



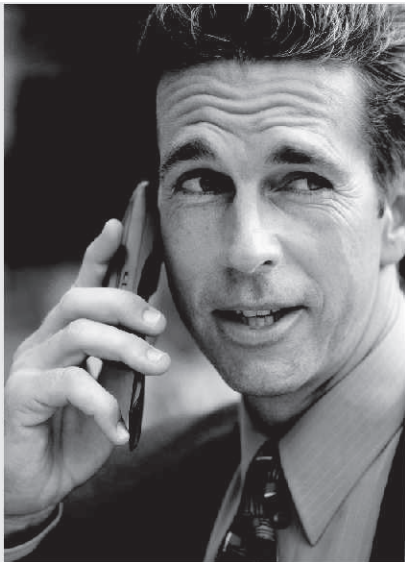
## SIMADO GFX44

### Multi-Port GSM/3G-FXS Gateway

Most of the businesses have existing investments made in traditional wired-line telecom infrastructure known as Plain Old Telephone Service (POTS). This investment could be in the form of PBX, phones and wiring. GSM has emerged as a viable alternative to this fixed-line network and offers distinct advantages of its own. Today's businesses expect the specific benefits from GSM and POTS without sacrificing the existing well-running POTS infrastructure. Business organizations having access to both these networks 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).

Matrix SIMADO GFX44 is one such gateway equipment offering interfaces for multiple GSM ports and FXS ports. It can be used with any brand of existing PBX or even in a stand-alone mode. There is no need to change any aspect of the existing telephony infrastructure. Matrix SIMADO GFX44 works as an adjunct. SIMADO GFX44 supports flexible routing options providing significant cost savings and round-the-clock connectivity.

Let Matrix SIMADO GFX44 add a competitive edge to your business by reducing telephone costs!



## Gateway to interface GSM and POTS Networks

Matrix SIMADO GFX44 is a gateway to interface GSM and Plain Old Telephone System (POTS) networks. On the GSM side, it supports 2G Quad-band and 3G Tri-band operation allowing it to work with any GSM network. On the POTS side FXS interfaces are supported. Incoming calls on GSM ports can be routed on FXS ports. Outgoing calls from FXS are routed on GSM ports depending on the least cost routing logic. It can handle calls on all the ports simultaneously allowing full traffic on all the ports.

Existing PBX users can avail the low tariff of GSM networks by connecting SIMADO GFX44 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. Matrix SIMADO GFX44 routes the calls either on GSM network depending on the destination numbers dialed by the users. In addition, SIMADO GFX44 can also be used without a PBX in a stand-alone mode.

Intelligent and flexible routing is forte of the Matrix SIMADO GFX44. Least Cost Routing (LCR) algorithm encompasses dialed number based routing facilitating selection of the most cost-effective route. Numbers received from calling network are converted by Automatic Number Translation (ANT) to match with the numbering plan of the destination network.

The SIMADO GFX44 is very easy to install and operate. In addition, the Jeeves (a Windows based multi-lingual GUI tool) is supplied to configure various parameters. Antenna mixers (4 to 1) are built-in and hence only one antenna is required. The SIMADO GFX44 can be mounted on a wall or any table surface.

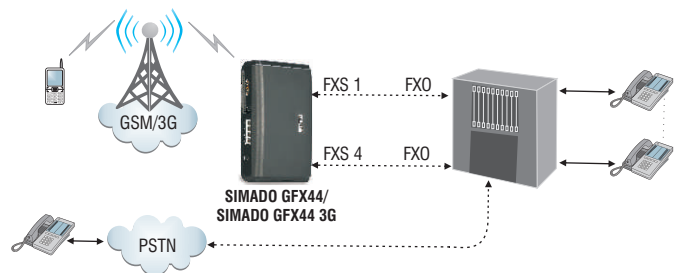
### SIMADO GFX PRODUCT RANGE

- SIMADO GFX44
- SIMADO GFX44 3G

### APPLICATIONS DIAGRAMS



Stand-alone Application



FXS with PBX (FXO) Application



## KEY FEATURES

### 3G Network Support

Matrix SIMADO GFX44 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.

### Allowed and Denied Lists

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

### Automatic Call Distribution

SIMADO GFX44 offers different schemes to select destination port for an incoming call. They are First Free, Round Robin, Least Cost and others.

### Port Status

SIMADO GFX44 monitors availability of all the ports continuously. If a port is not available for any reason, SIMADO GFX44 routes the call on the next best-fit port.

### Automatic Number Translation

Matrix SIMADO GFX44 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 just the local number, the SIMADO GFX44 adds area code as appropriate prefix.

### Call Detail Recording (CDR)

Matrix SIMADO GFX44 stores up to 200 calls made through the gateway in its internal memory. Reports can be generated on the COMM port using filters like Port, Number, Date, Duration, etc.

### Call Progress Tones and Rings

SIMADO GFX44 provides programmable Call Progress Tones like Dial Tone, Ring Back Tone and Busy Tone etc. Country-specific tones can be selected to match the tones of the country where it is getting installed. Similarly, Ring cadences can also be selected.

### Calling Party Control (CPC)

SIMADO GFX44 can send Calling Party Control call release signal on its FXS ports. This signal is then sensed by 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 ports getting stuck.

### Caller Line Identification Presentation (CLIP)

SIMADO GFX44 supports CLIP on FXS and GSM ports. A port can be programmed to receive or send CLIP using any of the protocols like DTMF, FSK ITU-T V.23 and FSK Bellcore 202A.

### Compact and Sturdy

SIMADO GFX44 is integrated gateway equipment. It can be installed on a wall or any table surface.

### Day Light Saving

The Real Time Clock (RTC) of the SIMADO GFX44 moves forward or backward automatically in tune with the Day Light Saving requirements of the country.

### Fixed Number Dialing

Preconfigured number can be dialed out as soon as a call lands on a port. This allows point-to-point connectivity eliminating the need of dialing the same number repeatedly.

### International Mobile Equipment Identity (IMEI)

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

### Jeeves

Jeeves is a Windows based GUI software tool for programming the SIMADO GFX44. It is intuitive, user friendly and supports many languages like English, French, Spanish, German, Russian, Portuguese, Italian and Russian.

### Least Cost Routing (LCR)

The SIMADO GFX44 supports LCR algorithm based on dialed number. This features allows selection of the most economical route for an outgoing call among the available GSM ports

### LED Indications

A dual-color LED is provided for each FXS ports. They indicate current status of calls on these ports. There is one LEDs for each GSM port for Network and call status.

### Network Selection

Each GSM port can be programmed to work only with a few selected networks preventing a GSM port from registering with an overlapping but costly network. This flexibility is very useful when SIMADO GFX44 is installed near a state or national border.

### PCM-TDM Platform:

The SIMADO GFX44 uses digital switching platform based on PCM-TDM concepts. This architecture provides better speech quality and higher noise immunity.

### Remote Programming

It is possible to change the configuration of the SIMADO GFX44 from anywhere in the world. System engineer can log-in on any of the ports and enter in the programming mode after dialing password.

### Returned Calls to Original Caller (RCOC)

Matrix SIMADO GFX44 maintains records of all the unsuccessful calls on GSM network due to No Answer and other such conditions. When such a call is returned, it routes the call to the original caller.

### SIM PIN

SIMADO GFX44 allows user to program 4 digits PIN number (Personal Identification Number) which prevents the SIM against unauthorized use. User has to enter PIN for making any operations. User can change the SIM PIN as and when required. SIM gets blocked if PIN is entered wrongly thrice in a row.

### Speech Gain

SIMADO GFX44 allows user to set transmit and receive gains of GSM port to improve quality of speech.

### Time Zones:

Call routing can adapt to different routing needs during day time, lunch time and night hours. Four different time zones can be programmed and each port can be programmed to behave differently in each time zone.

### Universal Routing

A call received on a GSM port can be routed on any FXS or even another GSM port. Similarly, as incoming call on an FXS port can be routed to any GSM port or even another FXS port.

## FEATURES

### Software Features

- Allowed-Denied Lists
- Automatic Call Distribution
- Auto Port Sensing
- Automatic Number Translation
- Call Detail Recording (CDR)
- Call Maturity
- Call Progress Tones Selection
- CLIP
- Day Light Saving
- Emergency Number Dialing
- Fixed Number Dialing
- International Mobile Equipment Identity (IMEI)
- Jeeves (Windows based GUI Tool)
- Least Cost Routing (LCR)
- Network Selection
- Password Protection

- Remote Programming
- Ring Selection
- Speech Gain Setting
- SIM PIN
- Universal Routing

### Hardware Features

- 2G Quad-band Support
- 3G Tri-band Support
- Compact and Sturdy Design
- Digital Switching (PCM-TDM)
- LED Indications
- Real Time Clock (RTC)
- RS232C Port
- SLIC based Design
- SMT Technology
- Wall and Table-top Mounting

## TECHNICAL SPECIFICATIONS

### GSM Port

GSM Band (MHz)	: Quad Band: GSM850, EGSM900, DCS1800, PCS1900 Tri Band: WCDMA 850/1900/2100 MHz
Compliant	: ETSI GSM Phase2/2+
SIM Card	: One SIM per GSM Port
SIM Interface	: 1.8V, 3V
Transmission Power	: Class 4 (2W) at GSM 850 and EGSM900 MHz band Class 1 (1W) at DCS1800 and PCS1900 MHz band Class 3 (0.25W) at WCDMA 850/1900/2100
RF Sensitivity	: Better than -106dBm at GSM850/EGSM900/DCS1800/PCS1900 Better than -106dBm at WCDMA 850 Better than -108dBm at WCDMA 1900/2100
External Antenna	: 1.8/2.5 dBi, 50Ω, SMA (Male) Connector, Fixed Omni Directional Swivel Antenna 1.8/3.0 dBi, 50Ω, SMA (Male) Connector, Omni Directional with cable of 3meters length
Speech Gain (Transmit and Receive)	: Programmable

### FXS (SLT) Port

Connection	: RJ11
Off Hook Impedance	: 600Ω
Loop Limit	: 1200Ω(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	: ITUT Q.23 and Q.24
CLIP	: DTMF, FSK ITU-T V.23 and FSK Bellcore 202A
Call Maturity	: 16KHz or 12KHz SPM, Polarity Reversal
Flash Time	: 83-999ms (Programmable)
Call Progress Tones	: Programmable
RS232C Port	: DB9 Male
LED Indications	: GSM: 1 LED per Port for Network and Call Status FXS: 1 LED per Port for Call Status Power Supply: 1 LED

### Power Supply

Input	: 12VDC @2A Through External Adaptor (90-265VAC, 47-63Hz)
Power Consumption	: 8W (Typical)
Connector	: Casio DC Power Jack

### Mechanical

Dimensions (WxHxD)	: 15.5 x 22.0 x 4.95cm (6.10"x8.66"x1.95")
Unit Weight	: 1.00kg(2.21lbs) Approx.
Shipping Weight	: 2.50kg(5.5 lbs) Approx.
Material	: 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

\*Depends on GSM frequency band

## 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 1 FXS Port and 1 RS232C Port
SIMADO GFXD1111S 3G	GSM FCT Router for Voice Applications with 1 GSM Port, 1 FXO Port 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 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

## ABOUT MATRIX



An ISO 9001 Company, Matrix is a leader in Telecom and Security solutions for modern businesses and enterprises. An innovative, technology driven and customer focused organization; the company is committed to keep pace with the revolutions in the telecom and security industries. With around 30% of its human resources dedicated to the development of new products, Matrix has launched cutting-edge telecom products like IP-PBX, Universal Gateways, VoIP Gateways and Terminals, GSM Gateways, Access Control and Time-Attendance Systems and Fire Alarm Systems. These solutions are feature-rich, reliable and conform to the international standards. Having global foot-prints in Asia, Europe, North America, South America and Africa through an extensive network of more than 500 channel partners, Matrix ensures that the products serve the needs of its customers faster and longer. Matrix has gained trust and admiration of more than 150,000 customers representing the entire spectrum of industries. Matrix has won many awards for its innovative products.

For further information contact:



### MATRIX COMSEC PVT. LTD.

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