SMG4016/4032
Wireless VoIP Gateway

Brief Introduction:

Synway SMG4016/4032 Wireless Gateway, the latest SMG4000 series members, could be compliant with a variety of wireless/mobile protocols (2G/3G/4G), enabling interconnection between GSM/CDMA/WCDMA/LTE network and VoIP network smoothly and safely. It is able to bridge wireless network with IP networks efficiently, regarding to the high-demanding user requirements. SMG4000 adapts self-propelled SIM card slots, advanced built-in VoIP processors and wireless modules, and helps enterprises and SPs launch diverse cost-efficient and flexible Wireless-to-IP communication systems. SMG4000 could also be applied into a range of systems, including remote billing and charge, Mobility PBX, PSTN backup lines, VoIP localization, SMS platform and more.

Key Features and Benefits:

- **DSP-based Algorithm**
  DSP-enabled voice optimization to assure crystal voice quality and maximize bandwidth efficiency; High-speed response and connectivity in the extreme network environments, with better run efficiency; Telco-grade reliability and continuous high performance in fully loaded capacity and in the long run;

- **High security**
  High security and privacy for users via automatic-exchange of different SIM cards and Networks. In specific environments, SMG4016/SMG4032 could use and activate multiple SIM cards circularly, improve system security, make full use of bandwidth, and increase ROI.

- **Complete Protocols Range**
  Support standard SIP protocols, and could be used worldwide; Support both 2G/3G/4G wireless network (in different versions), including both GSM/CDMA/LTE and More

- **High Voice Optimization Capability**
  Adopt Synway’s homegrown voice optimization technologies to ensure crystal clear communication, including DSP-based 128mc echo cancellation

- **High Flexibility and Scalability**
  Could be configured from 16 or 32 Ports of Wireless-to-IP transmission, and support a diversity of wireless networks in a single system

- **User-friendly GUI**
  Easy-to-use service Web based UI configuration and management tools could help accelerate service deployment and simplify platform management

- **High Interoperability with Terminals**
  Compliant with all brands of terminal mobile devices and a complete range of SIP trunking worldwide, support auto-provision in complex network environment

- **Telco-Grade Reliability**
  Adopts telco-grade standards and components to design and manufacture, and certified and approved by most telecom operators worldwide
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Functional Description

- **Basic Features:**
  - GSM: 850/900/1800/1900MHz
  - CDMA: 800MHz
  - UMTS: 850/900/1900/2100MHz
  - LTE 4G: FDD LTE, TDD LTE
  - Multiple voice encoding formats supported
  - SMS CODEC: ASCII/UCS2
  - Open and programmable API
  - PIN management
  - Call time restriction: SIM Card/Single Call
  - Operator locking
  - BCCH management
  - Call hold
  - Call transfer

- **Voice**
  - Silence suppression and detection
  - CNG (Comfort Noise Generator) support
  - VAD (Voice Activity Detection) support
  - Echo cancellation (G.168), up to 128ms
  - Self-adaptive dynamic buffering
  - Call progress tone generation
  - AGC (Automatic Gain Control) support

- **Protocol**
  - SIP V2.0 RFC3261
  - SDP RFC2327
  - Session Timer RFC4028
  - RTP/RTCP RFC3551
  - SIP registration
  - SIP trunk (Point-to-Point)
  - SIP trunk group
  - Ringback (Immediate/normal)
  - SIP/GSM release cause configurable
  - DNS SRV/A query
  - Out-of-stack agent
  - DTMF mode: Signal/RFC2833
  - NAT traversal
  - Dynamic NAT, Static NAT, STUN

- **Physical Interface**
  - SIM Card Socket: 64/128-port
  - Ethernet interface: RJ45, 2 ETH, 10/100M Base
  - CONSOLE: RJ45, RS232, 115200bps
  - Antenna interface: SMA
  - Status indicator: PWR, RUN, ALM, Channel state, Signal strength, ACT per network, LINK status.
  - Reset button

- **Network Protocol**
  - IP v4, IP v6, UDP/TCP, PPPoE, DHCP
  - FTP/TFTP ARP, RARP, NTP
  - HTTP, Telnet

- **Management**
  - Configuration management based on WEB
  - Configuration backup/restore
  - Interface in Chinese/English
  - Firmware upgrade via HTTP/TFTP
  - Password modification for WEB sign-in
  - Factory settings restore
  - CDR and tracking information output
  - Syslog
  - Ping and Tracet tests based on WEB
  - Transport Protocol Count: TCP, UDP, RTP
  - VoIP Call Count
  - PSTN Count: ASR, ACD, PDD
  - Voice loopback test
  - IVR Customizable
  - System Log
  - Centralized cloud-platform integrated management

**Typical Application:**

![Diagram of SMG4000 GSM Gateway integration with PSTN and LAN](image)
**SMG4016/4032 Wireless VoIP Gateway**

**Functional Description**

- **Dimensions & Weight**
  - 440×44×200mm
  - Net: 3.5kg

- **Environment**
  - Operating temperature: 0°C — 55°C
  - Storage temperature: -20°C — 85°C
  - Humidity: 8% — 90% non-condensing
  - Storage humidity: 8% — 90% non-condensing

- **LAN**
  - Amount: 2 (10/100 BASE-TX (RJ-45))
  - Self-adaptive bandwidth supported
  - Auto MDI/MDIX supported

- **Console Port**
  - Amount: 1 RJ-45 (RS-232)
  - Baud rate: 115200bps
  - Data bits: 8 bits
  - Stop bit: 1 bit
  - Parity unsupported
  - Flow control unsupported

- **Power Requirements**
  - Input voltage: DC 12V ± 10%
  - Input current: ≥3A

- **Signaling Protocol:**
  - SIP V2.0 RFC3261

- **Network Protocol**
  - IP v4, IP v6, UDP/TCP, PPPoE, DHCP
  - FTP/TFTP ARP, RARP, NTP
  - HTTP, Telnet

- **Audio Encoding & Decoding**
  - G.711A 64 kbps
  - G.711U 64 kbps
  - G.729 A/B 8 kbps
  - G.723 5.3/6.3 kbps
  - G.722 64 kbps
  - AMR 4.75 kbps
  - iLBC 13.3/15.2 kbps

- **Sampling Rate**
  - 8kHz

- **Wireless Feature**
  - Frequency band:
    - GSM: 850/900/1800/1900MHz
    - SMS CODEC: ASCII/UCS2

<table>
<thead>
<tr>
<th>Model</th>
<th>Frequency</th>
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<tbody>
<tr>
<td>SMG4016-16G/SMG4032-32G</td>
<td>GSM:850/900/1800/1900MHz</td>
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<tr>
<td>SMG4016-16C/SMG4032-32C</td>
<td>CDMA:800MHz</td>
</tr>
<tr>
<td>SMG4016-16W/SMG4032-32W</td>
<td>GSM:900/1800MHz, UMTS:900/2100MHz</td>
</tr>
<tr>
<td>SMG4016-16WA/SMG4032-32WA</td>
<td>GSM:850/900/1800/1900MHz, UMTS:850/1900MHz</td>
</tr>
<tr>
<td>SMG4016-16WT/SMG4032-32WT</td>
<td>GSM:850/900/1800/1900MHz, UMTS:850/2100MHz</td>
</tr>
<tr>
<td>SMG4016-16LC/SMG4032-32LC</td>
<td>FDD LTE:B1/B3, TDD LTE:B38/B39/B40/B41</td>
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<tr>
<td></td>
<td>TDSCDMA:B34/B39, WCDMA:B1, CDMA2000:BC0</td>
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<tr>
<td></td>
<td>GSM:1X/EVD, 900/1800MHz</td>
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<tr>
<td></td>
<td>WCDMA:B1/B5/B8, GSM:B3/B8</td>
</tr>
<tr>
<td>SMG4016-16LV/SMG4032-32LV</td>
<td>FDD LTE: B4/B13</td>
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As a major manufacturer and supplier of communication products and solutions, Synway specializes in providing superior Multimedia Gateway, Integrated Multimedia Switch, Telephony Hardware in use for Telecom communications. Since 1995, over 3,000 service providers, software developers and system integrators have deployed Synway's offerings to deliver a broad range of TDM and VoIP-based applications worldwide, including Unified Communications, SIP Trunking, Call Center, Mobile VAS, Faxing, Conferencing, Call Recording as well as Asterisk-based Open Source Applications. With dedicated teammates and well-known premium services, Synway makes consistent efforts to deliver partners with a variety of customizable, high-performance and cost effective voice communications products.