

# SMG 1000-D4/D8 FXS/FXO VoIP Gateway

With a simple and economical way to help legacy telephone, fax machine and PBXs interconnect with IP network, SMG1000 analog media gateway enables call center and multi-branch enterprises to process powerful, versatile and efficient VoIP solutions for unparalleled cost advantage.

SMG1000 Analog Gateways allow for a well-planned, phased migration to an IP network, making the gateways an easy solution for enterprises looking to enhance their legacy PBX equipment with new VoIP access and applications. Connected between a PBX or an Analog and a LAN, the SMG1000 Gateways convert analog PSTN messages into a format suitable for transmission over standard IP networks.



Key Features	Values
Voice over Internet Protocol (VoIP)	Supports SIP per RFC 3261. Uses Real-time Transport Protocol/Real-Time Control Protocol (RTP/RTCP) for delivery of voice over the LAN or WAN
IP security	Supports HTTPS for web interface
Enhanced voice processing	Supports a variety of compression algorithms, including G.711 A-law and $\mu$ -law, G.729AB
T.38 Fax over Internet Protocol (FoIP)	Transcode fax from T.30 fax protocol (supporting V.17) to T.38 for transmission over a packet network
Hot swap	Allows gateway units to be added or removed without affecting other gateway units
Web server interface	Each gateway unit is delivered with a web server interface, allowing configuration and software upgrades via a web browser

# SMG 1000-D4/D8 FXS/FXO VoIP Gateway



## Key Features and Benefits

- **Mini-sized**
- **FXS/FXO TO SIP**
- **FoIP Supported(T.30 to T.38)**

### • Functional Description

Designed for voicemail and unified messaging applications, SMG analog Gateways have a 10/100 Base-T Ethernet connection for connecting legacy PBX to a WAN/LAN. The analog loop start functionality supports integration via in-band signaling (DTMF or FSK) or serial protocols. The SMG1000 Gateways provide a simple, cost-effective transition to voice and data convergence for enterprises with PBXs. Connected externally, they offer an IP solution that works with current legacy equipment. They support SIP-based applications as well as T.38 for fax transmissions over IP (FoIP).

### • Configurations

The SMG1000 Gateways can be used to connect IP telephones to a legacy PBX, integrate network-hosted applications with the PBX, extend the PBX to branch offices, and integrate various voice and call processing capabilities in an enterprise LAN or WAN environment. Using exclusive PBX network interfaces, the SMG1000 Gateway appliances provide exceptional IP to PBX integration capabilities to protect an investment in legacy telecom equipment.

### • Call Routing

The SMG1000 Gateways route calls from the switched network to a VoIP destination on the IP network. Conversely, it routes calls from the IP network through a switch port to a destination telephone number on the switched network. The SMG1000 Gateways support the following call routing options:

- TDM to IP or IP to TDM
- IP load balancing
- IP fault tolerance
- Compatible with general FXS/FXO lines, and a variety of popular PBX manufacturers (Digital PSTN lines compliance would be available)

Protects investment in legacy telecommunications equipment and allows a controlled migration to IP technology.

- Developed and tested in PBX lab and optimized for use in an Enterprise environment

Ideally suited for Enterprise Unified Messaging applications.

- Support for IP load balancing and IP fault tolerance

Allows the ability for inbound (TDM-to-IP) calls to round-robin between available media servers.

- Supports configuration via serial, telnet, and a web browser including context-sensitive help

Easy to install, configure, debug, and maintain.

## Technical Specifications:

- **PBX Interface**

Number of ports: 4/8 FXS/FXO configurable

Connectors: 4/8 shielded female RJ-11 jacks

\*Use multiple gateway units for higher port counts

- **Network Features**

Network interface: 10/100 Base-T Ethernet LAN port

connector: 2 shielded female RJ-45 Jack for LAN

Static IP, PPPoE, DHCP Client

IPv4, IPv6

Static/dynamic ARP

Traffic Shaping

DIFFServ, ToS

- **VoIP Protocols**

TLS/SRTP

OpenVpn

SIP V2.0 (RFC 3261, 3262, 3264)

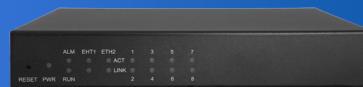
ARP/RARP (RFC 826/903)

SNTP (RFC 2030)

DHCP/PPPoE

RTP/RTCP for delivery of voice

# SMG 1000-D4/D8 FXS/FXO VoIP Gateway



- *FoIP Protocol*

T.38 FoIP : transcode fax from T.30 fax protocol(supporting V.17)modulation schemes, to T.38 for transmission over a packet network

- *Voice Support*

G.711  $\mu$ -Law and A-Law, G.723.1, G.729AB

Silence suppression with comfort noise

G.168 automatic echo cancellation

Call Progress Analysis (CPA), including Positive Voice Detection, Positive Answering Machine Detection (PAMD), DTMF detection, and fax tone detection

Comfort Noise Generation(CNG)

DTMF mode: Signal/RFC2833/INBAND

- *Quality of Service*

Type of Service (ToS)

IP precedence

- *Configuration and Management*

Web UI for instant management and status monitoring

Telnet

- *Call Routing*

From IP to PSTN or from PSTN to IP

User configuration list of VoIP endpoints

IP load balancing

IP fault tolerance

- *IP Security*

HTTPS for web interface

- *Power Requirements*

Line voltage 100 VAC to 240 VAC

Frequency 47 Hz to 63 Hz

- *Physical Dimensions*

## SMG1000-D4 (4 Ports FXS/FXO VoIP Gateway )

L\*W\*H 140(mm)\*100(mm)\*30(mm)

Weight Approximately 0.44lbs(about 0.2kg)



## SMG1000-D8 ( 8 Ports FXS/FXO VoIP Gateway )

L\*W\*H 186(mm)\*108(mm)\*30(mm)

Weight Approximately 1.21lbs(about 0.55kg)

- *Environment*

Operating temperature range

0°C to +45°C,8-90% relative humidity non-condensing

Storage temperature range

-20°C to +85°C,8-90% relative humidity non-condensing

- *Approvals and Compliance*

For information about RoHS compliance and other approvals, please contact Synway directly.

- *EMC/EMI*

Compliant with most international standards. For compliance documents, please contact Synway's sales representatives.

- *Safety*

Compliant with most international standards, please ask Synway or its sales representatives worldwide. Synway would comply all new safety standard to for different regions around the world while needed.

- *Telecom Approvals*

(Partially approved)Compliant with most international standards, please ask Synway or its sales representatives worldwide.

- *Reliability/Warranty*

Estimated MTBF Five Years.



# SMG 1000-D16/D24/D32 FXS/FXO VoIP Gateway

With a simple and economical way to help legacy telephone, fax machine and PBXs interconnect with IP network, SMG1000 analog media gateway enables call center and multi-branch enterprises to process powerful, versatile and efficient VoIP solutions for unparalleled cost advantage.

SMG1000 Analog Gateways allow for a well-planned, phased migration to an IP network, making the gateways an easy solution for enterprises looking to enhance their legacy PBX equipment with new VoIP access and applications. Connected between a PBX or an Analog and a LAN, the SMG1000 Gateways convert analog PSTN messages into a format suitable for transmission over standard IP networks.



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Hot swap	Allows gateway units to be added or removed without affecting other gateway units
Web server interface	Each gateway unit is delivered with a web server interface, allowing configuration and software upgrades via a web browser

# SMG 1000-D16/D24/D32 FXS/FXO VoIP Gateway



## Key Features and Benefits

- **Compact 1U 16/24/32 Ports (FXS/FXO-SIP)**
- **FoIP Supported(T.30 to T.38)**

- [Functional Description](#)

Designed for voicemail and unified messaging applications, SMG analog Gateways have a 10/100 Base-T Ethernet connection for connecting legacy PBX to a WAN/LAN. The analog loop start functionality supports integration via in-band signaling (DTMF or FSK) or serial protocols. The SMG1000 Gateways provide a simple, cost-effective transition to voice and data convergence for enterprises with PBXs. Connected externally, they offer an IP solution that works with current legacy equipment. They support SIP-based applications as well as T.38 for fax transmissions over IP (FoIP).

- [Configurations](#)

The SMG1000 Gateways can be used to connect IP telephones to a legacy PBX, integrate network-hosted applications with the PBX, extend the PBX to branch offices, and integrate various voice and call processing capabilities in an enterprise LAN or WAN environment. Using exclusive PBX network interfaces, the SMG1000 Gateway appliances provide exceptional IP to PBX integration capabilities to protect an investment in legacy telecom equipment.

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- IP fault tolerance

- [Compatible with general FXS lines, and a variety of popular PBX manufacturers \(Digital PSTN lines compliance would be available\)](#)

Protects investment in legacy telecommunications equipment and allows a controlled migration to IP technology.

- [Developed and tested in PBX lab and optimized for use in an Enterprise environment](#)

Ideally suited for Enterprise Unified Messaging applications.

- [Support for IP load balancing and IP fault tolerance](#)

Allows the ability for inbound (TDM-to-IP) calls to round-robin between available media servers.

- [Supports configuration via serial, telnet, and a web browser including context-sensitive help](#)

Easy to install, configure, debug, and maintain.

## Technical Specifications:

- [PBX Interface](#)

Number of ports: 16/24/32 FXS configurable

Connectors: 16/24/32 shielded female RJ-11 jacks

\*Use multiple gateway units for higher port counts

- [Network Features](#)

Network interface: 10/100 Base-T Ethernet LAN port

connector: 2 shielded female RJ-45 Jack for LAN

Static IP, PPPoE, DHCP Client

IPv4, IPv6

Static/dynamic ARP

Traffic Shaping

DIFFServ, ToS

- [VoIP Protocols](#)

TLS/SRTP

OpenVpn

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DTMF mode: Signal/RFC2833/INBAND

- *Quality of Service*

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- *Configuration and Management*

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User configuration list of VoIP endpoints

IP load balancing

IP fault tolerance

- *IP Security*

HTTPS for web interface

- *Power Requirements*

Frequency 47 Hz to 63 Hz

- *Physical Dimensions*

High 1.73in(44mm)

Wide 17.32in(440mm)

Deep 7.95in(202mm)

Weight Approximately 5.95lbs(about 2.7kg)

- *Environment*

Operating temperature range

0°C to +45°C,8-90% relative humidity non-condensing

Storage temperature range

-20°C to +85°C,8-90% relative humidity non-condensing

- *Approvals and Compliance*

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- *EMC/EMI*

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- *Telecom Approvals*

(Partially approved)Compliant with most international standards, please ask Synway or its sales representatives worldwide.

- *Reliability/Warranty*

Estimated MTBF Five Years.



# UNIWAY2200 64/96/128 PORTS FXO/FXS VoIP Gateway



In hybrid VoIP & TDM era with diverse and rapidly-growing needs of unified communications and services, Synway UNIWAY VoIP Gateway adopts the latest modular architecture with built-in server, and opens a new milestone to maximize VOIP and TDM network's value for SP and application developers. One of major advantage of UNIWAY is to reduce time to market and introduce innovative applications more efficiently and effectively. Tailored to satisfy diverse customers' needs, UNIWAY, with its open and standardized format, enables users to develop a range of applications.

The hybrid architecture of UNIWAY allows for standard protocols between different network components and ensures high independence and interoperability, which better caters to sophisticated communications. Also, in the Mobile Internet Era, UNIWAY brings about efficiency and unparalleled cost advantages for developers by optimizing R&D and integrating an array of data, voice, video and other applications.

## Key Features and Benefits

- Flexible configuration for any network

Compliant with FXO/FXS interface: support various multimedia processing capability (conferencing, fax, compression and SuPerForm™ echo cancellation for voice enhancement and an array of Protocols.

- Compliant with any IP-Based applications

With optional inbuilt industrial server, UNIWAY series are compliant with any IP-based applications; it also even supports any category of third party software, including UC, IP-PBX, Contact Center and more. In legacy PSTN network, UNIWAY could converge applications via internal modules.

- Low to High Scalability

Modular architecture ensures flexibility and expandability from low density and high density. Modular design allows for easy configurations, system upgrading or general maintenance.

- Multimedia Convergence

Adopt 1000M-Ethernet switching chipset, UNIWAY's media stream exchanges in IP packets, and access to soft switching system via Media Gateway Controller, ensuring high-level applications are streamlined.

- Diverse Media Resources

Support high-capacity voice playback and Codecs, conferencing, faxing; Support T.38/T.30; optimized for IP-PBX, IVR and ACD applications, with EXT IVR server or GUI management.

## UNIWAY2200 64/96/128 Ports FXO/FXS VoIP Gateway



- Carrier-Grade Reliability

Special power system with standby redundancy; advanced cooling system to reassure long-standing robustness; special air cleaner to protect against dust accumulation inside chassis; inside temperature control and alert system; No need to change wiring when changing functional modules.

### Technical Specification

*Functional module available:*

UMG-1016: 16\*FXO, 16\*FXS

### Multimedia & Signaling

*Voice Processing*

CODECs: support A-law,  $\mu$ -law, PCM8, PCM16, IAM-ADPCM, VOX, MP3, GSM, G.729A/B, G.722, G.723, iLBC etc;

Voice file format: support standard WAV format file and any non-format file;

Support conversion among various (de)coding formats;

Support real-time file replay from RAM and server;

Support real-time recording to RAM and server (Dynamic Storage);

Support DTMF and FSK transmission/reception;

Support (standard/self-defined) tone transmission and detection;

Support R2 transmission and reception;

Support Barge-in function;

Support simultaneous recording/replay;

Compliant with G.168 echo cancellation, with up to 128ms tail length;

Support AGC/ALS;

Support Answer Machine Detection;

Support voice call recording (on-demand or permanent);

Support full-duplex recording and replay;

All voice channels could be converted to conferencing channels;

Two voice channels could be converted to a fax session on demand;

### VoIP Resources

*RTP Protocol*

Compliant with RTP/RTCP protocol (RFC3551, RFC3552);

Coding/Decoding: G.711(A-law/ $\mu$ -law)/GSM/G.729A;

Self-adaptive echo cancellation (voice enhancement);

RTP DTMF loading (RFC2833);

Support NAT/Firewall monitoring and tunneling;

*SIP Protocol*

Supported SIP standards:

IETF RFC 3261 (SIP: Session Initiation Protocol);

IETF RFC 2327 (SDP-Session Description Protocol);

IETF RFC 3550 and 3551 (RTP/RTCP);

IETF RFC 2833 (DTMF);

*SIP Protocol Stacks*

Support signaling transmitting over UDP;

Support call holding;

Support Digest Authentication;

Intelligent URL Scheme analysis algorithm;

Support INVITE/REINVITE in calling processing;

Support VIA rPort setting (for NAT/Firewall tunneling);

Support REFER call forwarding;

Allow DTMF tone transmission/detection in three modes: inner-band/SIP-INFO/out-of-band (RFC2833);

Support REGISTER messaging and authentication;

Inner multiple-threads mechanism;

Support SIP server;

Support UDP "pulse-holding" mechanism;

Support INFO messaging;



## UNIWAY2200 64/96/128 Ports FXO/FXS VoIP Gateway



### *Conference/Fax resource*

Support distributed conferencing mode, with conferencing resource in each voice channel;

Fully support SIP-based Fax T.38 standard;

Support V29/V27/V17 standards, with faxing rate up to 33.6Kbps (automatically slowing down);

Support ECM (Fax/Error Correction Mode) for reception/transmission (optional for EXM/non-ECM mode);

Support TIFF files input in MH/MR/MMR format and transmission/reception in MH, MR format;

### *Network Interface*

E1 interface: Compliant with G.703, including 75Ω unbalanced interface and 120Ω balanced interface;

T1/J1 interface: DSX-1 and CSU line compensation available for different extents of signal losses, including 100Ω and 110Ω balanced interfaces;

Analog interface: Optional functional modules for FXO interface, FXS interface or high-impedance logging;

2 \*TCP/IP 1,000M Ethernet (RJ-45);

2 \*LAN Ethernet (RJ-45);

1 \*Console (Mini-USB);

### *Development Environment*

Windows OS: Windows2000/XP/2003/Vista/NT;

Linux OS: Including RH7.2/RH9.0/AS4/FC4/SUSE10;

Programming language: ANSI C/C++, Microsoft Visual C++, C#, Delphi;

### *Security and Certifications*

Lighting-proof grade: Level 4;

Certification: FC/CE/China CCC

For RoHS compliance, please contact Synway's sales representatives;

### *Physical Characteristics*

Dimensions: 2U form factor: 88mm (H) x 472mm (W) x 440mm (L)  
Net Weight: about 8Kg (different for the number of optional modules)

### *Power Requirement*

AC: 100-240V AC

Power consumption: different for configuration, less than 350Watt;

### *Environment Requirement*

Ventilation: normal;

Operating temperature: 0°C ~ 40°C ;

Relative humidity: 10% ~ 85%;

Avoid dust accumulation;

Anti-electrostatic: please Grounded;

Installation recommendation: mounted on standard 19-inches rack;

### *Quality and Warranty*

ISO 9001:2000

Functional Module: 3-years

Lifetime Maintenance

### *About Synway*

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. [www.synway.net](http://www.synway.net)

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