– **High quality voice**
– **Carrier-class reliability**
– **Desktop case**
– **Up to 128 VoIP channels**
– **Up to 4 E1 flows**

SMG-4

Trunking gateway

SMG is a trunking gateway for converting signal and media flows of TDM and VoIP networks. VoIP-VoIP calls are not supported.

Optimal solution for digital PBX

SMG-2 and SMG-4 provide a smooth transition from TDM infrastructure to modern VoIP networks, while ensuring full compatibility with existing equipment. The devices provide an excellent opportunity to connect digital PBXs to NGN networks.

Functional compatibility

Strict compliance with modern protocols, recommendations and standards ensures 100% functional compatibility of SMG with digital PBX, IP PBX, Softswitch, etc.

RADIUS routing

Intellectual call routing based on billing system responses according to the RADIUS protocol allows creating flexible methods of call processing.

Unauthorized access protection

SMG gateways have intelligent protection against external connections of SIP subscribers (fail2ban, iptables, white/black lists).

Media flows transcoding

The hardware transcoding helps to coordinate media flows with different VoIP codecs.

High quality voice processing

The high quality of voice processing is provided by the up-to-date hardware platform, support for main audio codecs used in VoIP networks (G.711, G.723.1, G.726, G.729, Clearmode), echo cancellation, silence detector, comfort noise generator, DTMF signal receiving and generating, as well as traffic prioritization (QoS) mechanisms.

Interfaces

SMG-4 has 4 ports of RJ-48 for E1 stream connection and 1 LAN port of 10/100/1000BASE-T (RJ-45) for IP network connection.

SMG-2 in basic configuration supports one E1 (SS7, DSS1) stream and 32 VoIP (SIP) channels. It is possible to add a second E1 stream and increase the number of VoIP channels up to 64 by enabling an additional option.

Technical features

Name	E1 streams	E1 stream expansion	VoIP channels
SMG-2	1	up to 2	up to 64
SMG-4	4	-	128

Use case

Features and capabilities

Call management
– Routing by Called Party Number (CdPN) or Calling Party Number (CgPN)
– Number modification before and after routing
– Multiple dial plans
– Trunk group cut-off
– Call management via RADIUS[1]
– Direct connection of trunk groups
– Prefix for multiple trunk groups
– Semi-permanent connection establishment[1]

Voice codecs
– G.711 (a-law, μ-law), G.729 (A/B), G.723.1, G.726 (32 Kbps), Clearmode (RFC4040)

Fax support
– T.38 Real-Time Fax, G.711 (a-law, μ-law) pass-through

Voice standards
– VAD (Voice Activity Detector)
– CNG (Comfort Noise Generation)
– AEC (Acoustic Echo Cancellation, G.168)

Quality of Service (QoS)
– Diffserv and 802.1p priority assignment for SIP and RTP
– Dynamic and static jitter buffer

DTMF
– RFC 2833, SIP INFO
– INBAND

Billing
– RADIUS Accounting
– Support for Hydra Billing, LANBilling, PortaBilling, NetUP, BGBilling (integration with other systems is possible)
– Billing information recording to a CDR file and sending to a remote FTP server

TDM protocols
– SS7
– PRI (Q.931)

VoIP protocols
– SIP, SIP-T, SIP-I

Q.931 subscriber name transmission
– Name transmission means: QSIG, CorNet, Q.931 Display, AVAYA Display
– Support for AVAYA, Siemens, Windows-1251, Translit and Unicode (UTF-8) encodings

Capacity and performance
SMG-2
– Up to 64 VoIP channels
– Up to 2 E1 streams (RJ-48)
– Maximum load intensity — 40 cps

SMG-4
– 128 VoIP channels
– 4 E1 streams (RJ-48)
– Maximum load intensity — 40 cps

Flexibility
– Single file download-upload of configuration
– Creation of multiple network interfaces (SIP, RTP) with different IP addresses
– Multiple dial plans
– SS7 channel redundancy
– Talking connection monitoring (by RTP or RTCP availability)
– Trunk registration of SIP interfaces
– Support for STUN/Public IP

Management and monitoring
– E1 and VoIP channel monitoring via web interface
– Alarm logging with the option of storing entries on the Syslog server
– Alarm reporting via SNMP

Security
– Logging of all access attempt to the device
– List of allowed IP addresses for access to device management
– Multilevel access permission (admin/user)
– RTP stream identifier source description
– Authentication and authorization of web users on RADIUS or TACACS+ server

Interfaces
SMG-2
– 1 × 10/100/1000BASE-T (RJ-45)
– 1 × E1 (RJ-48)
– 1 × additional E1 (RJ-48)[1]
– 1 × Console (RJ-45)
– 1 × USB 2.0

SMG-4
– 1 × 10/100/1000BASE-T (RJ-45)
– 4 × E1 (RJ-48)
– 1 × Console (RJ-45)
– 1 × USB 2.0

Physical specifications
– Power: 220 V AC (via 12 V DC, 2 A adapter)
– Operating temperature: from +5 to +40 °C
– Relative humidity: up to 80 %
– Plastic case
– Dimensions (W × H × D): 187 × 32 × 124 mm, desktop case
– Weight: 0.3 kg

[1] *Optional.*
Current FW version 3.1.20.

Use case

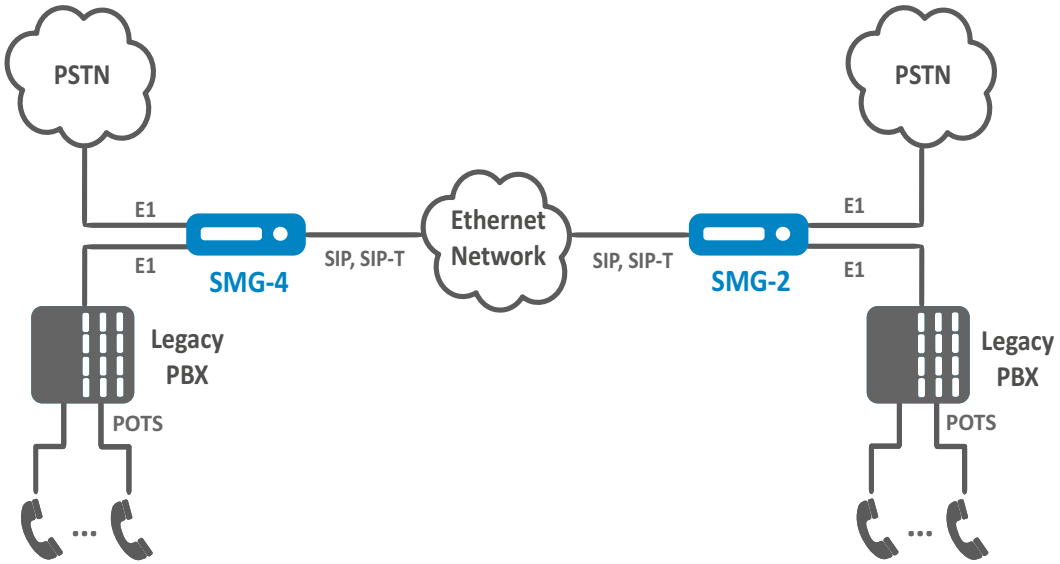
Protocol converter

A wide range of supported TDM and VoIP protocols allows using SMG-2 and SMG-4 to coordinate signalling and media streams in different directions:

- VoIP ⇆ TDM
- TDM ⇆ VoIP
- TDM ⇆ TDM

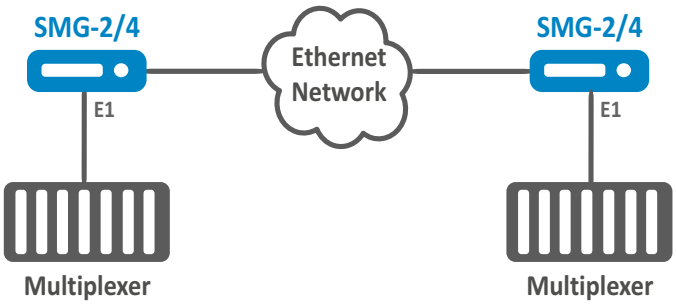
Trunking gateway

Trunking VoIP gateways SMG-2 and SMG-4 are used for number capacity transfer from TDM to IP PBX, as well as for interfacing with PSTN.



Semi-permanent connection

SMG-2 and SMG-4 allow organising transit of E1 stream channels via Ethernet network using semi-permanent connection.



Ordering information

Name	Description
SMG-2	SMG-2 trunking gateway: 1 port of E1 (RJ-48), 1 additional port of E1 (optional), 64 VoIP channels, 1 port of 10/100/1000BASE-T (RJ-45), 1 port of USB 2.0
SMG-4	SMG-4 trunking gateway: 4 ports of E1 (RJ-48), 128 VoIP channels, 1 port of 10/100/1000BASE-T (RJ-45), 1 port of USB 2.0
Related software	
EMS-SMG-CPE	EMS-SMG-CPE option of ELTEX.EMS system for ELTEX network elements management and monitoring: 1 network element SMG-2/SMG-4
SMG-ADD-E1	SMG-ADD-E1 option to enable one additional E1 port on the SMG-2 trunking gateway
SMG-SPC	SMG-SPC option to enable semi-permanent connection functionality
Licenses	
SMG-SPC	SMG-SPC license for activating semi-persistent connections functionality

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About Eltex

ELTEX Enterprise is a leading Russian developer and manufacturer of communication equipment with 30 years of history. Complete solutions and their seamless integrability into the Customer's infrastructure are the priority growth areas of the company.