ECOTEL® multichannel

ECOTEL® SIM Card Server (SCS)
ECOTEL® SIM Management Center (SMC)

4yourmobile communication

- All SIM cards at a central site
- No on-site maintenance to change SIM cards
- Flexible, centralized SIM card switching
- SMC software can assign any SIM card in the SCS to any GSM channel
- Online time contingent monitoring
- Compatible with ECOTEL® VTM pro*, ECOTEL® VoIP, ECOTEL® ISDN2-2x

The most effective SIM switching ever

Whether a GSM gateway runs successfully or not depends to a significant extent on correct operation of the SIM switching. Least-cost SIM card selection and time-dependent dynamic channel allocation for optimized traffic termination in applications with ECOTEL® VTM pro*, ECOTEL® VoIP or ECOTEL® ISDN2-2x gateways can be implemented with the ECOTEL® SIM Management Center (SMC) in combination with the ECOTEL® SIM Card Server (SCS). The SIM Management Center can also be used to manage the local SIMs of a single GSM gateway.

ECOTEL® SIM Card Server (SCS)

One of the most important advantages of the ECOTEL® SCS is its flexibility in scheduling SIM cards. The SIM cards are no longer stored locally. Using an IP infrastructure, they can virtually travel around the globe.

The SCS also protects the SIM cards from theft: All SIM cards are installed within the SCS at a safe location. Additional advantages include more efficient service and maintenance work: SIM cards can be exchanged at one single central location, saving time and money.

ECOTEL® SIM Management Center (SMC)

The ECOTEL® SIM Management Center (SMC) is the SIM switching expert for applications based on ECOTEL® VTM pro*, ECOTEL® VoIP or ECOTEL® ISDN2-2x gateways. The SMC consists of the SIM Management Center Software and an industrial PC. It controls the SIM switching for all gateways assigned.

There are two modes of operation: The ECOTEL® SMC can directly control the local SIM cards within multiple gateways or it can control the SIM switching of all connected gateways which access SIM cards stored in an ECOTEL® SIM Card Server.

*) The SIM Card Server components for ECOTEL® VTM classic and ECOTEL® VTM pro are 100% hardware-compatible, but not SMC.

VIERLING

All components linked by IP...

ECOTEL® SIM Card Server (SCS)

The ECOTEL® SIM Card Server provides access to the SIM interface of each SIM card. Independently of the issuer of the SIM card, the SCS can distribute the SIM cards worldwide by IP. An ECOTEL® VTM pro, ECOTEL® VoIP or ECOTEL® ISDN2-2x installed in Asia can use SIM cards hosted by an SCS in Europe. The ECOTEL® SIM card server is compatible with all ECOTEL® VTM pro, ECOTEL® VoIP and ECOTEL® ISDN2-2x gateways, except the 3G versions.

The SCS is modular and optionally redundant. It consists of one or more ECOTEL® SCS units and is always controlled by an ECOTEL® SMC. All components are linked by IP. The protocol assures seamless service even if one of the components is out of service.

ECOTEL® SCS manager

For up to 1125 SIM cards (5 x 225 SIM cards)

The ECOTEL® SCS manager is a 19" 1 HU Linux-based industrial PC. It provides direct access for the ECOTEL® gateways to the SIM cards within the ECOTEL® SCS subracks. One ECOTEL® SCS manager can control up to five ECOTEL® SCS subracks.

ECOTEL® SCS subrack

For up to 225 SIM cards (15 x 15 SIM cards)

The ECOTEL® SCS subrack is a 19" 3 HU PCB carrier for a maximum of 15 ECOTEL® SCS arrays carrying the SIM cards. A ECOTEL® SCS subrack can be equipped with up to 15 ECOTEL® SCS arrays.

ECOTEL® SCS array

For up to 15 SIM cards

An ECOTEL® SCS array can carry 15 SIM cards. Each active SIM card is indicated by an LED on the front panel.

ECOTEL® SIM Management Center (SMC)

The ECOTEL® SMC consists of the SIM Management Center Software and an industrial PC. It controls the SIM switching for all assigned ECOTEL® VTM pro, ECOTEL® VoIP and ECOTEL® ISDN2-2x gateways. There are two modes of operation:
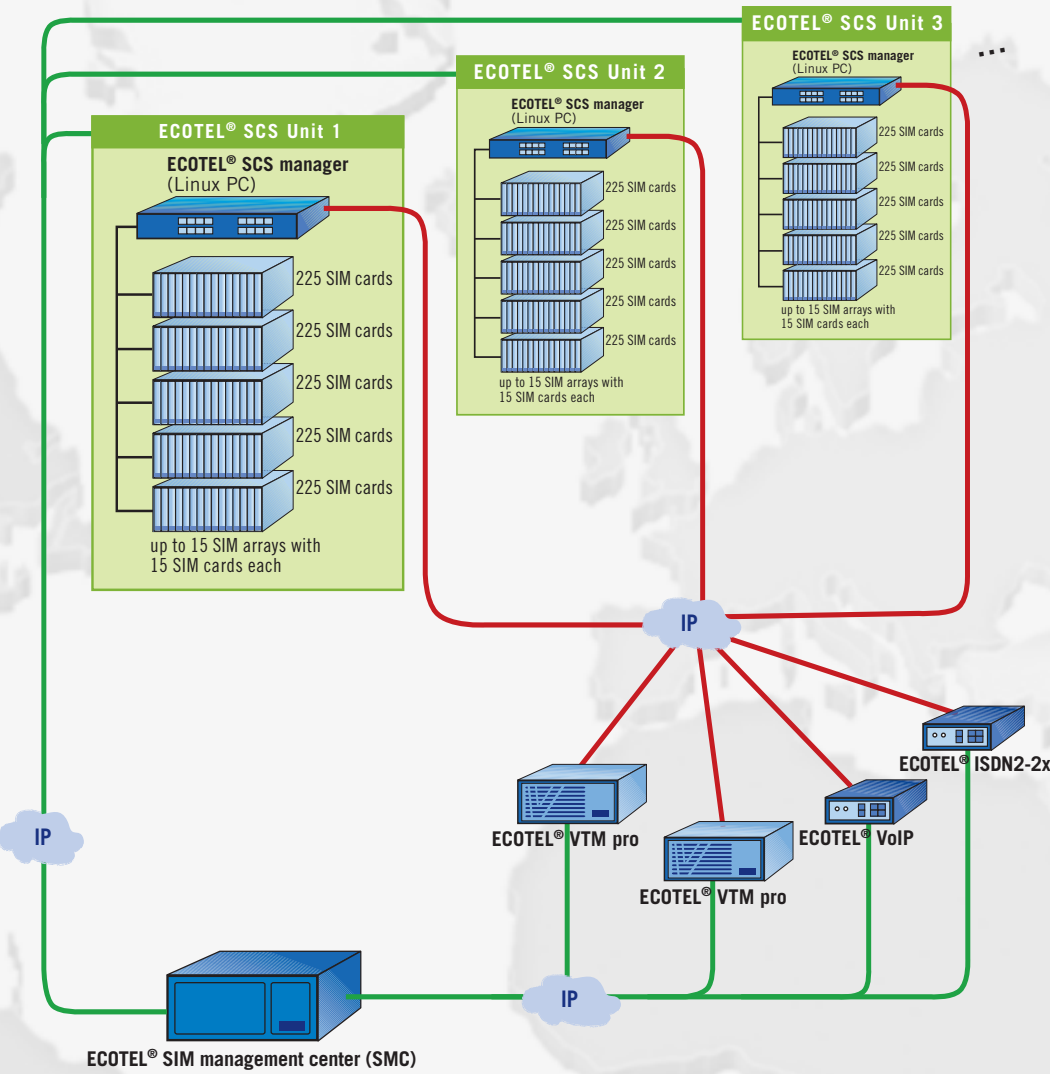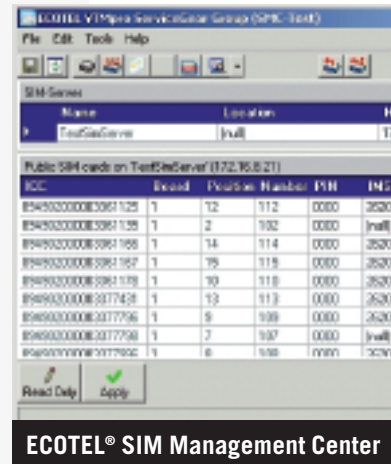
a) "Direct mode": The ECOTEL® SMC directly controls the local SIM cards of all gateways connected to the SMC. A SIM card server is not used. With the SMC, SIM card switching in the local gateways is done from a central site.

b) "SCS mode": The ECOTEL® SMC distributes the SIM cards stored in the SIM card server to the assigned gateways. The scheduling is controlled by the SIM switching rules which are assigned to each SIM group. ECOTEL® SMC in SCS mode can control several ECOTEL® SCS units. If one of these units fails, the error does not affect the other ECOTEL® SCS units.

Flexible, centralized SIM switching

The ECOTEL® SMC provides flexible and centralized SIM card switching options. The SMC software can dynamically assign SIM cards to the GSM channels. For example, it can optimize the number of termination channels for each provider based on time schedules: On weekdays, a certain gateway may use SIM cards of three or four different providers stored in the SIM card server, while on the weekend it will use the SIM cards of only one special provider also stored in the SCS.
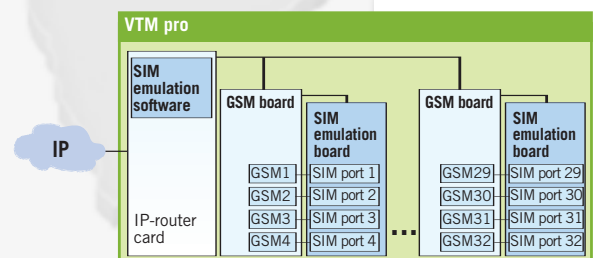
... assuring seamless service

ECOTEL® SCS Unit 3

ECOTEL® SCS manager
(Linux PC)

225 SIM cards
225 SIM cards
225 SIM cards
225 SIM cards
225 SIM cards

up to 15 SIM arrays with
15 SIM cards each

ECOTEL® SCS Unit 2

ECOTEL® SCS manager
(Linux PC)

225 SIM cards
225 SIM cards
225 SIM cards
225 SIM cards
225 SIM cards

up to 15 SIM arrays with
15 SIM cards each

ECOTEL® SCS Unit 1

ECOTEL® SCS manager
(Linux PC)

225 SIM cards
225 SIM cards
225 SIM cards
225 SIM cards
225 SIM cards

up to 15 SIM arrays with
15 SIM cards each

IP

IP

IP

IP

ECOTEL® VTM pro

ECOTEL® VTM pro

ECOTEL® VoIP

ECOTEL® ISDN2-2x

ECOTEL® SIM management center (SMC)

ECOTEL® SCS SIM emulation board

The SIM emulation board is the physical interface for the mobile equipment (GSM engine). The SIM emulation board also provides a local SIM cardholder. In case of IP problems, the SIM cards installed on this SIM cardholder can be used for backup. The SIM emulation board substitutes for the SIM 8, SIM 16 or SIM 32 cardholders that normally hold the local SIM cards. The SIM emulation board can be used with all types of GSM cards used wit-

hin ECOTEL® VTM pro gateways (except the 3G version) as well as with all types of ECOTEL® VoIP and ECOTEL® ISDN2-2x gateways.

VTM pro

SIM emulation software

GSM board

SIM emulation board

GSM board

SIM emulation board

IP

IP-router card

GSM1 — SIM port 1
GSM2 — SIM port 2
GSM3 — SIM port 3
GSM4 — SIM port 4

GSM29 — SIM port 29
GSM30 — SIM port 30
GSM31 — SIM port 31
GSM32 — SIM port 32

Settings for the most effective SIM switching

Time schedule for each GSM channel

The ECOTEL® SMC assigns a time schedule to each GSM channel. Assignments can include different operators or different rate schemes (based on certain SIM card groups) during the day, week or month.

SIM schedule

1) "SIM group"

Provides an option to select a certain group of SIM cards

2) "Day"

Provides an option to select days:

• Sunday to Saturday

• Working day (Monday to Friday)

• Holiday

• Weekend (Saturday and Sunday)

• All day (Sunday to Saturday)

3) "Start Time"

Start time for the specified group in the format: <hh>:<mm>

4) "End Time"

End time for the specified group in the format: <hh>:<mm>

SIM cards organized in groups

All SIM cards installed within a SIM card server can be assigned to SIM card groups. Each group is associated with a set of common parameters. Additionally, the individual call duration is stored for each SIM card. By using the SIM card group definitions, the SMC can manage prepaid / bundled minutes and contract SIM cards at the same time. The options available for each SIM group are listed below.

SIM groups

1) "Absolute Limit"

Defines the maximum time a SIM card can be used for outgoing calls. For bundled minute cards, an option is offered to reset the internal counter each day, week, month or never. Additional modes are:

a) Terminate a call immediately if the limit is reached.

b) Switch to an alternative SIM card if the limit is reached.

2) "Change Limit"

If a SIM card has to be changed before the "Absolute Limit" is reached, a "Change Limit" can be defined. If the "Change Limit" is reached, the SIM card is changed, but not blocked for further use.

3) "Usage" (total duration for which the SIM card is registered)

A time limit can be set for the total usage of a SIM card – no matter if the minutes are incoming or outgoing (optionally the internal counter for the absolute limit can be reset each day, week, month or never).