |
| Material and Finish                | : ABS Plastic  |
| Installation Mounting              | : Wall and Table-Top   |
| Environmental                      |  |
| Operating Temperature              | : -10°C to +50°C (14°F to +122°F)  |
| Storage Temperature                | : -40°C to +85°C (-40°F to +185°F)   |
| Operating Humidity                 | : 5-95% RH (Non-Condensing)  |
| Storage Humidity                   | : 0-95% RH (Non-Condensing) at 40°C  |

## COMPLIANCES

### EMI/EMC

|                                |                    |
|--------------------------------|--------------------|
| Conducted Emission             | : CISPR 22 Class B |
| Radiated Emission              | : CISPR 22 Class B |
| Harmonic Current Emission      | : IEC 61000-3-2    |
| Voltage Flicker                | : IEC 61000-3-3    |
| Electro-static Discharge       | : IEC 61000-4-2    |
| Radiated Susceptibility        | : IEC 61000-4-3    |
| Electrical Fast Transient      | : IEC 61000-4-4    |
| Surge                          | : IEC 61000-4-5    |
| Conducted Immunity             | : IEC 61000-4-6    |
| Power Frequency Magnetic Field | : IEC 61000-4-8    |
| Voltage Interruption & Dips    | : IEC 61000-4-11   |

### FCC

|                    |                                  |
|--------------------|----------------------------------|
| Conducted Emission | : FCC Part 15 Sub Part B Class B |
| Radiated Emission  | : FCC Part 15 Sub Part B Class B |

### EC Directives

R&TTE 1999/5/EC

LVD 73/23/EEC

EMC 89/336EEC

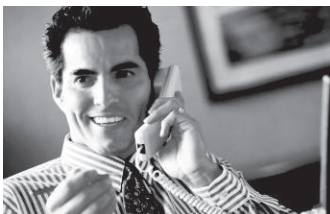
### Safety

IEC 60950-1: 2001 First Edition

## GSM PRODUCTS FROM MATRIX

|                     |   |
|---------------------|---|
| SIMADO GDT11        | GSM FCT for Data Applications with 1 GSM Port and 1 RS232C Port   |
| SIMADO GFX11        | GSM FCT for Voice Applications with 1 GSM Port and 1 FXS Port   |
| SIMADO GFX11 3G     | GSM FCT for Voice Applications with 1 GSM Port and 1 FXS Port with 3G Support   |
| SIMADO GFXD1111S    | GSM FCT Router for Voice and Data Applications with 1 GSM Port, 1 FXO Port<br>1 FXS Port and 1 RS232C Port                |
| SIMADO GFXD1111S 3G | GSM FCT Router for Voice Applications with 1 GSM Port, 1 FXO Port<br>1 FXS Port and 1 RS232C Port with 3G Network Support |
| SIMADO GFX44        | GSM-FXS Gateway with 4 GSM Ports and 4 FXS Ports  |
| SIMADO GFX44 3G     | GSM-FXS Gateway with 4 GSM Ports and 4 FXS Ports with 3G Support  |
| SIMADO GFX888       | GSM-FXO-FXS Gateway with 8 GSM Ports, 8 FXO Ports and 8 FXS Ports   |
| SIMADO GBR21        | GSM-ISDN BRI Gateway with 2 GSM Ports and 1 ISDN BRI Port   |
| SIMADO GBR21 3G     | GSM-ISDN BRI Gateway with 2 GSM Ports and 1 ISDN BRI Port with 3G Support   |
| SIMADO GBR42        | GSM-ISDN BRI Gateway with 4 GSM Ports and 2 ISDN BRI Ports  |
| SIMADO GBR42 3G     | GSM-ISDN BRI Gateway with 4 GSM Ports and 2 ISDN BRI Ports with 3G Support  |

\*GPRS class10 and fax services are available with SIMADO GFXD1111S



## ABOUT MATRIX

An ISO 9001 Company, Matrix is a leader in the VoIP, GSM, Key Phone System and PBX market. An innovative, technology driven and customer focused organization; the company is committed to keep pace with revolutions in the telecom industry. This has resulted in bringing forth cutting edge products like VoIP Phones, VoIP Gateways, VoIP ATA, GSM FCT, GSM Gateways, SMB PBX, Enterprise PBX, Hotel PBX, Voice Messaging Products, Communication Security Products and PLCC Switches. With over 1,500,000 line units installed and growing by over 1500 line units per day, the installed base of Matrix connects over 15,000,000 calls everyday. Thus, Matrix has gained the trust and admiration of users representing the entire spectrum of industries. Matrix has won many awards for its innovative products.



For further information contact:



### MATRIX TELECOM PVT. LTD.

394-GIDC, Makarpura,  
Vadodara-390010, India.  
Phone: +91 265 2630555  
Fax: +91 265 2636598  
Email: [Inquiry@MatrixTeleSol.com](mailto:Inquiry@MatrixTeleSol.com)  
URL: [www.MatrixTeleSol.com](http://www.MatrixTeleSol.com)  
SMS 'MATRIX' to 99987 55555