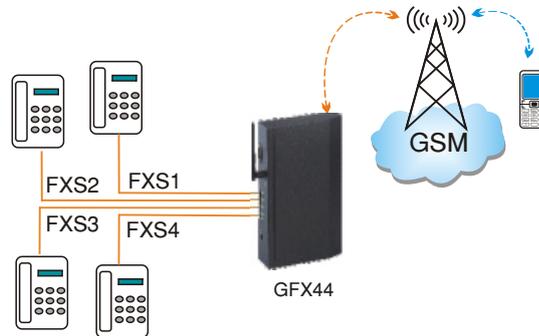# SIMADO GFX44
Multi-port GSM to FXS Gateway

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. Recently, 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-by 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!
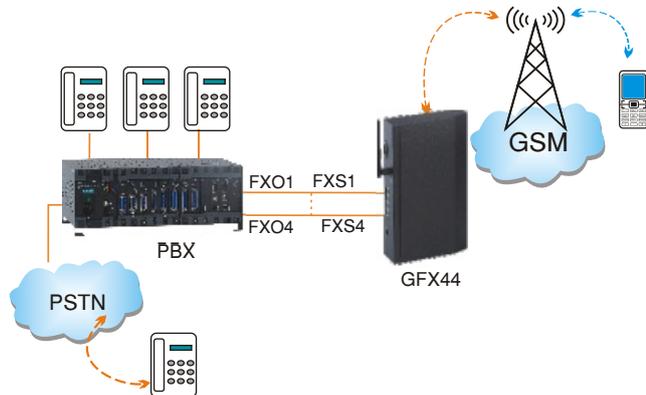
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Simado GFX44 Stand-alone Application

■ Matrix Simado GFX44 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 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.

Simado GFX44 (FXS) with PBX (FXO) Application

Intelligent and flexible routing is forte of the Matrix Simado GFX44. Least Cost Routing (LCR) algorithm encompasses dialed number based routing selects 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 GFX44

KEY FEATURES

PAllowed 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, and Least Cost etc.

Ort 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 2000 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 Duration Control (CDC)

Duration of each call made through Simado GFX44 can be controlled. When the duration of a call exceeds the set time limit, the call is forcefully disconnected. Different time limits can be set on each port. This feature can also be used to release ports that are left open accidentally.

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.

Simado GFX44

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 212A.

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 without the repeated need of dialing the same number.

Route Call to Original Caller (RCOC)

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

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 selects a port that is offering the least cost for an outgoing call. It supports LCR algorithms based on dialed Number. It selects the most cost-effective among GSM ports. Thus, each call can be routed on the most economical route

LED Indications

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

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

SimadoGFX44 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.

Simado GFX44

■ FEATURES

Hardware Features
Compact and Sturdy Design
Digital Switching (PCM-TDM)
LED Indications
Quad-band Operation
Real Time Clock (RTC)
COMM (RS232C) Port
SLIC Based Design
SMT Technology
Wall and Table-top Mounting

Software Features
Allowed-Denied Lists
Automatic Call Distribution
Auto Port Sensing
Automatic Number Translation
Call Detail Recording (CDR)
Call Duration Control (CDC)

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)
Location Information Indication
Network Response Timer
Network Selection
Password Protection
Remote Programming
Ring Selection
Speech Gain Setting
SIM PIN
Universal Routing

■ TECHNICAL SPECIFICATIONS

GSM Port

GSM Band (MHz)	:	Quad Band: GSM850, EGSM900, DCS1800, PCS1900
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
RF Sensitivity	:	Better than -106 dBm
External Antenna	:	2.5dBi, 50Ω, SMA (Male) Connector,
		Fixed Omni Directional Swivel Antenna,
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 212A
Call Maturity	:	16KHz or 12KHz SPM, Polarity Reversal
Flash Time	:	83-999ms (Programmable)
Call Progress Tones	:	Programmable

RS232C (COMM) Port

	:	DB9 Male
LED Indications	:	GSM: 2 LED per Port for Network and Call Status
		FXS: 1 LED per Port for Call Status

Power Supply

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

Mechanical

Dimensions (WxHxD)	:	15.5 x 22.0 x 5.0 cm (6.1' x 8.7' x 2.0")
Unit Weight	:	1.00Kgs (2.21lbs) Approx.
Shipping Weight	:	2.50Kgs (5.5 lbs) Approx.
Material	:	Powder Coated Aluminum
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 A
Radiated Emission	: CISPR 22 Class A
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 A
Radiated Emission	: FCC Part 15 Sub Part B Class A

EC Directives

R&TTE 1999/5/EC
LVD 73/23/EEC
EMC 89/336EEC

Safety

IEC 60950 3rd Edition (1999)

■ 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 Application with 1- GSM port and 1- FXS port
Simado GFXD1111S	GSM FCT Router for Voice and Data Application with 1- GSM port, 1- FXS port, 1- FXO port,1- RS232C port and External Power Supply Adaptor
Simado GFXD1111	GSM FCT Router for Voice and Data Application with 1- GSM port, 1- FXS port, 1- FXO port,1- RS232C port, Built-in Battery and Internal Power Supply
Simado GFX44	GSM-POTS Gateway with 4 - GSM ports and 4 - FXS ports
Simado GFX888	GSM-POTS Gateway with 8 - GSM ports, 8 - FXS ports and 8 - FXO ports
Simado GBR42	GSM-ISDN BRI Gateway with 4 - GSM ports and 2 - ISDN BRI ports

■ 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 Digital and ISDN Key Phone Systems, Voice Messaging Products, GSM Gateways, VoIP Gateways, VoIP PBXs, Intercom Security Products and PLCC Switches. With over 1,000,000 line units installed and growing by over 1000 line units per day, the installed base of Matrix connects over 10,000,000 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.

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For further information contact:

Due to continuous technology upgradations, product specifications are subject to change without notice.