

- IP-PBX with VAS and LI support
- high quality of voice processing
- up to 16 E1 flows (CETRONICS-36)
- up to 768 VoIP channels
- scalable 1U platform
- operator's class reliability



SMG-1016M platform can be used as a trunking gateway for converting signal and media flows of TDM and VoIP networks, IP-PBX with supporting VAS functions as well as be used as a universal solution for building new-generation research communication networks. Wide functionality, strict compliance with the standards and high reliability of the operator's class help to handle a greater number of tasks coming up with the operators and service providers on the basis of SMG-1016M.

Scalability

SMG-1016M provides a possibility of uniform distribution of investments for scaling within the entire period of project implementation. The gateway supports up to 16 E1 flows (SS7, PRI) and up to 768 VoIP channels.

Operator's class reliability

The up-to-date Marvell processor, uniform load distribution between sub-modules, backed-up power supplies, ensure high level of SMG-1016M platform fail-safe behaviour with automatic switchover to a standby element in case of failure of any system sub-module as well as power module.

Functional compatibility

Strict conformity to the requirements of up-to-date protocols, recommendations and standards ensure 100% functional compatibility of SMG-1016M with different equipment: digital PBX, IP-PBX, Softswitches, VoIP gateways, SIP phones, software SIP clients, etc.

Transcoding media flows

The hardware transcoding based on MediaCodecs Mindspeed Technologies helps coordinate media flows with different VoIP codecs.

RADIUS routing

Intellectual call routing based on the billing system responses according to RADIUS protocol will help build flexible rules for calls processing.

Intellectual protection of IP networks

The intellectual protection against unauthorized external connections of SIP users (fail2ban, iptables, white/blacklists, etc.) also via protocols http/telnet/ssh has been implemented in trunking gateway SMG-1016M. In order to provide additional protection when connecting to public IP networks, a compatibility with the session border controllers (e.g., SBC-1000) performing the functions of internet network screens for VoIP networks.

IP-PBX with VAS support

Additional options for SMG-1016M gateway allow using it as a full-function IP-PBX up to 2 000 SIP users with supporting a wide set of Value Added Services. The IP-PBX ECSS-10 software module is intended for fast deployment of VoIP communications node with minimal capital expenses (CAPEX).

Functional Capabilities

Calls management

- Interaction with STUN-server via SIP interface
- Routing by phone number of CdPN and CgPN
- Phone modification before and after routing
- Recording conversations by parameters¹
- Several numeration plans
- Limitation of lines' amount
- Service mode setting
- Switching off trunk group
- Call management via RADIUS¹
- Direct bypass of trunk-group
- SORM support¹
- Prefix for several trunk-groups
- Interactive voice menu (IVR)¹
- Configuration upload and download by one file

Voice codecs

- G.711 (a-law, μ -law), G.729 (A/B), G.723.1, G.726 (32 kbps)

Fax

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

Quality enhancement

- VAD (Voice Activity Detection)
- CNG (Comfort Noise Generation)
- AEC (Acoustic Echo Cancellation, G.168)

Quality of Service (QoS)

- Sets DiffServ Value and 802.1p priority for SIP and RTP packets
- Dynamic and static programmable jitter buffer
- Based on bandwidth

DTMF

- INBAND, RFC 2833, SIP INFO

Billing

- Recording of billing information to CDR file, parallel recording of CDR file to HDD-disc and remote FTP-server
- Radius Accounting
- Different billing system support: Hydra Billing, LANBilling, PortaBilling, NetUP, BGBilling and other system integration

Flexibility

- Configuration loading/uploading to one file
- Several network interfaces creation for telephony (SIP, RTP) with different IP-addresses
- Work with several numeration plans
- Signal channel SS7 reservation
- Control of telephone connection duration (RTP or RTCP presence)

TDM protocols

- Ss7
- PRI (Q.931)
- Q.699
- V5.2 LE²
- V5.2 AN²

VoIP control protocols

- SIP, SIP-T/SIP-I
- H.323¹
- SIGTRAN²
- H.248²

Capacity

- up to **768** voice channels
- up to **16** E1 trunks (CENTRONICS-36 connector)
- Allowed calls per second - 14 cps

Interfaces

- 2 x 1000Base-X ports (SFP)
- 3 x 10/100/1000Base-T ports (RJ-45)
- E1 (2 x CENTRONICS-36 connectors)
- 2 x SATA ports (SSD)

Monitoring and management

- Monitoring of E1 channel and VoIP in web-interface
- Alarm logging with saving logs to syslog-server
- Keeping tracings on SSD-storage
- Informing about accidents, errors by SNMP

Security

- Black and White lists of IP-addresses for registration
- Demonstration of all attempts to get access
- Automatic IP-Address locking after unsuccessful registration attempts and/or via protocols http/telnet/ssh
- List of permitted IP-addresses for management access
- Accesses rights admin/user
- IP-address source control of RTP-flow
- Authentication on RADIUS-server and SIP registrar
- Digest-authorization

Expanded function SIP/SIP-T/SIP-I

- Registration and authentication to 2000 SIP users¹
- Value Added Services support for 1000 users¹
- Interaction between SIP and SIP-T/SIP-I
- SIP-trunks registration
- Upper Registration


Value Added Services (VAS)¹

- Call Forwarding
 - Call Forwarding Outside System (CFOS)
 - Call Forwarding No Reply (CFNR)
 - Call Forwarding Unconditional (CFU)
 - Call Forwarding Busy (CFB)
- Call Transfer
- Music on Hold (MOH)
- Call Hold
- Call Hunt
- Call Pickup
- Interactive voice response (IVR)
- Busy Lamp Field

¹Optional

²Isn't supported in 3.5.0 software current version

Ordering information

| Product name | Description | Image |
|---------------------------------------|---|---|
| SMG-1016M | Trunking Gateway SMG-1016M: 4 slots for submodules M4E1, 6 slots for submodules SM-VP-M300, 2 slots for power modules PM160-220/12 and PM75-48/12 |  |
| Modules for platform SMG-1016M | | |
| SM-VP-M300 | Submodule SM-VP-M300 with support up to 128 VoIP channels (G.711) | |
| M4E1 | Submodule M4E1 with support up to 4 E1 flows | |
| SSD-8Gb | SSD-storage for SMG-1016M, 8 Gb, form-factor: 44x30 mm, 22P/90D | |
| PM160-220/12 | Power module PM160-220/12, 220V AC, 150W | |
| PM75-48/12 | Power module PM75-48/12, 48V DC, 75W | |
| Cables | | |
| UTP-18-X | UTP-18-X cable with connectors CENTRONICS-36 (X=4, 6, 12, 20, 30) | |
| Options for SMG-1016M | | |
| SMG1-PBX-2000 | SMG1-PBX-2000 Option for ECSS-10 activation for 2000 SIP-registrations with BLF support on SMG-1016M | |
| SMG1-VAS-500 | SMG1-PBX-2000 expanded Option: SMG1-VAS-500 Option for VAS activation for 500 users on SMG-1016M | |
| SMG1-REC | SMG1-REC Option CallRecording activation on SMG-1016M | |
| SMG1-H323 | SMG1-H323 Option for H.323 protocol (without function Gatekeeper) on SMG-1016M | |
| SMG1-RCM | SMG1-RCM Option for Radius CallManagement activation on SMG-1016M | |
| SMG1-VNI-40 | SMG1-VNI-40 Option for expanding of VLAN-interfaces amounts on SMG-1016M till 40 | |
| SMG1-REC | SMG1-REC Option for CallRecording on SMG-1016M | |
| SMG1-CORP | SMG1-CORP Option for ECSS-10 module activation for 500 SIP-registrations with VAS without SORM support on SMG-1016M | |

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About EltexAlatau

EltexAlatau company is one of the first communication equipment manufacturers in Kazakhstan established in 2012. The main focus of the enterprise is a set of solutions and the opportunity of their seamless connection to the customer's infrastructure.