



## MakSat Analog 2-4 Lines FXS/FXO VoIP Gateway



**MK200 Series**



**MK400 Series**

*The MakSat MK200/MKS400 Series VoIP Gateway is fully both SIP and H.323 standard compliant residential gateway that provides a total solution for integrating voice-data network and PSTN. By simple installation, this revolutionary compact voice over IP (VoIP) gateway could be configured as a 2/4 port FXS/FXO VoIP Gateway which provides voice connectivity over the IP network and to the Public Switched Telephone Network (PSTN). The MakSat Gateway is equipped with a four port Ethernet switch and built-in NAT router function that provides Internet access using only one IP address.*

*Besides, it provides high voice quality and optimized packet voice streaming over managed and public (Internet) IP networks.*

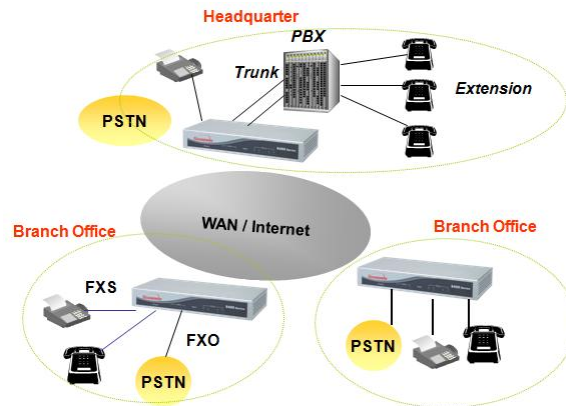
### **VoIP Key Features**

Both support SIP and H.323 protocols:

- ☒ SIP Registration and Digest Authentication Mode; H.323 Gatekeeper Registration.
- ☒ SIP Single Number / Account for multiple ports.
- ☒ Caller ID Delivery: FXS support DTMF Caller ID generation.
- ☒ Flexible and Smart VoIP call Dialing Book: VoIP call Book could provide any application VoIP call to any type destination (Domain name / IP address, PSTN or PBX) or hunting number setting.
- ☒ AC termination Impedance : 600/900 OHM and complex impedance
- ☒ Answer Supervision for Polarity Reversal Detection and Voice detection
- ☒ NAT traversal: This feature allow gateway to operate behind any NAT/Firewall device. Need not to change any configuration of NAT/Firewall like setting virtual server.
- ☒ Smart-QoS: This feature provides good voice quality when user place a VoIP call and also access internet at the same time. The gateway will automatically start to reserve bandwidth for voice traffic when VoIP call proceeds.
- ☒ Call Hunting Facility: This function helps gateway to use the lines effectively. This facility automatically transfers your incoming call to a free line. Subscribers need not indicate numerous numbers of each port of gateway.
- ☒ Voice channels status display: This function display each port status like as on-hook, off-hook, calling number called number, talk duration, codec.
- ☒ Flash Detection and Generation Program: FXO support Flash Generation and FXS support Flash Detection.
- ☒ FXO answer Mode : FXO provides Ringing Answer, Connection Answer and Non Answer for configuration.
- ☒ FXO anti-seized mechanism : FXO provides busy tone auto-learning and manually configuration busy tone learning..
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### **Application Scenario:**

The following application was use in Multi-Office as an example:



## ❶ Telephony Specification:

- ❑ Voice Codec: G.711(A-law /  $\mu$ -law), G.729 AB, G.723 (6.3 Kbps / 5.3Kbps)
- ❑ FAX support : T.30 / T.38
- ❑ Echo Cancellation: G.165/G168
- ❑ FXS Tone Table Configuration: Support tone frequency and cadence configuration
- ❑ FXO hang up detection / anti-seized : Busy Tone Learning Automatically / Manual Busy Tone Learning
- ❑ Answer supervision: Support Battery Reverse Detection and Voice Detection.
- ❑ FXO answer delay time: Support delay 0 – 8000 ms to answer.
- ❑ Adjustable AC Termination Impedance : 600 / 900 OHM and complex Impedance
- ❑ Failsafe Mechanism (FXS relay to FXO) :
  - Power failed bypass support
  - Internet Failed bypass (Optional)
  - Registered Failed bypass (Optional)
  - Unconditional bypass (Optional)
- ❑ 12K Hz and 16K Hz Pulse Metering (Customization)
- ❑ FXS Battery Reverse Generation
- ❑ Support MWI (Message Waiting Indicator) by SIP Notify.(Optional)

## ❷ IP Specifications:

- ❑ H.323 v2/v3/v4 and SIP (RFC 3261) , SDP (RFC 2327), Symmetric RTP, STUN (RFC3489), ENUM (RFC 2916), RTP Payload for DTMF Digits (RFC2833), Outbound Proxy Support.
- ❑ LAN :Support Virtual Server, DHCP Server
- ❑ WAN: Support PPPoE client, DHCP client, Fix IP Address, DDNS client
- ❑ Network Address Translation: Providing build-in NAT router function.
- ❑ Smart QoS: Guarantee the voice bandwidth
- ❑ IP TOS (IP Precedence) / DiffServ

## ❸ Call Features

- ❑ Voice channels status display
- ❑ Direct Dialing Mode : peer to peer call (support IP Address Call or Domain Name Call)
- ❑ Register Call Mode : register to SIP Proxy Server or H.323 Gatekeeper
- ❑ Adjustable volume : - 9 db ~ 9 db
- ❑ Silence Compression / VAD
- ❑ Auto Dial for speed
  - Dynamic Jitter Buffer
- ❑ Hot-Line and Warm-Line Support

## ❹ Configuration & Management

- ❑ Web-based Graphical User Interface
- ❑ Remote management over the IP Network
- ❑ FTP firmware upgrade
- ❑ Backup and Restore Configuration file
- ❑ Syslog client support
- ❑ FTP method Auto-Provision (Optional)



## General Specification

- ☒ AC power : AC100V-240V, DC12V/1.5A,50/60 Hz
- ☒ Temperature: 0°C ~ 40°C (Operation)
- ☒ Humidity: up to 90% non-condensing
- ☒ Emission: FCC Part 15 Class B, CE Mark
- ☒ RoHSCompliant
- ☒ Dimension : 260 x 130 x 35 mm
- ☒ Weight: 900g (Aluminum )

MK400/200 VoIP Gateway Catalogue

	MK400	MK401	MK402	MK404	MK200	MK201	MK202
<i>Ethernet Port</i>	4 LAN + 1 WAN						
<i>Telephony Interface</i>	Quad RJ-11				Dual RJ-11		
<i>FXS/FXO</i>	4FXS	3FXS+1FXO	2FXS+2FXO	4FXO	2FXS 1FXS+1FXO	2FXO	
<i>H.323 v2/v3/v4</i>							
<i>SIP(RFC3261)</i>							
<i>Smart-Qos</i>							
<i>NAT Traversal</i>							
<i>Echo Cancellation</i>							
<i>G.711 a / <math>\mu</math>-law</i> <i>G.723, G729AB</i>							
<i>T.38/T.30</i>							
<i>NAT Router</i>							
<i>DHCP server for Private Network</i>							

Caller ID Detection Support Model

Model MK402D		MK404D
<i>FXS/FXO</i>	2 FXS +2 FXO	4 FXO
<i>Caller ID Detection Module</i>		

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