Sipura Phone Adapters

SPA-3000

1 Port FXS + 1 FXO Analog Telephone Adapter

SIPURA
technology, inc.

The Sipura Phone Adapter

The SPA-3000 features VoIP adapter functionality found in the SPA-1000 and SPA-2000 with the additional benefit of an integral connection for legacy telephone network "hop-on, hop-off" applications. SPA-3000 users will be able to leverage their broadband phone service connections more than ever by automatically routing local calls from cell phones and land lines to VoIP service providers and vice versa. If power is lost to the unit or Internet service is down, calls can be sent to a traditional carrier via the FXO interface.

A typical user calling from a land line or mobile phone will be able to reduce and even eliminate international and long distance telephone charges by first calling their SPA-3000 via a local phone number or by using a telephone connected directly to the unit. The advanced authentication and call routing intelligence programmed into the SPA-3000 will connect the caller via the Internet to the far end destination with security and ease. Using the SPA-3000 at the far end, calls can be answered immediately or further processed as a local call to any legacy land line or mobile phone allowed by the SPA-3000 dial plan.

The SPA-3000 supports one POTS (Plain Old Telephone Service) FXS port for connection to existing analog phones and fax machines. The SPA-3000 also supports one PSTN FXO port for connection to a Telco or PBX circuit. The SPA-3000 includes an Ethernet interface for connection to a home or office LAN. The SPA-3000 FXS and FXO lines can be independently configured via software controlled by the service provider and/or the end user.

Installed by the subscriber and remotely provisioned, configured and maintained by the service provider, each SPA-3000 converts voice traffic into data packets for transmission over an IP network. The SPA-3000 can be used in consumer and business IP telephony service offerings including full-featured IP Centrex. The SPA-3000 delivers clear sounding voice and reliable fax calling through its implementation of internationally recognized standards for voice and data networking.

Highlights

Toll Quality Voice and Carrier-Grade Feature Support
The SPA-3000 delivers clear, high-quality voice communication in a variety of network conditions. Excellent voice quality in challenging, changeable IP network environments is made possible via our advanced implementation of standard voice coding algorithms. The SPA-3000 is interoperable with common telephony equipment like facsimile, voicemail, PBX/KTS and interactive voice response systems.

The SPA-3000 Supports Key Telephony Features:

VoIP to PSTN (USA) Service Call Origination and Termination
PSTN (USA) to VoIP Service Call Origination and Termination
Single or Dual Stage Dialing
Service Authentication via PIN, Digest, Caller ID (Bellcore Type I)
Per Call Authentication and Associated Routing
Least Cost Routing Support
Telephone Impedance Agnostic - 8 Configurable Settings
Call Waiting, Cancel Call Waiting
Caller ID Detection (Bellcore Type I)
Caller ID with Name / Number (Multinational Variants) Display
Caller ID Blocking
Call Waiting Caller ID with Name / Number
Call Forwarding to PSTN or VoIP Service: 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 and Call Back on Busy
Call Blocking with Toll Restriction
Distinctive Ringing
Off-Hook Warning Tone
Selective / Anonymous Call Rejection
Hot Line and Warm Line Calling
Speed Dialing of 8 Numbers / Addresses
Music on Hold

Large-Scale Deployment and Management
The SPA-3000 offers all the key features and capabilities with which service providers can provide customized services to their subscribers. The SPA-3000 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.

Security
Sipura Technology recognize that security for both end users and network operators is a fundamental requirement for a viable, carrier-grade telephony service. The SPA-3000 supports secure, encryption-based methods for communication, provisioning and servicing.
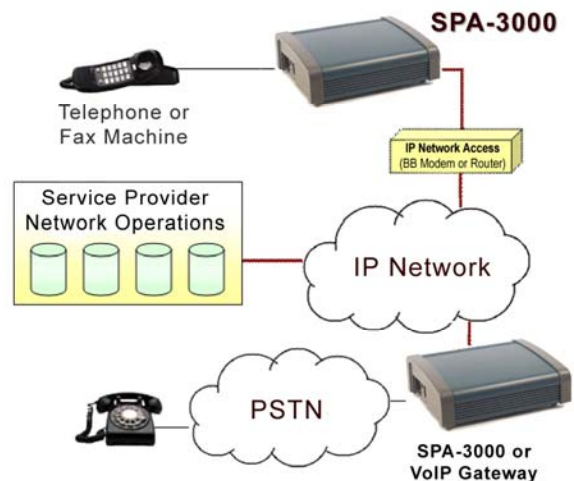
SPA Model	Service Lines	Active Calls	3-Way Conferences	PSTN (FXO) Connection
SPA-3000	2*	3	1	Yes
SPA-2000	2	4	2	No
SPA-1000	1	2	1	No

Notes:
The SPA-1000, SPA-2000 and SPA-3000 support one G.729 session. Advanced resource management is available.
The SPA-1000 has two (2) physical phone (RJ-11) interfaces that act as a single service line splitter.
* SPA-3000 Supports 2 incoming services (proxy registrations) and an unlimited number of outgoing VoIP services.

SPA-3000

Technical Specifications

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 SPA-3000 at the time of provisioning.

Data Networking:
MAC Address (IEEE 802.3)
IPv4 – Internet Protocol Version 4 (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)
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)
SNTP – Simple Network Time Protocol (RFC 2030)

Voice Gateway:
SIPv2 – Session Initiation Protocol Version 2 (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
Voice Algorithms:
 G.711 (A-law and mu-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 and Fax Pass-Through 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 w/ Silence Suppression
Attenuation / Gain Adjustments
Flash Hook Timer
MWI – Message Waiting Indicator Tones
VMWI – Via FSK
Polarity Control
Hook Flash Event Signaling
Caller ID Generation (Name & Number) – Bellcore, DTMF, ETSI
Music on Hold Client
Streaming Audio Server – Up to 10 Sessions

Security:
Password Protected System Reset to Factory Default
Password Protected Admin and User Access Authority
Provisioning/Configuration/Authentication:
 HTTPS with Factory Installed Client Certificate
 Sipura *SecureProvision*
 HTTP Digest – Encrypted Authentication via MD5 (RFC 1321)
 Up to 256-bit AES or RC4 Encryption

Provisioning, Administration and Maintenance:
Web Browser Administration and 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 and Event Logging
Syslog and Debug Server Records
Per Line and Purpose Configurable Syslog and Debug Options

SPA3000 Specific Features:
Forward Calls to VoIP Service - Selective, Authenticated, All
Forward Calls to PSTN Service - Selective, Authenticated, All
PSTN Line Sharing with Multiple Extensions
Automatic PSTN Fallback
 - Loss of Power or IP Service to Unit - With Quiescence to Normal Operation
Advanced Inbound and Outbound Call Routing
Single Stage and Two Stage Dialing
Independent Configurable Dial Plans - Up to 8
Force PSTN Disconnection
Sequential Dialing Support

VoIP To PSTN Authentication and Routing Features:
VoIP-To-PSTN Gateway Enable/Disable
VoIP Caller Auth Method: None, PIN, HTTP Digest
VoIP PIN Max Retry Setting
One Stage Dialing Enable/Disable
VoIP Caller ID Pattern Matching
VoIP Access Allowed Caller List (No Further Authentication)
VoIP Caller PIN and Associated Dial Plan - Up to 8

PSTN to VoIP Authentication and Features:
PSTN-To-VoIP Gateway Enable/Disable
Caller Auth Method: None, PIN, Caller ID
Ring Through to FXS Enable/Disable
Ring Through Tone - Configurable
Caller ID (Bellcore) For VoIP Service Access
Caller ID Enable/Disable
PIN Max Retry Setting
Access Allowed Caller List (No Further Authentication)
Caller PIN and Associated Dial Plan - Up to 8
Least Cost Routing (Via Outbound VoIP - Line1 Dial Plan)

FXO Behavior Features:
VoIP Answer Delay Timer
PSTN Answer Delay Timer
VoIP PIN Digit Time-out Timer
PSTN PIN Digit Time-out Timer
PSTN-To-VoIP Call Max Dur Timer
VoIP-To-PSTN Call Max Dur Timer
PSTN Ring Through Delay Timer
PSTN Dialing Delay Timer
VoIP DLG Refresh Interval Timer
PSTN Ring Time-out Timer
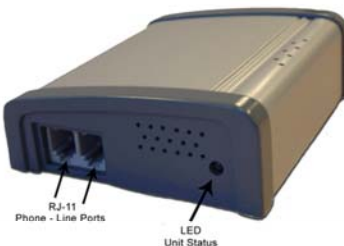
PSTN Disconnection Detection Features:
PSTN Disconnect Detection
 - CPC (Removal of Tip/Ring Voltage Momentarily)
 - Polarity Reversal
 - Long Silence (Configurable Time Setting)
 - Disconnect Tone (e.g. Reorder Tone)

International Control Features:
FXO Port Impedance - Configurable to 16 Settings
Ring Frequency - Configurable
SPA To PSTN and PSTN to SPA Gain Settings
Ring Frequency - Maximum Setting
Ring Validation Time Setting
Tip/Ring Voltage Adjustment Setting
Ring Indication Delay Setting
Operational Loop Current Minimum Value
Ring Time-out Setting
On-Hook Speed Setting
Ringer Impedance Setting
Line-In-Use Voltage Setting

SPA-3000

Right Side   Left Side

Labels on images:
- RJ-11 Phone - Line Ports
- LED Unit Status
- RJ-45 10baseT Ethernet
- LED Link Activity
- 5 Volt Power Connection

Technical Specifications - Continued

Physical Interfaces:
One RJ-45 Port - Ethernet 10baseT Interface (IEEE 802.3)
One RJ-11 FXS Port - For Analog Circuit Telephone Device (Tip/Ring)
One RJ-11 FXO Port - For Analog Circuit Network Device (Tip/Ring)

FXS Subscriber Line Interface Circuit (SLIC):
Ring Voltage: 40 - 55 V$_{RMS}$ Configurable
Ring Frequency: 10 Hz - 40Hz
Ring Waveform: Trapezoidal and Sinusoidal
Maximum Ringer Load: 3 REN
On-hook/off-hook Characteristics:
   On-hook voltage (tip/ring): -50 V NOMINAL
   Off-hook current: 25 mA min
   Terminating Impedance: Eight Configurable Settings Including:
                     North America 600 ohms, European CTR21

Regulatory Compliance:
FCC Part 15 Class B
FCC Part 68 - Additional Country Type Approval Will Be Available In Future
CE Mark

Power Supply:
Switching Type with Modular Wall Plug Clip – Country Specific
DC Input Voltage: +5 VDC at 2.0 A Max.
Power Consumption: 5 WATTS
Power Adapter: 100-240v – 50-60Hz (26-34VA) AC Input, 1.8m cord

Indicator Lights:
LAN Activity/Link LED
Status LED (In-Use, Provisioning, Idle, Alert)

Operating Temperature:
41 to 113° F (5 to 45° C)

Storage Temperature:
 -13 to 185° F (-25 to 85° C)

Relative Humidity:
10 to 90% non-condensing, operating and non-operating

Unit Dimensions:
110mm x 93mm x 35mm (4.33in x 3.66in x 1.38in)
Compact Form Factor, Desktop or Wall Mountable

Box Dimensions / Weight:
183mm x 152mm x 64mm (7.20in x 5.98in x 2.52in) / 490g (1.08 lbs)

Box Contents:
1 - Sipura Phone Adapter Unit - Color: Sipura Blue
1 - 5v Power Adapter - 1.8m (3 ft) Cord - Color: Black
1 - RJ-45 Ethernet Cable - 1.8m (3 ft) Cord - Color: Black
1 - RJ-11 Telephone Cable - 1.8m (3 ft) Cord - Color: Black

Shipping Carton (20 Pieces) Dimensions / Weight:
39.5cm x 34cm x 33cm (15.55 in x 13.39 in x 12.99 in) / 10.6kg (23.37 lbs)

Physical Customization:
Customer Logo / Branding Available
Case Color Matching Available

Documentation:
Quick-Start Installation and Configuration Guide
User Guide
Administration Guide - *Available to Service Providers Only*

Warranty:
One Year Hardware - Limited

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