

- Scalable 1U platform
- High quality voice processing
- Carrier-grade reliability
- Up to 768 VoIP channels
- Up to 16 streams E1
- Support for up to 2 embedded 8 GB SSDs



The **SMG-1016M platform** can be used as a digital gateway for connecting signal and media flows of TDM and VoIP networks, IP PBX with support for VAS functions, and can also act as a universal solution for building new generation infocommunication networks. The wide function set, strict compliance with requirements and standards, as well as carrier-grade reliability allow service providers and carriers to solve most part of their objectives on the basis of SMG-1016M.

#### Scalability

SMG-1016M is a beneficial investment in the future of your project due to its scalability. The gateway supports up to 16 E1 streams (SS7, PRI, V5.2) and up to 768 VoIP channels.

#### Carrier-grade reliability

Uniform load distribution between submodules, redundant power supplies, as well as the use of modern technologies based on parallel computing provide a high level of fault tolerance of the SMG-1016M trunk gateway with automatic switching to a backup submodule in the event of any system submodule failure or the power source.

#### Functional compatibility

The strict compliance with requirements of up-to-date protocols, recommendations and standards provides functional compatibility of SMG-1016M with a variety of equipment: digital PBX, IP PBX, Softswitch, VoIP gateways, , software SIP clients, etc.

#### Media streams transcoding

The hardware transcoding helps to negotiate media streams with different VoIP codecs which are used in up-to-date networks.

#### RADIUS routing

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

#### Calls management

- Interaction with STUN-server on the SIP interface
- Routing based on called number (CdPN) and/or calling number (CgPN)
- Routing by the access category
- Number modifications before and after routing
- Call recording according to number mask and dialplan<sup>1</sup>
- Use of multiple dialplans
- Subscriber lines restriction
- Subscriber service mode settings
- Trunk group cut-off
- Call management via RADIUS<sup>1</sup>
- Direct forwarding for trunk groups
- Prefix for several trunk groups
- Interactive Voice Response (IVR)<sup>1</sup>
- Uploading/downloading of configuration as a single file
- Lines limiting for SIP interface
- Egress and ingress lines restrictions for a subscriber
- Ingress load limiting CPS (calls per seconds) for a trunk group

#### Voice codecs

- G.711 (a-law,  $\mu$ -law), G.729 (A/B), G.723.1, G.726 (32 Kbps)

#### Video processing

- Video stream transmitting in the Video Offroad mode

#### Fax transmission

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

#### Voice standards

- VAD (Voice Activity Detection)
- CNG (Comfort Noise Generation)
- AEC (Acoustic Echo Cancellation, G.168 recommendation)
- AGC (Automatic Gain Control)

#### Quality of service (QoS)

- Diffserv and 802.1p priorities assignment for SIP and RTP
- Dynamic and static jitter buffer
- Ingress/egress traffic rate limiting

#### DTMF

- INBAND, RFC 2833, SIP INFO, SIP NOTIFY transmission

#### Flexibility

- Multiple network interfaces creation for telephony (SIP, RTP) with different IP addresses
- Operation with multiple numbering plans
- Signal SS7 channel redundancy
- Voice activity control (by the presence of RTP or RTCP)– Individual routing for streams of a single SS7 linkset

#### TDM protocols

- SS7
- PRI (Q.931)
- Q.699 (PRI and SS7 interaction)
- V5.2 LE<sup>1</sup>
- V5.2 AN<sup>1</sup>

#### VoIP protocols

- SIP, SIP-T/SIP-I, SIP-Q
- H.323<sup>1</sup>
- SIGTRAN (M2UA, IUA)<sup>1</sup>
- H.248<sup>2</sup>

#### Capacity

- Up to 768 VoIP channels
- Up to 16 E1 streams (CENTRONICS-36) – Maximum load intensity 14 cps

#### Interfaces

- 2 × 1000BASE-X ports (2 slots for SFP modules)
- 3 × 10/100/1000BASE-T ports (RJ-45)
- E1 (2 × CENTRONICS-36 connectors) (1x C4E1)
- 1 USB 2.0 port
- 1 console port (RS-232)
- 1 × SM-VP-M300

#### Management and monitoring

- E1 and VoIP channels monitoring in web interface
- Management of channels and SS7 links in web interface
- Alarm logging with the opportunity to save entries to syslog server
- Storing traces on SSD and USB drives
- Emergency notification through SNMP
- Automatically enable logging after the gateway restart
- Monitoring of web interface active user sessions
- Busy Lamp Field
- Conference add-on (CONF)
- Conference for a list of subscribers
- 3-Way conference
- Intercom
- Paging
- Outgoing calls restrictions (Out Calls Restrict)
- Egress communication by password (RBP)
- Password activation (PWD ACT)
- Password reset (PWD)
- Voice mail
- One Touch Record
- Do Not Distrurb (DND)
- Blacklist
- Anonymous call
- Reject anonymous calls – Reminder

#### Advanced SIP/SIP-T/SIP-I functionality

- Registration and authentication of 2,000 SIP subscribers<sup>1</sup>

## Physical specifications and environmental parameters

|                             |                                                                                                                                |                                     |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Operating temperature range | from 0 to +40 °C                                                                                                               |                                     |
| Relative humidity           | up to 80 %                                                                                                                     |                                     |
| Noise level                 | from 44 to 60 dB                                                                                                               |                                     |
| Supply voltage              | DC: 36–72 V<br>AC: 100–240 V, 47–63 Hz<br>Power options:<br>– 1 AC/DC power supply;<br>– 2 hot-swappable AC/DC power supplies. |                                     |
| Power modules               | DC, power module PM100-48/12 100 W                                                                                             | AC, power module PM160-220/12 160 W |
| Power consumption           | no more than 50 W                                                                                                              |                                     |
| Dimensions (W × H × D)      | 430 × 45 × 260 mm                                                                                                              |                                     |
| Form factor                 | 19", 1U                                                                                                                        |                                     |
| Weight                      | 3.2 kg                                                                                                                         |                                     |