Skyliance Network

Skylink Gateway Series

Standard-based VoIP Gateway / IAD solution for Carriers and Enterprises

IP TELEPHONY OVERVIEW

Internet Protocol (IP) telephony makes it possible to place voice and fax calls over IP networks. Sharing a single network infrastructure can save cost and enabled new features (like Web-enabled call centers, Click-2-connect, eBusiness Data Center, Web-based Auto-attendent), which integrate voice and data services in new ways.

For public network providers, integration of voice and data offers lower internal costs of ownership and the opportunity to offer new and competitive services to retain customers and to attract new users at the reach of Internet.

For corporate network owners, combining voice with corporate intranets can reduce the costs of ownership and optimize users by integrating the management of data and voice and avoiding separate communications and computer workforce.

SKYLINK GATEWAY

Skylink Gateway is a cost-effective and reliable analog Voice over IP (VoIP) Gateway/IAD that offers **real-time toll quality voice/fax data over IP networks**.

With its embedded architecture, the Gateway is ideal for VoIP applications associated with Carrier and Enterprise environments.

The Gateway equipped with **programmable telephony interface** to interwork with **major legacy telephony connections**, while **QoS enabled** network interface to ensure packet delivery, and hence voice quality.

Media Gateway utilizes advanced VoIP and FoIP technologies, including Dynamic voice coders and fax algorithms, Echo cancellation, Voice Activity Detection (VAD), Comfort Noise Generation (CNG), and robust packet recovery algorithms to ensure optimal voice/fax quality over ever-changing network.

Capacity can be expanded by modular telecom interface, or stacking for **scalable expansion**. With its built-in user-friendly interface, Media Gateway may be configured easily from consoles/telnet/web interface, and **integrated with management centers** to enable remote configuration.

With the flexible hardware architecture, the gateway is ready to support **various type of VoIP signaling and features via remote software upgrade**.

FEATURES AND BENEFITS

- Standard-based (H.323, SIP and MGCP-upgradable) VOIP/FOIP Gateway
- Support telephony interface **(FXS/FXO/E&M) with CallerID Detection and Generation**
- Real-time Voice and Fax over IP supporting (ITU-G.711/729ab/723.1, T.38) with **QoS (DiffServ)** supported
- Dynamic multiple voice coder support
- Advanced telephony features to optimize media quality against bandwidth, including
    - H.450.x feature call supports
    - Programmable line impedance
    - Customizable Network Tone Generation
    - Programmable Network Tone Detection,
    - DTMF relay over data network (H.323v2 & IMTCv1 UII format),
    - Comfort Noise Generation,
    - Tunable Gain Control
    - Voice Activity Detection for bandwidth conservation
- On-board modular FXS/FXO/E&M interface for Carrier Switch and Enterprise PBX integration
- Built in dial-plan and Gatekeeper support for intelligent call routing
- Remote management via serial, console, telnet and Web
- System software upgrade through data network
- Universal voltage for worldwide power requirement

Available Models

	SKLEL800 Series	SKLEL400R Series	SKLEL400 Series	SKLEL200 Series
Models	SKLEL800BASE SKLEL800FXSM SKLEL800FXOM SKLEL800E&MM 	SKLEL401R (with Router) 	SKLEL401 SKLEL402 SKLEL403 	SKLEL201 
Telephony Interface	Base System with 2 Modular Telephony Slots Each slot support, 4-port FXS 4-port FXO 4-port E&M (Upgradable telephony interfaces)	SKLEL401R: 2-port FXS + 2-port FXO	SKLEL401: 4-port FXS SKLEL402: 4-port FXO SKLEL403: 2-port FXS + 2-port FXO	SKLEL201: 2-port FXS
LAN Interface	1 10/100Base-T, RJ 45	4 10/100Base-T, RJ 45	1 10/100Base-T, RJ 45	1 10/100Base-T, RJ 45
WAN Interface		1 10/100Base-T, RJ 45 (Fixed-IP and PPPoE		
Packet Routing Function		• Broadband NAT • DHCP routing • capability • Diffserv QOS support		

Technical Specifications

Features:

Telephony Interface:

Physical Interface	Loop start FXO (RJ-11) Loop start FXS (RJ-11) E&M (RJ-45)
Life Line Support	Support external switch (Optional)
Programmable Line Interfaces	Programmable line impedance
Others	TR-TSY-000030 CallerID Generation / Detection (FXS/FXO) DDI Generation / Detection (E&M)

Data Network Interface:

Physical Interface	1 10/100Base-T, RJ 45 TCP/IP on Ethernet (NAT supported)
Protocols	H.323 (Normal/Fast-start mode, H.245 Tunneling), SIP MGCP / MEGACO/H.248 (Software Upgradable)
Voice coders support	H.450.x Call Features (e.g. Call Transfer, Call Waiting) support Support Direct and Gatekeeper routing mode ITU-T G.711 u-law, G.723.1, and G.729A/B, auto-switching (Frame-rate: 1 – 8 / packet)
Fax	Support T.30 G3 fax on PSTN Interface ITU-T T.30 Fax Spoofing over IP ITU-T T.38 Real-time FaxOverIP

Others:

Simultaneous connections	2/4/8 channels voice/fax from modular FXS/FXO/E&M Interface
Media processing	Automatic Gain Control G.168 Echo Cancellation (16 ms) Voice Activity Detection (VAD) with Comfort Noise Generation (CNG) Call Progress Detection DTMF Detection/Filtering/Regeneration (H.323v2 / IMTCv1)
Call Control	Built-in 3-tier Dialing Plan and destination hunting Support Gatekeeper authenuation, authorization and accounting, routing control and gateway mapping
Management	Call Accounting Information on Gateway (via RS232) or Gatekeeper RS-232 (DCE mode) Built-in TELNET and HTTP Web-based remote management Support external SNMP agents for active polling
System Upgrade	Flash memory and built-in TFTP allowing firmware and feature upgrade via network
System Architecture	Standard Arm-based Processor and DSPs Flash Memory, with Programmable Line/Station Interface
Chassis	SKLEL8xx: Metallic 19" Rack Mountable (1U form factor) Dimension: 44 x445 x275 mm Weight: 2.6kg (with 4-port Module) SKLEL4xx: Metallic desktop SKLEL2xx Dimension: 44 X 133 X 24 mm Weight: 1.9kg

System Specification:

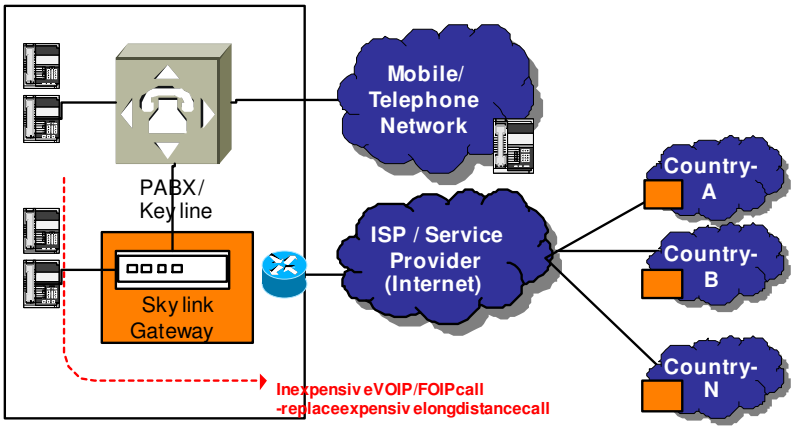
Data Network	Standard 10/100-BaseT Ethernet RJ-45 interface
Voice Network	RJ 11 / RJ 45 loop-start interfaces FXS/FXO/E&M (TR-008 compliant with ITU-T G.712)
Power Requirement	8xx: 90-260 Vac auto-ranging, 50-60 Hz 4xx/2xx: 12Vdc (with 90-260Vac adaptor)
Operating Environment	Operating temperature: 32 to 122 F (0 to 50 C) Storage temperature: 14 to 140 F (-10 to 60 C) Relative humidity: 10% to 95% (noncondensing)
Compliance	CE FCC part 15 A FCC part 68 EMC Certification (Pending)

Telephony Line Module Specifications:

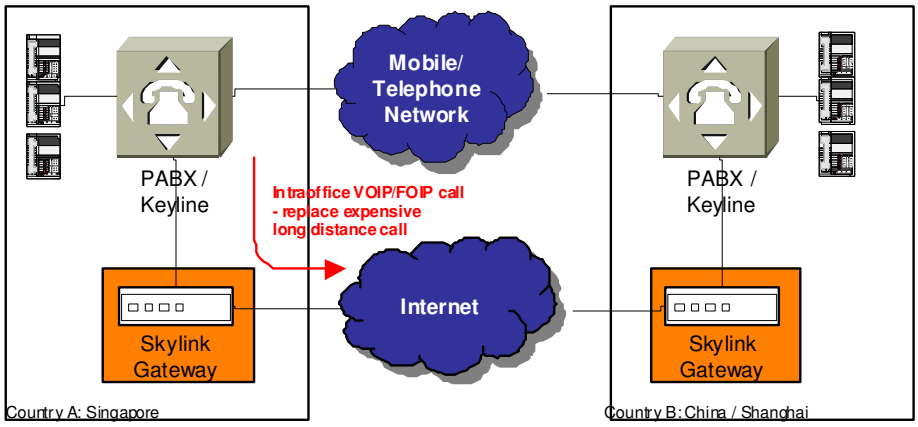
	FXO Port/Module	FXS Port/Module	E&M Module *(New)*
Signaling	Loop Start / DTMF	Loop Start / DTMF	Type I – V (2/4-wire)
No. of Channels	1 / 2 / 4	1 / 2 / 4	4
Interface Connectors	4 RJ 11 2-pin modular jacks.	4 RJ 11 2-pin modular jacks.	4 RJ-45 8-pin modular jacks
Line Impedance	600 Ω / 900 Ω (PRC) Software Configurable Line impedance	600 Ω / 900 Ω (PRC) Software Configurable Line impedance	600 Ω / 900 Ω
Insertion Loss	2 dB nominal.	2 dB nominal.	2 dB nominal.
Frequency Response	300Hz ~ 3400Hz +/- 2dB w.r.t. 1004Hz.	300Hz ~ 3400Hz +/- 2dB w.r.t. 1004Hz.	300Hz ~ 3400Hz +/- 2dB w.r.t. 1004Hz.
Return Loss	≥ 18 dB	≥ 18 dB	≥ 18 dB
Input Level Adjustment	-6 dB to +6 dB.	-6 dB to +6 dB.	-6 dB to +6 dB.
Output Attenuation	0 dB to 13 dB.	0 dB to 13 dB.	0 dB to 13 dB.
Longitudinal Balance:	≥ 45 dB	≥ 45 dB	≥ 45 dB
Loop Current		25mA nominal	25mA nominal
Line Voltage		-48Vdc	-48Vdc
Ring Voltage		50Vrms Nominal	
Ringing Tone		16.67Hz, 20Hz(default), 25Hz or 50Hz	
Disconnect Detection	Loop Current Customizable Network Tone Detection	Loop Current	Per E&M Type I-V (Voltage / Loop / Current)

Typical Usage Models

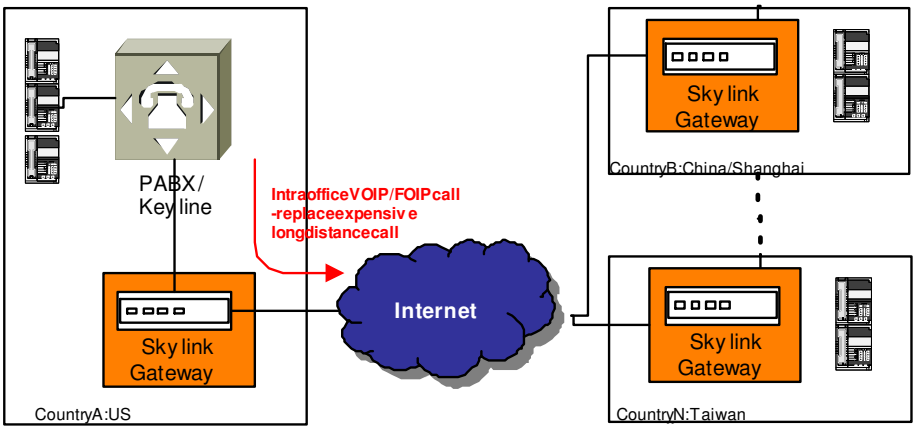
BundledVoiceoverBroadbandwithServiceProvider



Enterprise intraoffice link - VoIP/FoIP minimize cost



Enterprise with multiple remote offices- VoIP/FoIP minimize cost



Multi-location Call Center with Home Agents