

# GSM PRI Gateway



**Straightforward GSM connectivity for your fixed line system, with lower calling costs too.**

The unit is specifically designed for carriers and distributors, a segment of medium sized to large companies with digital (ISDN) PBXs

A compact 3U GSM gateway with a EuroISDN PRI interface, remote control and configuration options. The OS-free concept features a high system stability – the system is equipped with two Philips XAG46/30MHz processors that provide error-free operation, high speed and easy upgrade.

The system design enables easy operation, configuration and replacement of defective components if any – it is composed of plug-in cards communicating with each other along a bus. The selected concept provides easy detection, automatic blocking and component replacement if necessary. Thanks to the above mentioned features, the system can be configured and installed easily and can be fully used in one hour!!!

## Basic Features

**Quick start** - the system contains no operating system and is fully functional in several seconds after power on / reset (its full function depends on the current GSM network load).

**Intelligent call processing** - GSM PRI Gateway is ready to route outgoing calls from ISDN to GSM networks and vice versa – from GSM networks back to the ISDN. A powerful Least Cost Routing function allowing to modify the number dialed helps you route outgoing calls as

you wish. A transparent CLIP function plus the Voice message recording option together with the incoming DTMF enable you to connect incoming GSM calls comfortably.

**Router/PBX/switch GSM module selection option** - GSM-PRI Gateway allows you to enable the so-called locked channel mode – this function enables your router/PBX/switch to select the GSM module directly.

**User friendly to GSM networks** - GSM-PRI Gateway enables to disconnect automatically, upon a definable timeout, unused modules automatically, thus relieving GSM networks. In case the number of currently connected calls increases, GSM-PRI Gateway re-logs these GSM modules into the GSM network automatically.

**High ASR** - GSM-PRI Gateway receives an incoming ISDN call (setup message) just in case it is able to send the destination number successfully into the GSM network. This function allows, among others, to use another route for a call in the case of GSM network problems – not being able to serve an incoming call successfully, GSM-PRI Gateway rejects the ISDN connect request, i.e. allows your router/PBX/switch to connect the call using another device. The reason for rejection is sent together with the reject request automatically (defined causes in the reject message).

**Detailed statistics** - GSM-PRI Gateway automatically generates detailed statistic data on all incoming and outgoing calls.

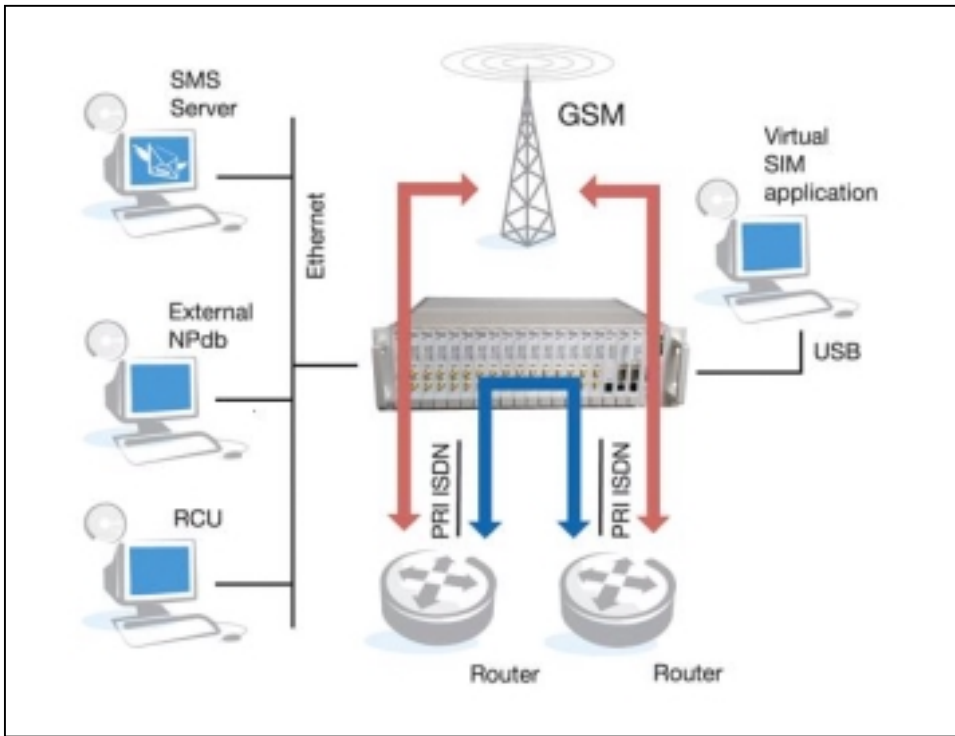
**Detailed CDR** - having terminated a call (even a non-connected one), GSM-PRI Gateway automatically stores this call information into the memory. This information includes, among others, IMSI (SCID) of the SIM card through which the connection was made.

**High traffic volume (over 500,000 minutes/month)** - thanks to a very short time between the ISDN connect request (setup) and subsequent dialing into the GSM network GSM-PRI Gateway helps achieve a very high traffic volume.

**SMS** - SMS send and receive options. The gateway allows to send SMS in the PDU format.

**Up to 8 GSM groups** - up to eight independent SIM card groups can be created in GSM-PRI Gateway, which are definable according to the GSM-PRI Gateway SIM position.

**Up to 32 GSM channels** - 1 to 16 independent GSM boards can be installed in GSM-PRI Gateway, each of which contains two GSM modules (Siemens TC35 or Ericsson GM47, GM48).



**World-wide use** - the modules used support GSM-PRI Gateway's co-operation with GSM networks in 850MHz, 900MHz, 1800MHz, and 1900MHz bandwidths.

**Up to 128 SIM cards** - every GSM module can communicate with up to four SIM cards (one may be active only). SIM card switching can be programmed according to time, day in a week, called minutes, sent SMS or at random. An automatic detection of a defective SIM card and its exclusion from the active group is a matter of course.  
2 antennas per 32 channels only\*\*\*

**Hot-swappable** - all GSM boards can be hot-swapped. This function allows you to replace SIM cards immediately during the full GSM-PRI Gateway operation (as a matter of course, the use of the selected GSM board can be blocked temporarily to avoid interruption of current calls while removing the GSM board).

**PRI ISDN interface** - can be configured as NT or TE, with the Master or Slave synchronisation option. Supporting standard for the euroISDN interface (Q.931-EDDS1).

**Simple error diagnostics** - GSM-PRI Gateway informs visually (using LEDs on boards), textually (using the delivered program), or graphically (WEB interface) of the current status of all boards.

**Easy supervision and configuration** - GSM-PRI Gateway can be configured and supervised (remotely or locally) using the following connections:

- locally via an RS232 interface
- ISDN (analogue) modem connected to an RS232 interface. An automatic detection of the modem connection and thus automatic modem configuration are a matter of course.
- 10baseT interface - TELNET, SSH\*, SNMP\* and HTTP\* protocols.
- Inband B-channel in PRI ISDN connection.

The system communicates using extended AT commands (like a modem). A comfortable configuration (completed in 30 minutes) and supervision are ensured by SW\*\* specifically developed for GSM-PRI Gateway communication.

**Easy update** - since every product (including GSM-PRI Gateway) is subject to constant updating and upgrading, new firmware\*\* versions can be loaded into the system remotely or locally within a few minutes! Moreover, your configurations remains unmodified.

**Remote Control Unit (R.C.U.)** - a 3U industrial PC version with Linux OS of RedHat 7.3 version – for a maximum stability and security – an integrated firewall. The device allows for remote supervision and configuration of GSM-PRI Gateways connected via SNMP, SSH, WEB. It provides the option to send SNMP traps in the case of defined statuses (errors). A practically unlimited

size for cdr and ISDN trace. This information can be carried to your PC easily using SSH or http protocols.

A highly intelligent LCR installation option including number database (number transferability, blacklist)\*. An option to send diagnostic SMS and E-mail GSM-PRI Gateway status information automatically.

30+2 channel PRI-GSM (E1-GSM) gateway

- Least Cost Routing
- SIEMENS TC35 wireless modules (900/1800MHz) – 4 SIMs per channel
- ERICSSON GM47 wireless modules (900/1800MHz) – 4 SIMs per channel
- ERICSSON GM48 wireless modules (850/1900MHz) – 4 SIMs per channel
- ERICSSON GM22 wireless modules (900/1800MHz) – 1 SIM per channel
- INDEPENDENT of a specific GSM module - FLEXIBILITY
- 4 SIMs per channel in the basic configuration for no extra charge
- Only 2 antennas (1 per 16 channels)
- Easy and quick installation and programming (within 60 minutes)
- Comfortable and easy programming tool (Windows platform)
- Latest and compact design (3U size)
- User friendly LED indicators on the front panel with notification of all important statuses (SIM card errors, PRI layers, etc.)
- Hot swappable GSM modules and SIMs with an easy access from the front
- Auxiliary handset port for making test calls
- NOT PC based (absolutely stable system)
- All maintenance functions executable while SIM cards are in service

\* using R.C.U. only

\*\* The updates of SW and firmware are provided free of charge.

\*\*\* using an antenna combiner



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# GSM PRI Gateway

## GSM-PRI Gateway

Dimensions	▪ 482x133x360 mm (84HP x 3U x 360mm), 9.8 kg
Power supply	▪ Industrial, highly reliable, fan with a thermostat (in normal operation conditions it is turned off) ▪ Max 230VA, 100-240VAC
Environm. cond.	▪ Temperature: +5°C to +45°C ▪ Humidity: 5% to 95% (non-condensing)
Interfaces/Supported protocols	▪ PRI: Q.931, EDSS1, national variations ▪ Half rate, full rate, enhanced full rate
	▪ E1, NT/TE, CRC4/Double Frame ▪ 2 antennas (1 per 16 channels)
	▪ GSM: SIEMENS TC35, dual band (900/1800MHz), SMS ▪ 4 SIM cards per GSM channel in the basic config.

## Remote Control Unit

Specification	▪ SNMP monitoring ▪ Monitoring via WEB ▪ Automatic alarm notification via SNMP, e-mail, SMS in case of errors	▪ Traffic statistics info accessible via WEB ▪ Stable LINUX platform ▪ External routing ▪ Secure transmission protocols (SSH)
	▪ Safe connection to LAN via an integrated Firewall ▪ Unlimited detailed CDR and trace buffer with WEB access ▪ Detailed statistics about outg. + inc. calls via web interface	▪ Multilevel admin access ▪ Totally independent unit with no negative influence on GSM-PRI Gateway in case of any errors ▪ Network management system for many GSM-PRI Gateway units

## Antenna Combiner

Size	▪ 2U for all configurations
Scalability	▪ In steps of 4 up to 32 input channels ▪ In steps of 2 up to 8 antenna outputs
Description	▪ Input connectors: 'SMA' type ▪ Antenna connectors: 'N' type allowing to use a cable with low insertion loss ▪ Extremely low insertion loss
	▪ Integrated powerful overvoltage protection on all antenna outputs ▪ High isolation loss

## Antennas

YAGI antenna	▪ 13dB, high quality, high gain directional outdoor antenna with a scalable cable from 10 up to 30m
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## Additional Information

Package Contents	▪ GSM-PRI Gateway unit in 19" rack housing ▪ Omni Directional or YAGI antennas (depending on the order) ▪ Installation accessories ▪ CD with programming SW and a manual
Documentation	▪ English
Certification	▪ CE



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