

Internet Telephony Gateway

TOPM-400

A cost effective and reliable Voice over IP (VoIP) gateway

TOPM 400 offers toll quality voice and real-time fax data over IP networks with its embedded architecture.

It is ideal for VoIP applications for small-to-medium sized companies either for internal use or for public access.



KEY FEATURES

- Supports 4 channels of real-time voice and fax in a single embedded box
- Modular design to accommodate various types of telephony interfaces
- Field programmable CP tone detection and generation to support PBX and CO line interconnections
- Supports programmable line interfaces with country specific telephone settings
- Supports ITU standard vocoders and voice processing algorithms including G.711, G.723.1, and G.729 A/B, and G.168 Echo Cancellation
- User friendly management including console port interface, HTTP and Telnet servers, and Elite Server for VoIP related management such as call control and dial plan set up
- Built-in TFTP and flash memory for software download and upgrade via network
- H.323 call control protocol compliant
- QoS support for VoIP packets

TOPM 400 has user friendly interfaces and it may be installed easily and conveniently to yield immediate cost savings.

By providing field upgradeable capabilities, TOPM 400 may be programmed with updated protocols or algorithms locally or via the network at anytime. It comes equipped with remote management capabilities, configurable signaling to work with PBX or telephone. With advanced VoIP technologies implemented, TOPM 400 includes various voice coders and fax algorithms, echo cancellation, Voice Activity Detection (VAD), Comfort Noise Generation (CNG), and packet recovery algorithms.

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Technical Specifications

Hardware

Digital Signal Processors

- One TI TMS320VC5409 DSP
- 100 MIPS per DSP processor
- On-chip memory: 32K word of SRAM, 16K word of ROM
- Local SRAM 128K x 16 for each DSP

Control Processor

- 32-bit ARM7 TDMI core
- 8K byte unified cache
- 4K words Write buffer
- Embedded on-chip Ethernet MAC with associated BDMA
- Local 2M x 16 SDRAM and 1M x 16

I/O

- Standard 10/100 BaseTX RJ 45 interface
- RJ 11 Loop Start interfaces for FXS/FXO

Mechanical, Environment & Power

- Dimension: L * W * H = 240.60 * 134.40 * 45.00 mm
- Operating temperature: 32 to 122 F (0°C to 50°C)
- Operating humidity: 10% to 95% (non-condensing)
- Storage temperature: 14 to 140 F (-10 to 60°C)
- AC-to-DC power supply (90-260 VAC, auto-ranging, 50-60 Hz.)

Compliant

- CE
- FCC part 15 A
- FXS/FXO (Compliant with ITU-T G.712)
- UL

Software

Speech

- Compression algorithms: ITU G. 711, G.723.1, and G.729A/B.
- Hybrid echo cancellation G.168 (16 ms)
- Auto switch between Fax and voice
- DTMF tone detection/regeneration
- Channel: four channels per module
- Comfort Noise Generation (CNG)
- User programmable Call Progress detection/generation
- Voice Activity Detection (VAD)
- User programmable Gain Control

Fax

- Facsimile protocol: T.30 Group 3
- Modulation formats: V.21, V.27ter, V.29, V.17
- Real-time fax over IP
- DTMF tone detection/regeneration

Management Tools

- RS 232 console port interface
- HTTP Server
- Telnet Server
- Elite Server for RAS and dial plan management
- TFTP and flash memory for remote software download and upgrade

H.323 Protocol Stack

- RAS sub-stack for Terminals and Gatekeepers: supports all mandatory and optional messages (Tx and Rx) as specified in table 19/H.255.0
- H.245 sub-stack: supports the Signaling Entities of Master Slave Determination, Capability Exchange, Open Logical Channels, and Close Logical Channels
- Q.931: supports all mandatory messages as specified in table 4/H.255.0
- Compliant with H.323 Version 1 and Version 2

Line Specifications

	FXO	FXS
Signaling:	Loop Start / DTMF	Loop Start / DTMF
No. of Channels:	2	2
Interface Connectors:	2 RJ 11 2-pin modular jacks	2 RJ 11 2-pin modular jacks
Line Impedance :	600 Ω 900 Ω Complex line impedance	600 Ω 900 Ω Complex line impedance
Insertion Loss:	2 dB nominal (Adjustable)	2 dB nominal (Adjustable)
Frequency Response:	300Hz ~ 3400Hz +/- 2dB w.r.t. 1004Hz	300Hz ~ 3400Hz +/- 2dB w.r.t. 1004Hz
Return Loss:	≧ 18 dB	≧ 18 dB
Input Level Adjustment:	-6 dB to +6 dB	-6 dB to +6 dB
Output Attenuation:	0 dB to 13 dB	0 dB to 13 dB
Longitudinal Balance:	≧ 45 dB	≧ 45 dB
Loop Current:	N/A	25mA nominal
Ring Voltage:	N/A	40Vrms
Nominal Ringing Tone:	N/A	16.67Hz, 20Hz(default), 25Hz or 50Hz

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