8-Port Telephony Gateway

Higher Density Voice Solution Scales with your Business

Toll Quality Voice and Carrier-Grade Feature Support
The SPA8000 delivers clear, high-quality voice communication in diverse network conditions. Excellent voice quality in a demanding IP network is consistently achieved via our advanced implementation of standard voice coding algorithms. The SPA8000 is interoperable with common telephony equipment like voicemail, Fax, PBX, and interactive voice response systems.

Large-Scale Deployment and Management
The SPA8000 offers all the key features and capabilities with which service providers can provide customized services to their subscribers. The SPA8000 can be remotely provisioned and supports dynamic, in-service software upgrades. A secure profile upload saves providers the time, expense and hassle of managing and pre-configuring or re-configuring customer premise equipment (CPE) for deployment.

Ironclad Security
Linksys understands that security for both end users and service providers is a fundamental requirement for a solid, carrier-grade telephony service. The SPA8000 supports secure, encryption-based methods for communication, provisioning and servicing.

Model No. **SPA8000**

PRODUCT DATA

Model No. SPA8000

Features

- Eight voice ports (RJ11) for analog phones or Fax machines
- Impedance Agnostics - 8 Configurable Settings
- Call Waiting, Cancel Call Waiting, Call Waiting Caller ID
- Caller ID with Name/Number (Multi-national Variants)
- Caller ID Blocking
- Call Forwarding: No answer, Busy, All
- Do Not Disturb
- Call Transfer
- Three-way Conference Calling with Local Mixing
- Message Waiting Indication - Visual and Tone Based
- Call Return
- Call Back on Busy
- Call Blocking with Toll Restriction
- Delayed Disconnect
- Distinctive Ringing - Calling and Called Number
- Off-hook Warning Tone
- Selective/Anonymous Call Rejection
- Touch Tone Phone Keypad Configuration with Interactive Voice Response (IVR)
- Fax: G.711 Pass Through or Real Time Fax over IP via T.38*
    *T.38 support is dependent on fax machine and network/transport resilience

Package Contents

- 1 - SPA8000 Phone Adapter Unit
- 1 - 12v Power Adapter
- 1 - RJ45 Ethernet Cable
- 1- Quick Installation Guide

Specifications

Model   **SPA8000**

* Note: Many specifications are programmable within a defined range or list of options. Please see the SPA Administration Guide for details. The target configuration profile is uploaded to the SPA8000 at the time of provisioning.

- MAC Address (IEEE 802.3)
- IPv4 - Internet Protocol v4 (RFC 791) upgradeable to v6 (RFC 1883)
- ARP - Address Resolution Protocol
- DNS - A Record (RFC 1706), SRV Record (RFC 2782)
- DHCP Client - Dynamic Host Configuration Protocol (RFC 2131)
- DHCP Server - Dynamic Host Configuration Protocol (RFC 2131)
- PPoE Client - Point to Point Protocol over Ethernet (RFC 2516)
- ICMP - Internet Control Message Protocol (RFC792)
- TCP - Transmission Control Protocol (RFC793)
- UDP - User Datagram Protocol (RFC768)
- RTP - Real Time Protocol (RFC 1889) (RFC 1890)
- RTCP - Real Time Control Protocol (RFC 1889)
- DiffServ (RFC 2475), Type of Service - TOS (RFC 791/1349)
- VLAN Tagging - 802.1p
- SNTP - Simple Network Time Protocol (RFC 2030)
- Upload Data Rate Limiting - Static and Automatic
- QoS - Voice Packet Prioritization over Other Packet Types
- MAC Address Cloning
- Port Forwarding
- SIP channels support both UDP and TCP transport
- VPN Pass-Through with IPSec ESP, PPTP, and L2TP

Specifications

Voice Gateway

SIPv2: Session Initiation Protocol v2 (RFC 3261, 3262, 3263, 3264)
- SIP Proxy Redundancy - Dynamic via DNS SRV, A Records
- Re-registration with Primary SIP Proxy Server

SIP Support in Network Address Translation Networks - NAT (incl. STUN)

Secure (Encrypted) Calling via Pre-Standard Implementation of Secure RTP

Codec Name Assignment
- G.711 (a-law and μ-Law)
- G.726 (16/24/32/40 kbps)
- G.729 A
- G.723.1 (6.3 kbps, 5.3 kbps)

Dynamic Payload

Adjustable Audio Frames per Packet

Fax Tone Detection Pass-Through

Fax Pass-Though - Using G.711

DTMF: In-band & Out-of-band (RFC 2833) (SIP Info)

Flexible Dial Plan Support with Interdigit Timers and IP Dialing

Call Progress Tone Generation

Jitter Buffer - Adaptive

Frame Loss Concealment

Full Duplex Audio

Echo Cancellation (G.165/G.168)

VAD - Voice Activity Detection with Silence Suppression

Comfort Noise Generation (CNG)

QoS (Ethernet port up-stream bandwidth control, Physical port, MAC address, Application)

Attenuation / Gain Adjustments

Flash Hook Timer

MWI - Message Waiting Indicator Tones

VMWI - Visual Message Waiting Indicator via FSK

Polarity Control

Hook Flash Event Signalling

Caller ID Generation (Name & Number) - Bellcore, DTMF, ETSI

Music on Hold Client

Streaming Audio Server - up to 10 sessions

System DDR SDRAM - 16M Bytes

System Flash ROM - 4M Bytes

Security

Password Protected System Reset to Factory Default

Password Protected Admin and User Access Authority

Provisioning/Configuration/Authentication:
- HTTPS with Factory Installed Client Certificate

HTTP Digest - Encrypted Authentication via MD5 (RFC 1321)

Authentication: EAP-TLS, EAP-TTLS, and EAP-PEAP

SIP TLS (Transport Layer Security)

Up to 256-bit AES Encryption

Provisioning, Administration & Maintenance

Web Browser Administration & Configuration via Integral Web Server

Telephone Key Pad Configuration with Interactive Voice Prompts

Automated Provisioning & Upgrade via HTTPS, HTTP, TFTP

Asynchronous Notification of Upgrade Availability via NOTIFY

Non-intrusive, In-Service Upgrades

Report Generation & Event Logging

Stats in BYE Message

Syslog & Debug Server Records

Per Line and Purpose Configurable Syslog and Debug Options

Specifications

Physical Interfaces
8 port standard FXS voice ports (RJ-11)
RJ-21 (50-pin telco connector) multi-port voice connection
1 WAN 100baseT RJ-45 Ethernet Port (IEEE 802.3)
Reset button

Subscriber Line Interface Circuit (SLIC)
Ring Voltage: 40-90 Vpk Configurable
Ring Frequency: 20 Hz - 25 Hz
Ring Waveform: Trapezoidal
Maximum Ringer Load: 5 REN
On-hook/off-hook Characteristics:
   On-hook voltage (tip/ring): -46 ~ -56V
   Off-hook current: 18-25 mA
   Terminating Impedance: 600 ohm resistive or 270 ohm + 750ohm//
150nF complex impedance
Frequency Response 300 – 3400Hz
Return Loss (600 ohm, 300-3400Hz) Up to 20dB
Insertion Loss (1 Vrms @1 kHz) 3dB – 4dB
THD (350 mV peak @ 300 Hz) Up to 3%
Idle Channel Noise -72 dB (typ.)
Longitudinal Balance 55 dB (typ.)
Off Hook Threshold (Line Seizure) Rdc < 1000 ohm
On Hook Threshold (Line Release) Rdc >10000 ohm
Rdc DC Supervisory Range Rdc > 450 ohm

Regulatory Compliance
FCC (Part 15 Class B), CE, ICES-003, C-Tick Certification, RoHS, UL

Power Supply
Switching Type (100-240v) Automatic
DC Input Voltage: 12V DC at 3.0 A Max.
Power Adapter: 100-240v - 50-60Hz AC Input

Indicator Lights/LED
Power, Ethernet, Voice Status, Phone 1,2,3,4,5,6,7,8

Documentation
Quick Installation, User, and Configuration Guides are downloaded from www.Linksys.com
Administration Guide - Service Providers Only
Provisioning Guide - Service Providers Only

Environmental

Dimensions	6.69 x 1.54 x 8.66" (170 x 39 x 220 mm) W x H x D
Weight	2.85 lbs (1.30 kg)
Operating Temp.	32 to 113°F (0°C to 45°C)
Storage Temp.	-13 to 185°F (-20°C to 85°C)
Operating Humidity	10% to 90% Non-Condensing, operating and non-operating
Storage Humidity	10% to 90% Non-Condensing, operating and non-operating

The Linksys SPA8000 8-Port IP Telephony Gateway is a full featured Analog Terminal Adapter (ATA) for small business enterprises providing enhanced communication services via a broadband connection to the Internet.

The SPA8000 features eight RJ-11 FXS ports to connect analog telephones to IP-based data networks and includes a single multi-port RJ-21 50-pin connector offering an alternative connection choice when deploying the telephony gateway in varied environments. The device also has one 10/100Base-T RJ-45 Ethernet interface to connect to either a router or multi-layer switch.

Solid in design, the SPA8000 is an affordable solution that is ideally suited for use in business and consumer VoIP service offerings including call centers and multi-dwelling environments. Customers can also protect and extend their investments by continuing to utilize their existing analog telephones and teleconferencing equipment.

Installed by the end user and remotely provisioned, configured and maintained by the service provider, each SPA8000 converts voice traffic into data packets for transmission over an IP network and uses common standards for voice and data networking for reliable voice and fax operation.

SPA Model	Service Lines	Active Calls	3-Way Conferences	PSTN (FXO) Connection
SPA2102	2	4	2	0
SPA3102	2	3	1	1
SPA8000	8	16	8	0

7080310A-DF