AP-LMS1500

Multi-Port LMS VoIP Gateway

High Performance LMS(Land to Mobile Station) VoIP Gateway Solution

Bluetooth VoIP, 3G VoIP Service

AddPac Technology

2013, Sales and Marketing

Contents

Bluetooth VoIP Module

Product Overview

AP-LMS1500 Multi-Port LMS VoIP Gateway

- Two(2) Module Slots for 4-Port Bluetooth Module, 3G WCDMA, 8FXS/8FXO Analog Interface (Up to 8-Port Bluetooth Channel)
- Analog Interface (FXS)/VoIP Interface(LAN) Both Support
- Mobile Phone Interworking Solution via Bluetooth Technology
- H.323/SIP Dual Concurrent Stack Embedded
- High Performance RISC & Programmable DSP Architecture
- Two(2) 10/100Mbps Fast Ethernet (IP Share, etc)
- High Performance LAN-to-LAN Routing Capability
- G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- Firmware Upgradeable Architecture
- Smart Web Manager for LMS VoIP Gateway
- Smart NMS for Large Scale Deployment
- Advanced Voice QoS Mechanism
- Light and Compact Design with Internal Power Supply

Product Highlights

AP-LMS1500 Multi-Port LMS VoIP Gateway

Powerful LMS VoIP Gateway

State-of-art Signaling
H.323, SIP
Concurrent Dual Stack

Mobile Phone Interworking via
Bluetooth Technology

Analog FXS interface,
VoIP Interface Both
Support

High Performance RISC CPU
+ Programmable DSP

Excellent Voice Quality
G.729/G.723/G726/G711

Broadband IP Networking
With dual 10/100Mbps
Fast Ethernet

APOS™Technology
Firmware Upgradeable Architecture

NMS for Large Scale VoIP
Gateway Management Support

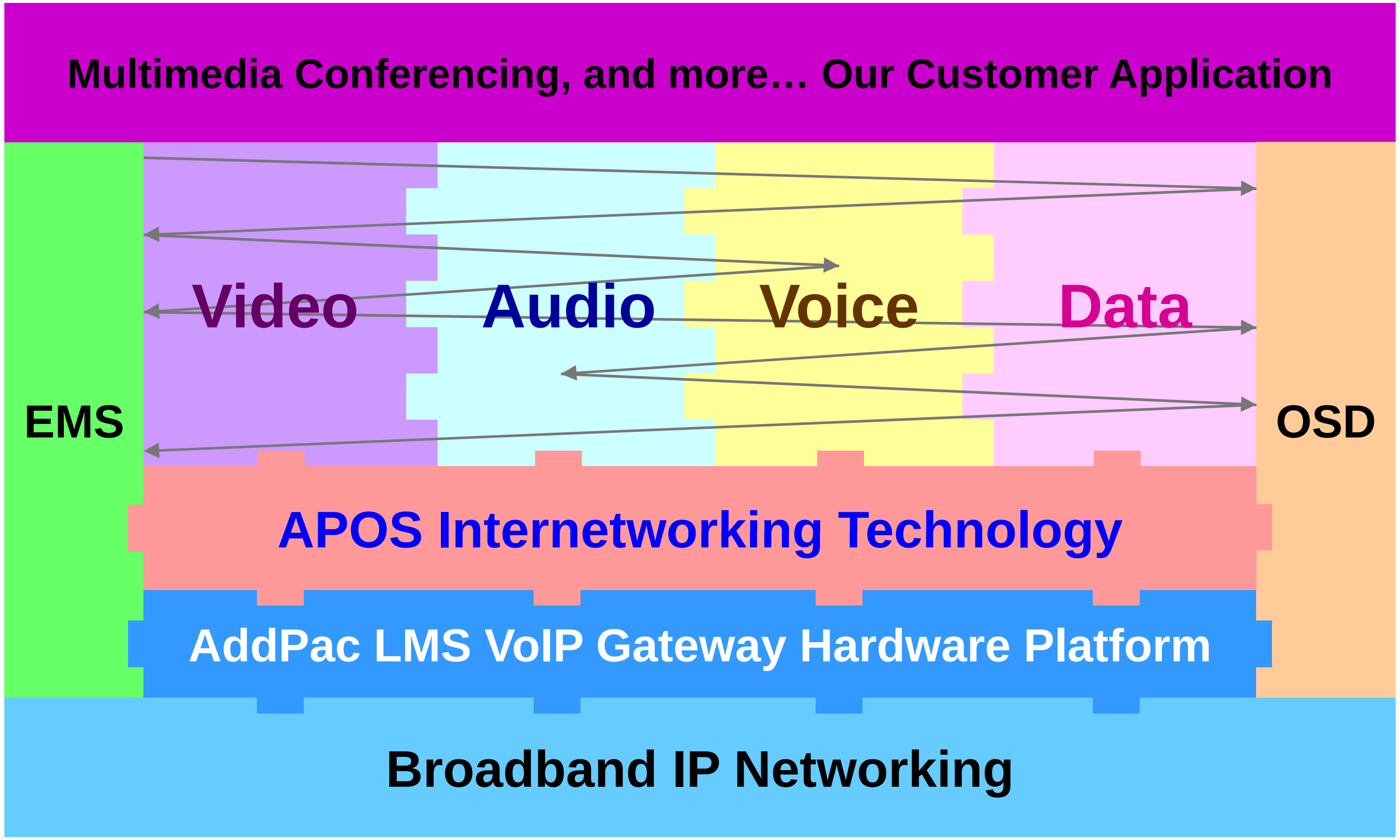
Powerful Network Protocol
Support

Advanced Voice
Traffic QoS Mechanism

Powerful Trouble Shooting &
Debugging Feature Support

APOS Technology

AP-LMS1500 Multi-Port LMS VoIP Gateway



- APOS : AddPac Internetworking Operating System
- OSD : On- Screen Display
- EMS : Element Management System

Hardware Specification

AP-LMS1500 Multi-Port LMS VoIP Gateway

RISC CPU

High-end DSP

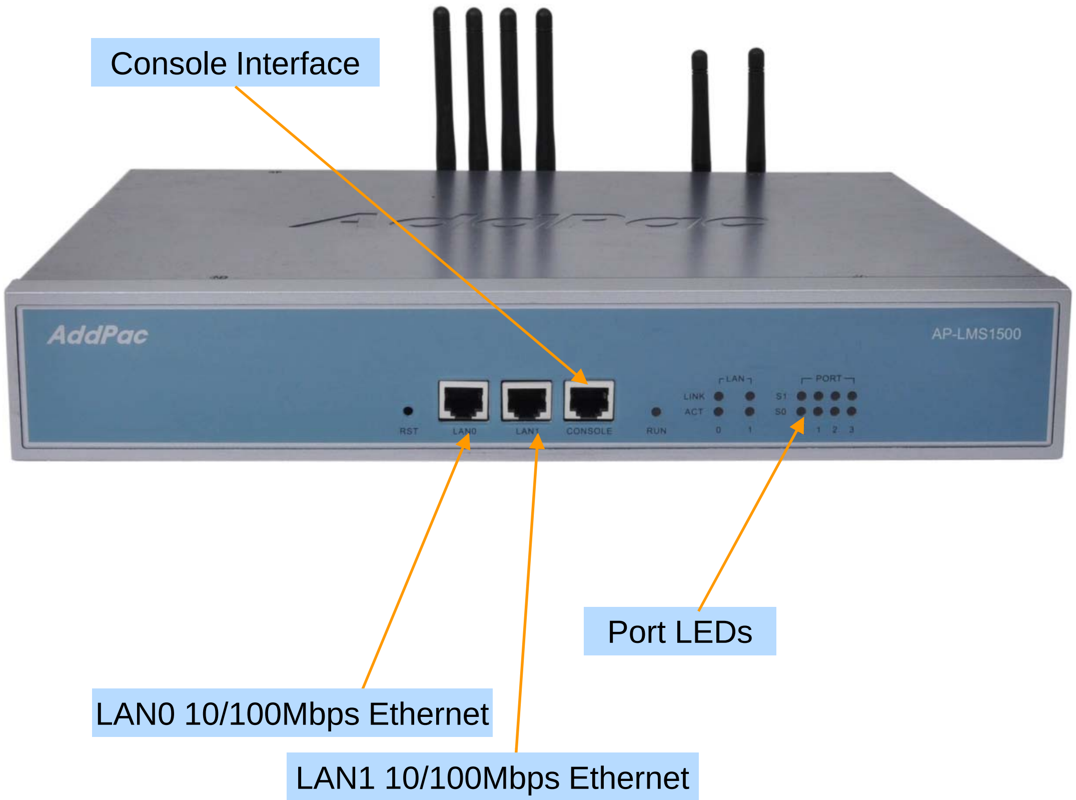
- RISC Microprocessor Computing Power
- Two(2) Module Slot for Bluetooth, 3G, Analog Interface
- 4-Port Bluetooth Module(AP-N1-LMS4)
  - Four(4) Bluetooth Antenna Interface
  - Hot-Swap
- VoIP Interface Module
  - 8-Port FXS Module (AP-N1-FXS8)
  - 8-Port FXO Module (AP-N1-FXO8)
  - Hot-Swap
- Network Interface
  - Two(2) 10/100Mbps Fast Ethernet (RJ45)
- RS232C Console Interface for CLI
- Run LED, LAN LED, Port LEDs
- Internal Power Supply

Hardware Specification

AP-LMS1500 Multi-Port LMS VoIP Gateway

AP-LMS1500 LMS VoIP Gateway	Basic Specifications
Mobile Interface	Two(2) Module Slots for LMS, 3G WCDMA, etc
	AP-N1-LMS4, AP-N1-3G4I, AP-N1-FXS8, AP-N1-FXO8, AP-N1-FXS4O4
Ethernet Interface	2-Ports 10/100Mbps Ethernet Interface(RJ-45)
Flash Memory	4Mbyte High-speed Flash Memory
Base Memory	32Mbyte High-speed SDRAM
Power Requirement	Power Supply / VAC 110~220V, 50/60Hz, 5V 15A, 12V 8A
Operating Temperature	0ºC ~ 45ºC (32 ºF ~ 122ºF)
Storage Temperature	-40ºC ~ 85ºC (-40ºC ~ 185ºF)
Relative Humidity	5% ~ 95% (Non-condensing)
Dimensions	H x W x D (55mm x 340 x 267mm)
Weight(kg)	2.5Kg

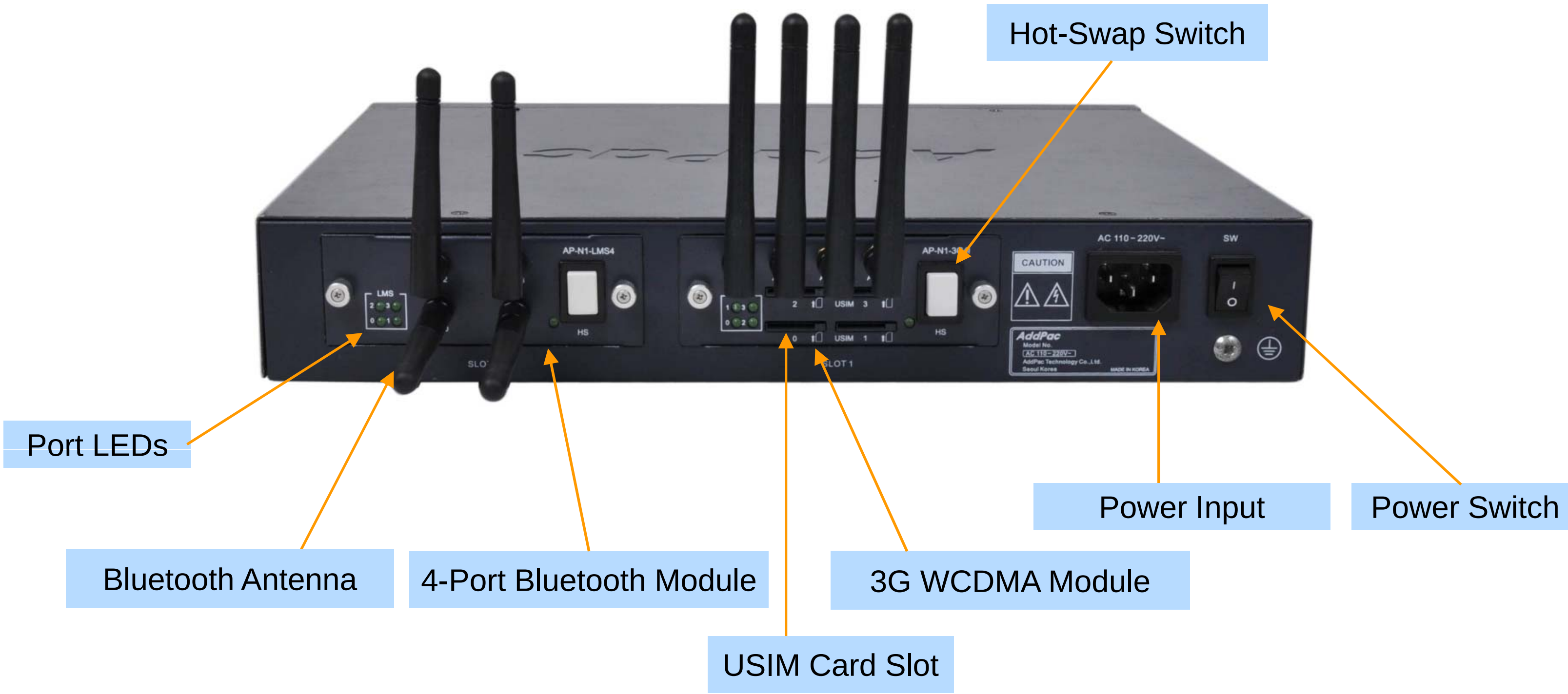
Front Side View



Hardware Specification

AP-LMS1500 Multi-Port LMS VoIP Gateway

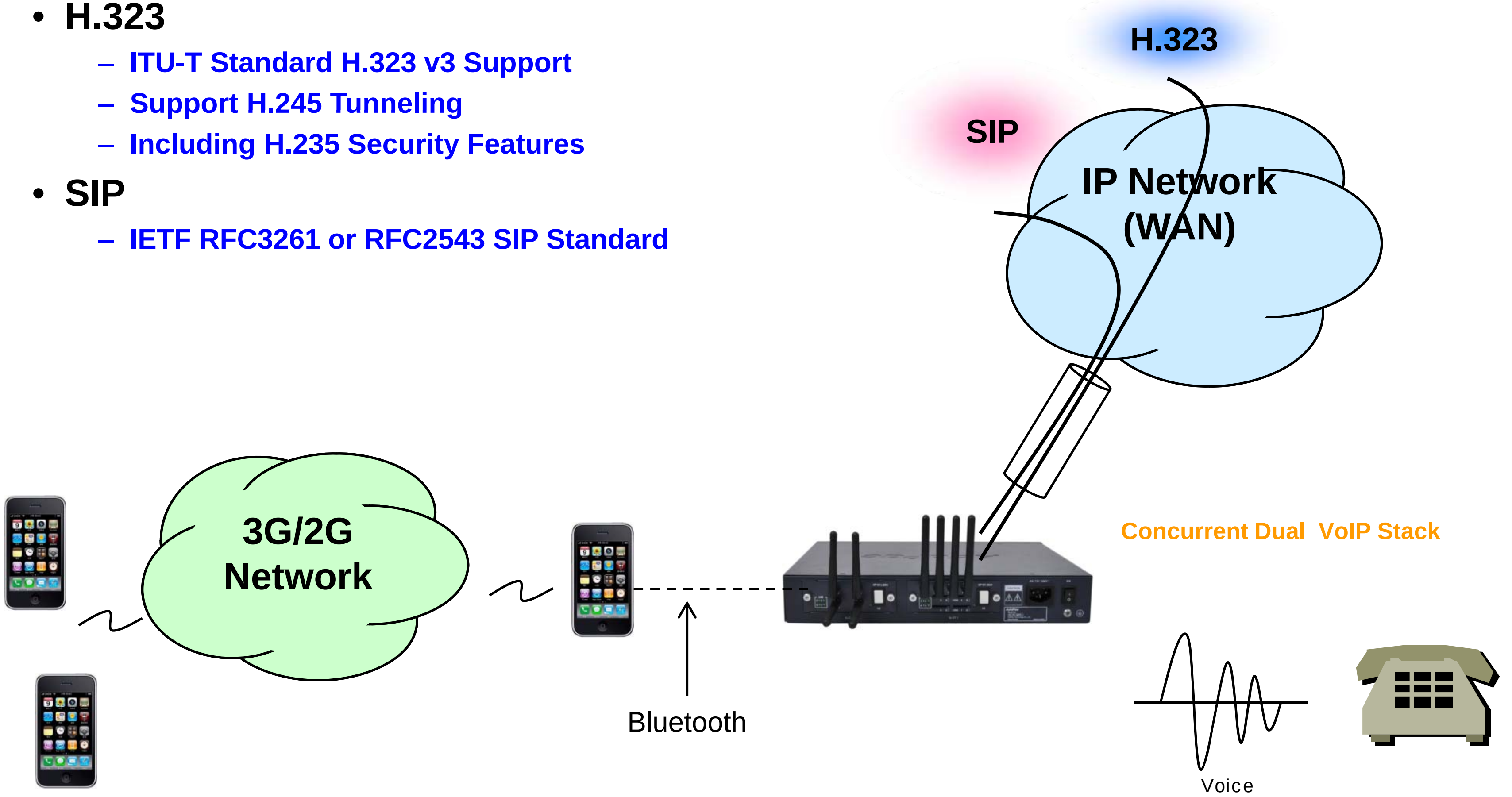
Back Side View
(8-Port Bluetooth + 8-Port 3G WCDMA)



VoIP (Voice over IP) Service

AP-LMS1500 Multi-Port LMS VoIP Gateway

- **H.323, SIP Dual Stack**
- **H.323**
  - **ITU-T Standard H.323 v3 Support**
  - **Support H.245 Tunneling**
  - **Including H.235 Security Features**
- **SIP**
  - **IETF RFC3261 or RFC2543 SIP Standard**



VoIP (Voice over IP) Service

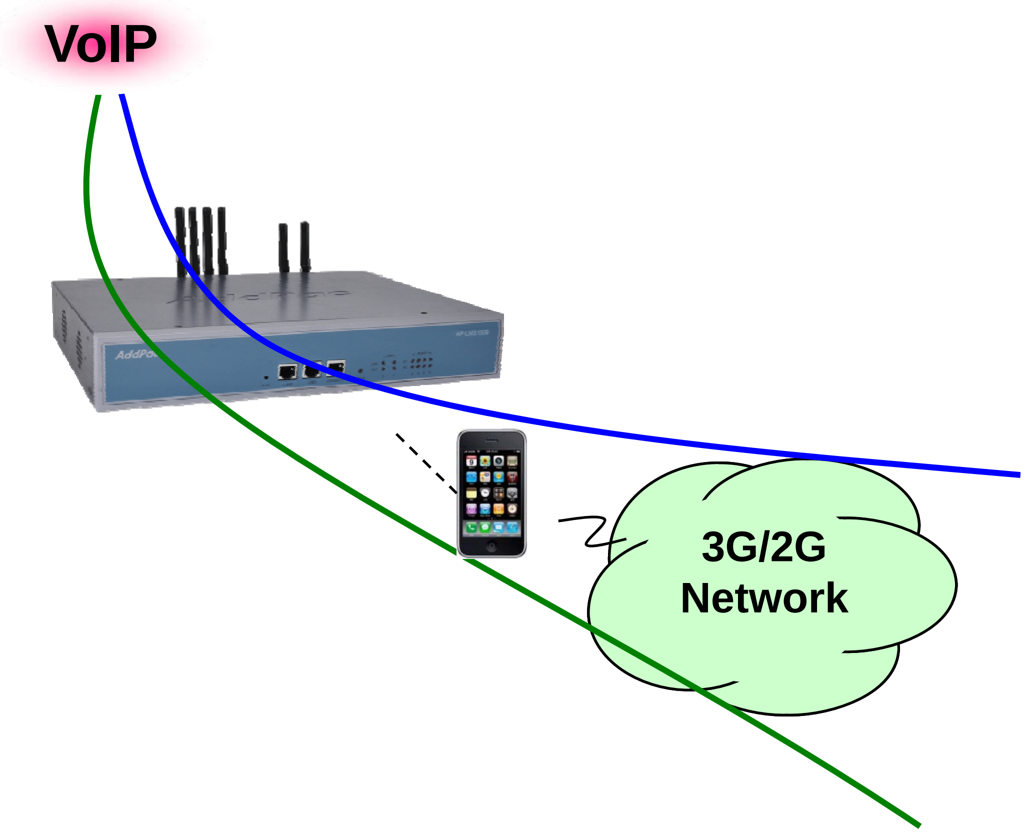
AP-LMS1500 Multi-Port LMS VoIP Gateway

- **H.323**
  - Fast connect, normal connect support
  - H.245 tunneling support
  - Q.931 response message setting for inbound VoIP calls
  - H.245 logical channel open timing selection function
  - Start H.245 procedure support
  - DTMF / Hook flash relay with H.245 alphanumeric / signal
  - Secondary gatekeeper support
  - Gatekeeper assignment according to the domain name
  - Gatekeeper discovery with multicast
  - Lightweight RRQ support
  - Signaling TCP port assignment
  - Resource threshold setting with RAI
  - H.235 clear-token, crypto-token support
  - canMapAlias support
  - Technical prefix (supported prefix) support
  - Public IP assignment in NAT environment
- **SIP**
  - Gateway-based / Endpoint-based registration support
  - Secondary proxy-server assignment function
  - SIP signaling port change function
  - SIP proxy server assignment according to the domain name
  - T.38 real-time fax relay support
  - DTMF relay support with RFC2833 / OPTION message
  - Re-INVITE support

VoIP (Voice over IP) Service

AP-LMS1500 Multi-Port LMS VoIP Gateway

- **Voice Codec**
  - G.711 A-Law, G.711 U-Law
  - G.726 r16, G.726 r32
  - G.729A
  - G.723.1 r63, G.723.1 r53
  - VAD (Voice Activity Detection) function support
  - DTMF relay support (H.323, SIP, MGCP common) based on RFC2833
- **RTP**
  - Redundant RTP packet transmission in case of severe packet loss
  - Dynamic jitter buffer management and RPT packet jitter and loss compensation with heuristic & DSP error concealment
  - Static jitter buffer setting support
  - Voice frame per RTP packet number control for each codec
  - In-band ring-back tone support
  - Virtual ring-back tone support
  - Tone parameter change support

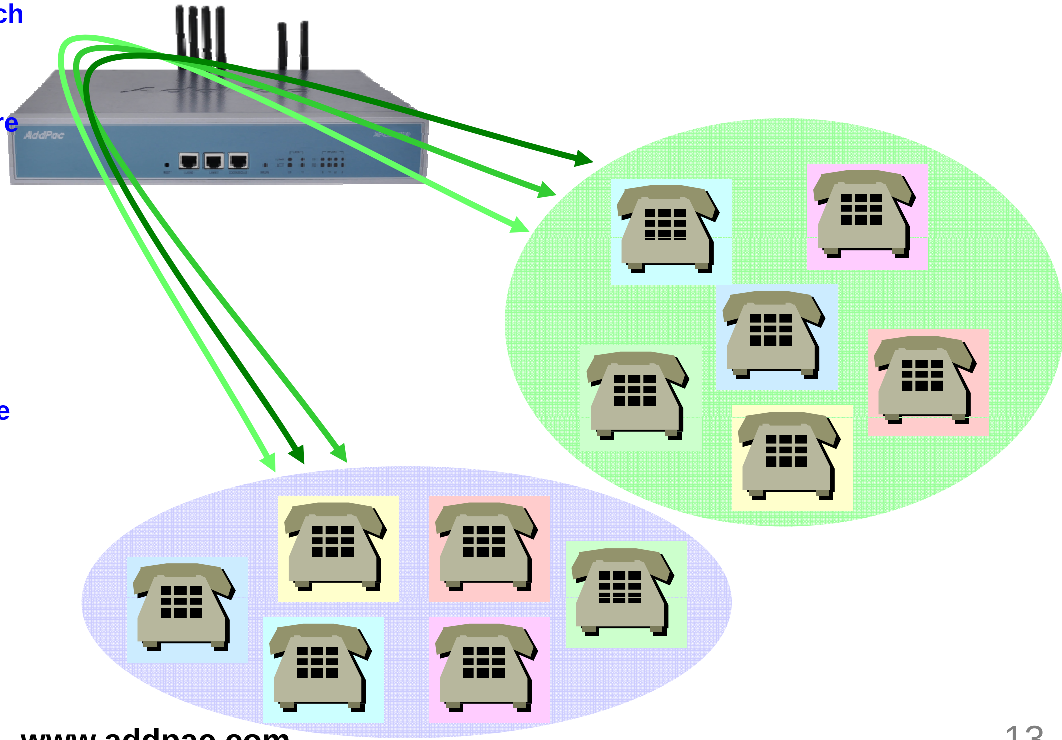


VoIP (Voice over IP) Service

AP-LMS1500 Multi-Port LMS VoIP Gateway

- **VoIP Call Controls**
  - Hot line connection function with PLAR (Private Line Auto Ring Down)
  - Leased line emulation function
  - Connection monitoring function
  - Fault tolerant with Redundancy and Call Distribution among Gateways for load balancing
  - Call attempt with IP address
  - H.323, SIP, MGCP inbound call connection for each voice port
  - Multiple E.164 setting for one voice port
  - One E.164 or digit pattern can be assigned to more than one voice port
  - Hunting with Longest match/ priority/ sequence/ random
  - One stage call setup by Digit forwarding
  - Call barring with specific digit patterns
  - Calling and called number conversion for PSTN outbound calls
  - PSTN rerouting in case of VoIP call attempt failure

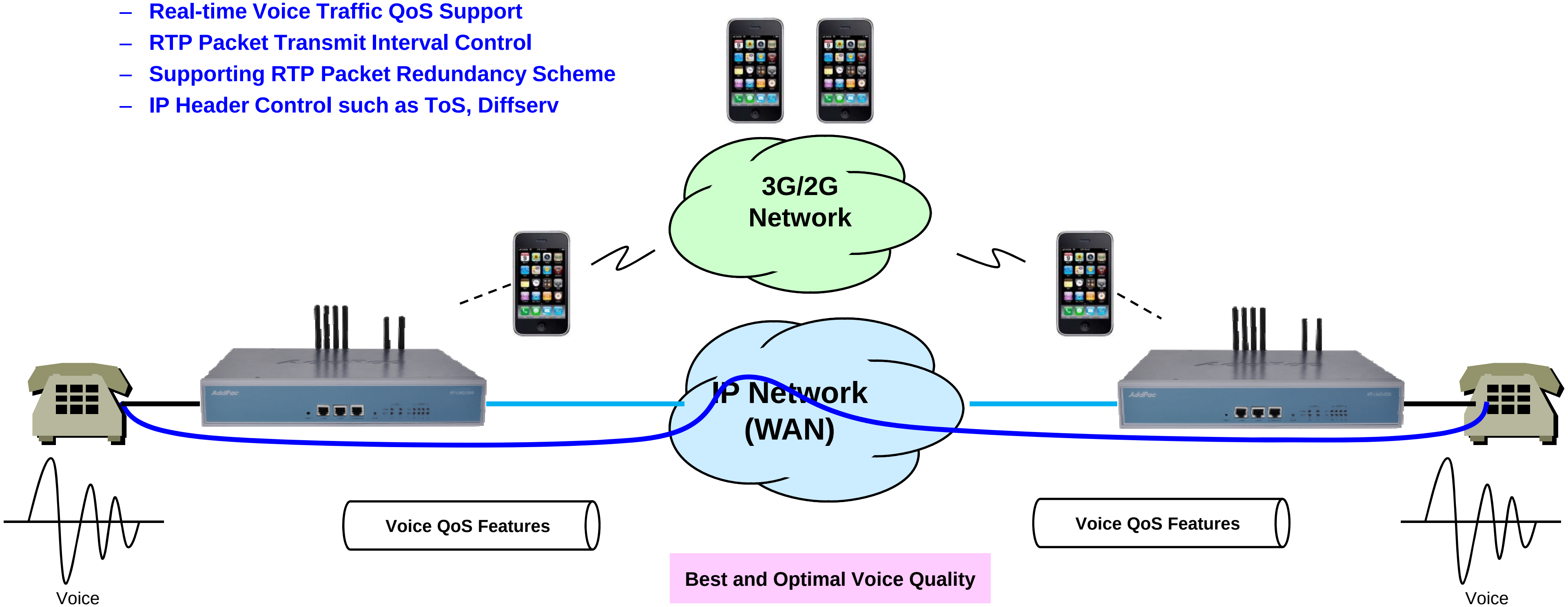
- **VoIP Call Controls (cont.)**
  - Call transfer for internal calls
  - Call pickup for internal calls
  - Calling and called number conversion for VoIP outbound calls
  - Calling and called number conversion for VoIP inbound calls
  - Fax broadcasting call control



Advanced QoS Features

AP-LMS1500 Multi-Port LMS VoIP Gateway

- **Enhances Transmit Voice QoS Features**
  - Voice Traffic Priority Queuing
  - QoS Service Profiling
  - Providing Virtual Network Transmit Algorithm
  - Real-time Voice Traffic QoS Support
  - RTP Packet Transmit Interval Control
  - Supporting RTP Packet Redundancy Scheme
  - IP Header Control such as ToS, Diffserv
- **Enhances Receive Voice QoS Features**
  - Dynamic Jitter Buffer Management
  - Error Concealment
  - Support T.38 FAX Data Error Recovery Scheme



Network Protocols

AP-LMS1500 Multi-Port LMS VoIP Gateway

Basic Network Protocols

- ARP, IPv4, TCP, UDP, ICMP, SCTP, IGMP, MLD

Routing Protocol

- IPv4 : Static

Service Protocol

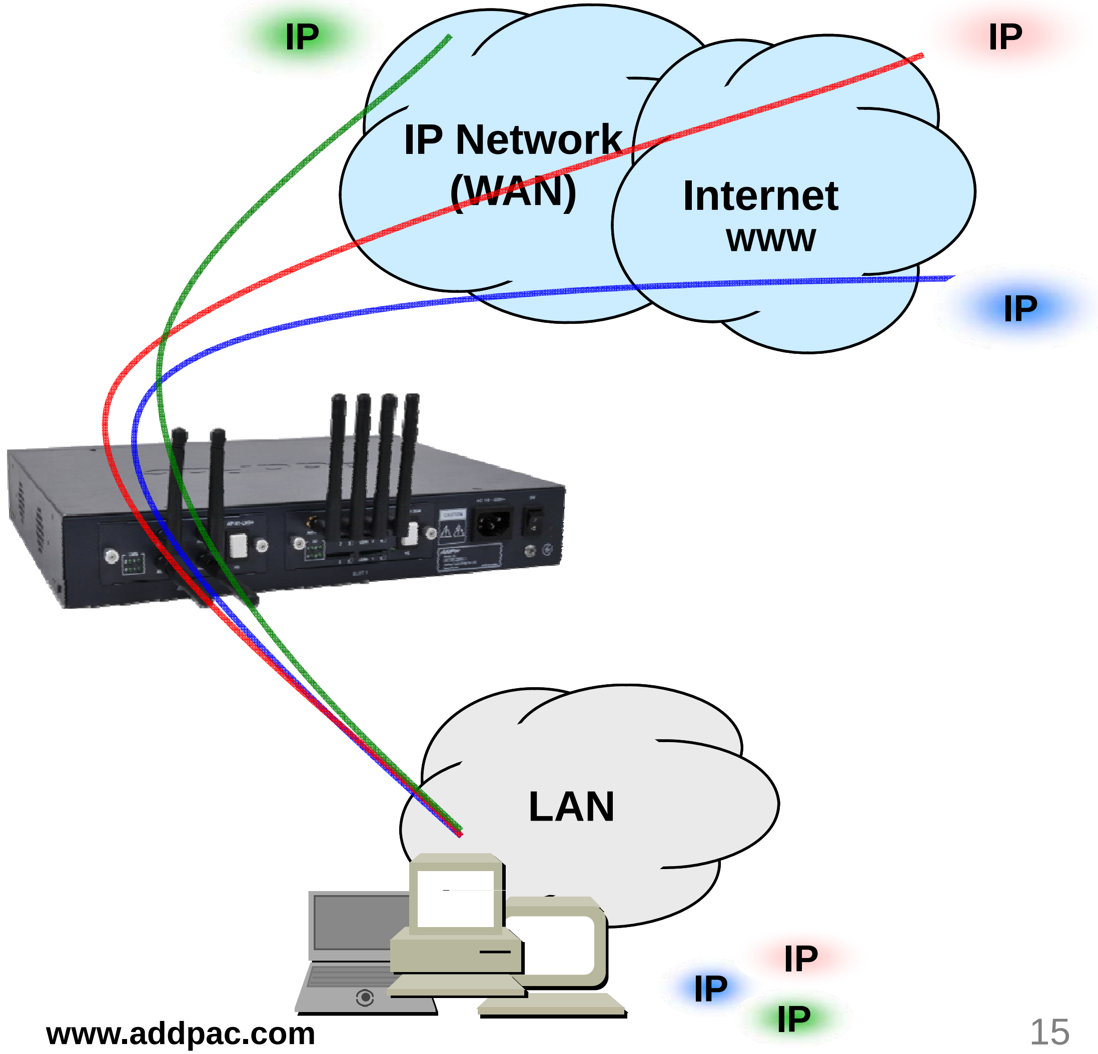
- FTP, Telnet, TFTP, DHCP Server/Relay, SNMP Server
- CDP (Cisco Discovery Protocol)
- DNS Resolver , DDNS(nsupdate)
- Bridge
- Syslog

IPv4 Address Configuration

- Fixed (Static)
- DHCP
- PPPoE

Miscellaneous

- Cisco Style CLI
- Standard & Extended IPv4 Access List
- Multi-level User Account Management
- IP accounting
- STUN Client

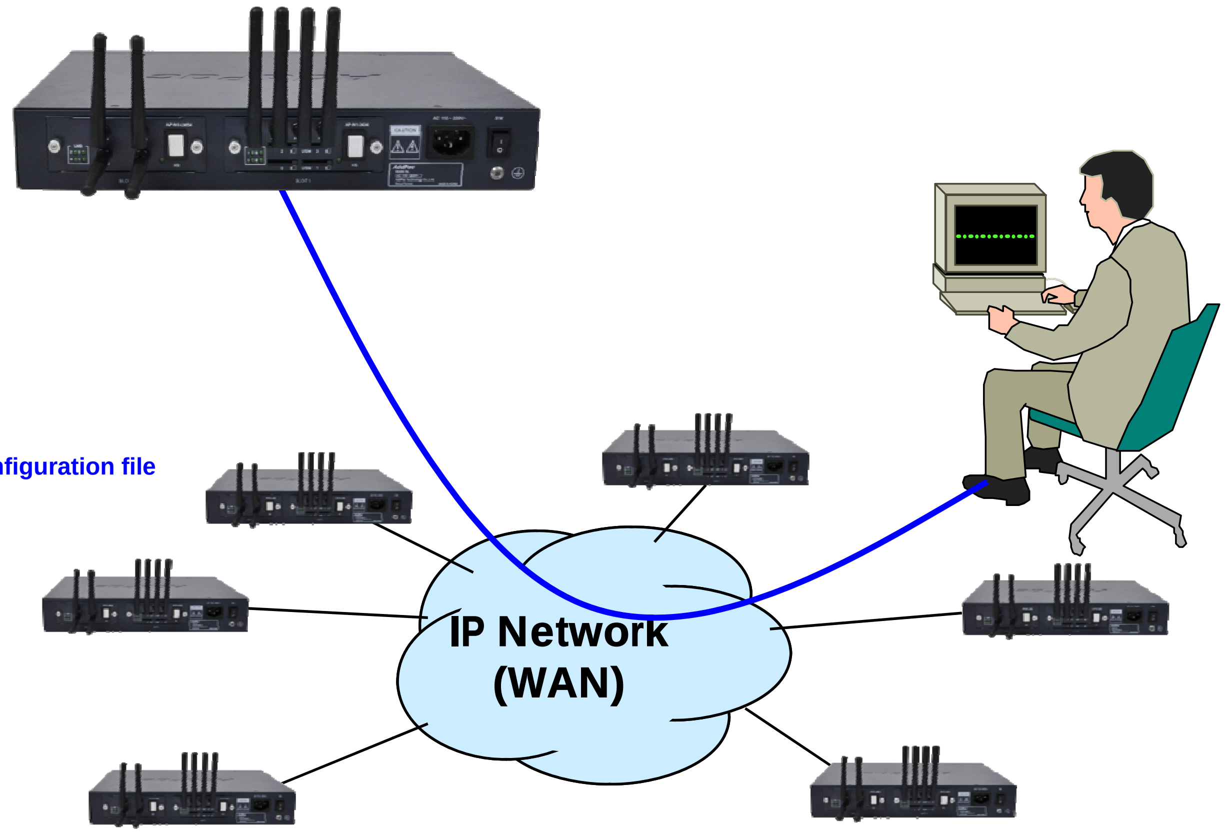


Network Management

AP-LMS1500 Multi-Port LMS VoIP Gateway

- **SNMP**
  - Standard Simple Network Management Protocol(SNMP) Agent support
  - MIB v1 and v2 Support
- **Web-based Management**
  - Smart Easy Setup
  - Standard Voice Interface
  - Standard PSTN Back-up Interface
- **Watch-dog Function**
  - Hardware, Software watch-dog services
- **Remote Management**
  - Telnet
  - Rlogin
- **Auto Upgrade Service**
  - HTTP server based APOS image and configuration file auto-upgrade support
- **Batch Job Function**
  - Text based script downloading

- **Interoperable with AP-VPMS Service**
  - AddPac VoIP Plug & Play Management System (AP-VPMS)

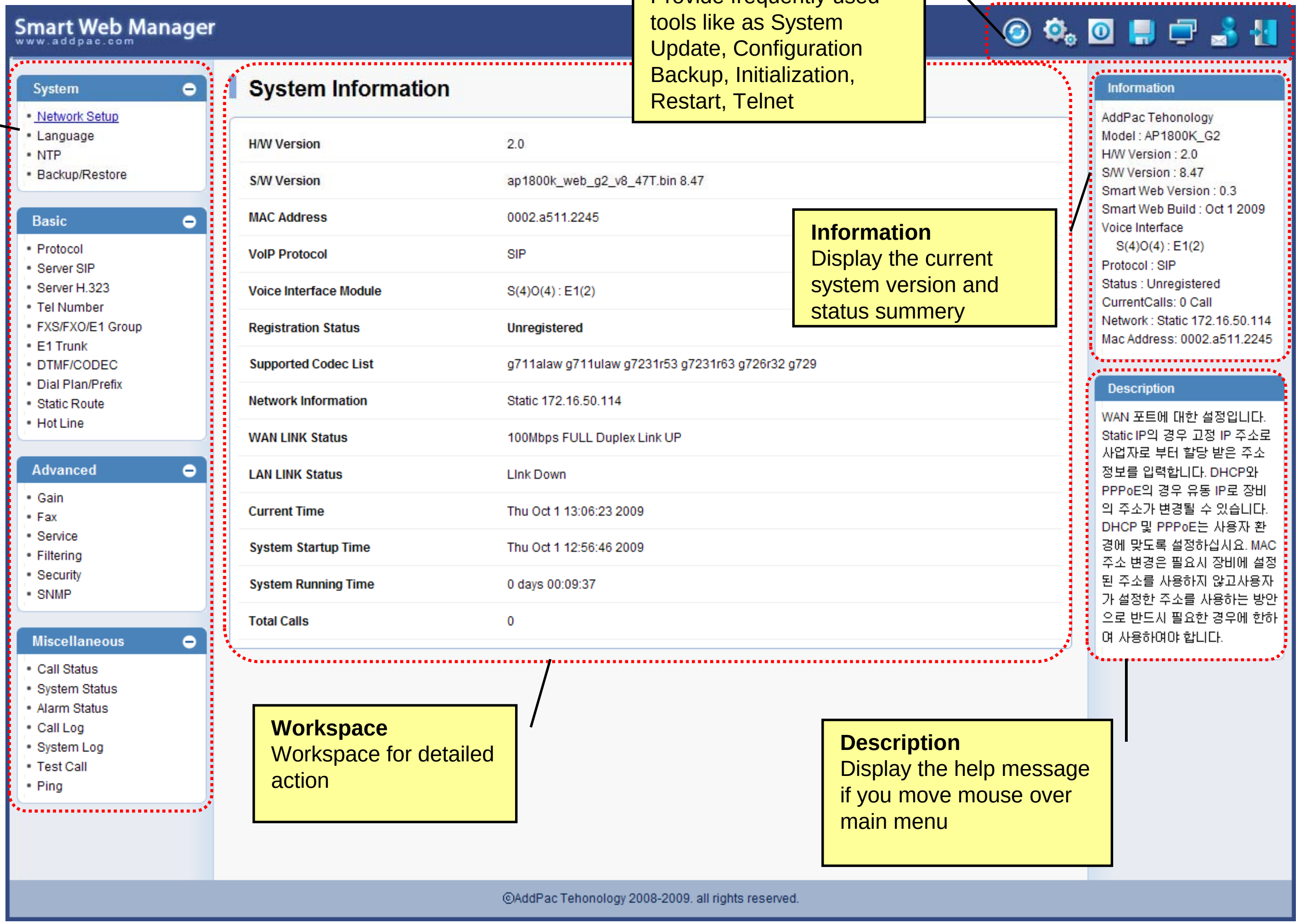


Smart Web Manager : Main Page Layout

AP-LMS1500 Multi-Port LMS VoIP Gateway

Main Menu
For easy system setup, provide the various menu and category

Tool Bar
Provide frequently used tools like as System Update, Configuration Backup, Initialization, Restart, Telnet



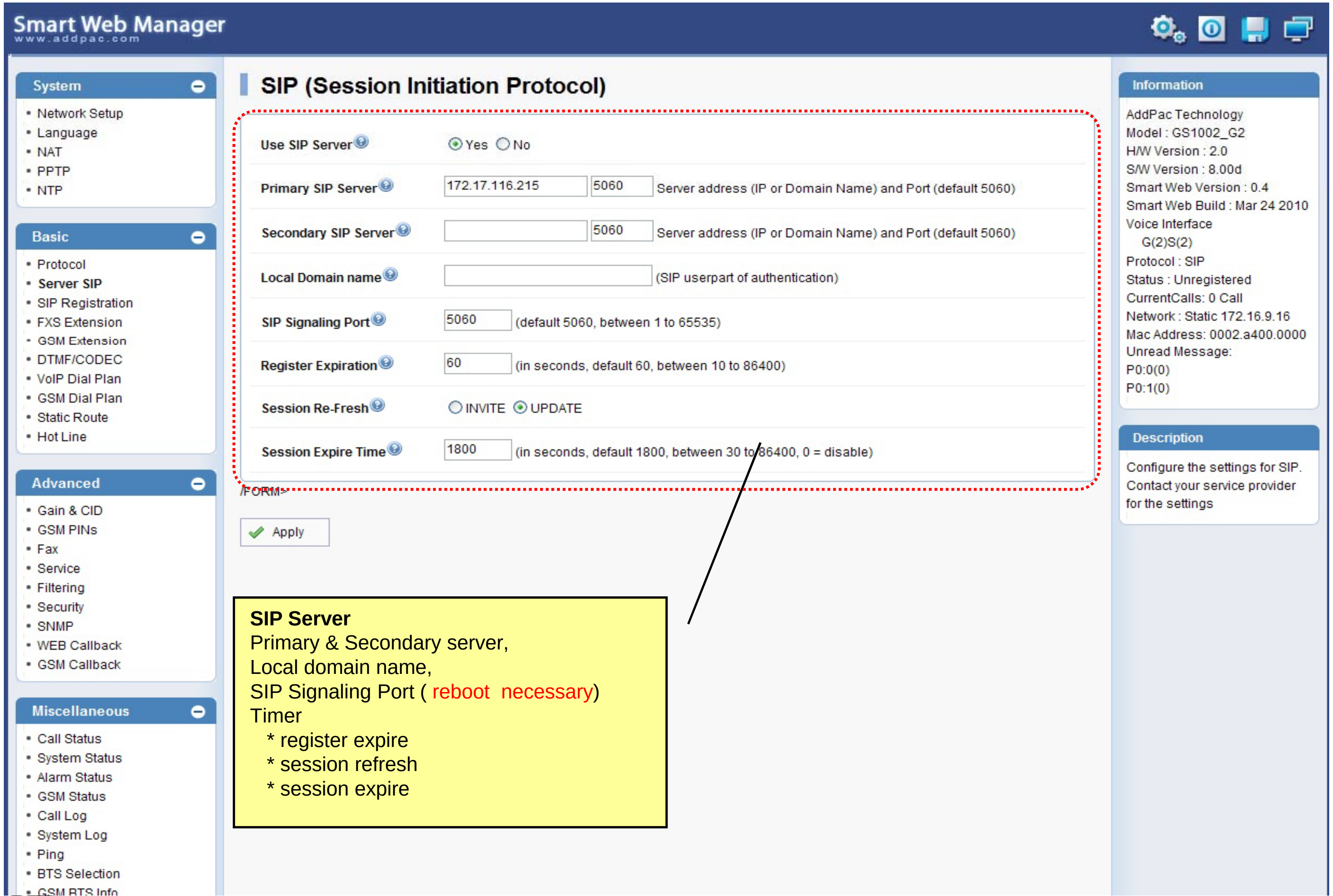
Information
Display the current system version and status summery

Workspace
Workspace for detailed action

Description
Display the help message if you move mouse over main menu

Smart Web Manager : SIP Server (Example)

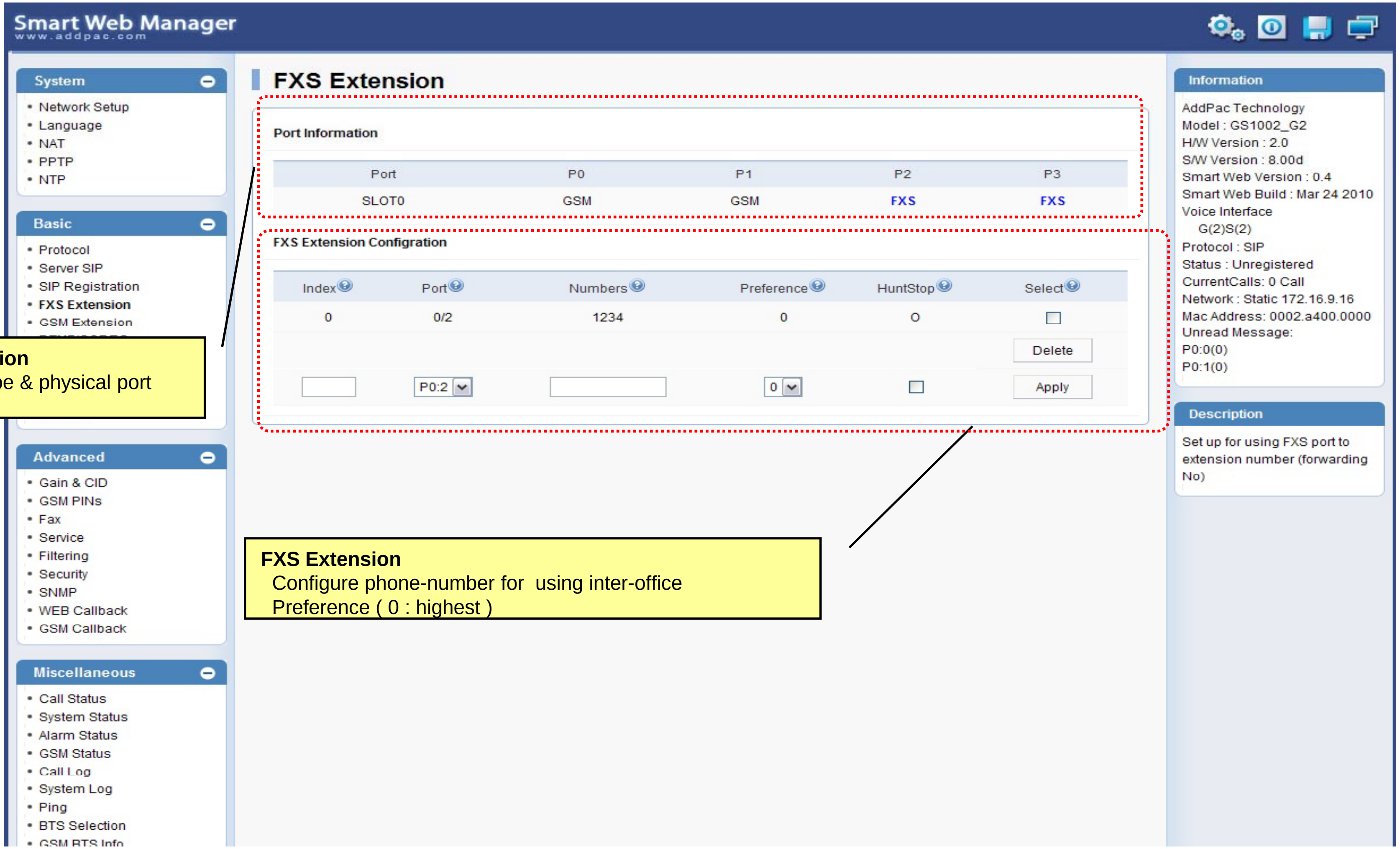
AP-LMS1500 Multi-Port LMS VoIP Gateway



SIP Server
Primary & Secondary server,
Local domain name,
SIP Signaling Port (reboot necessary)
Timer
* register expire
* session refresh
* session expire

Smart Web Manager : FXS Extension (Example)

AP-LMS1500 Multi-Port LMS VoIP Gateway



Port Information
voice port type & physical port

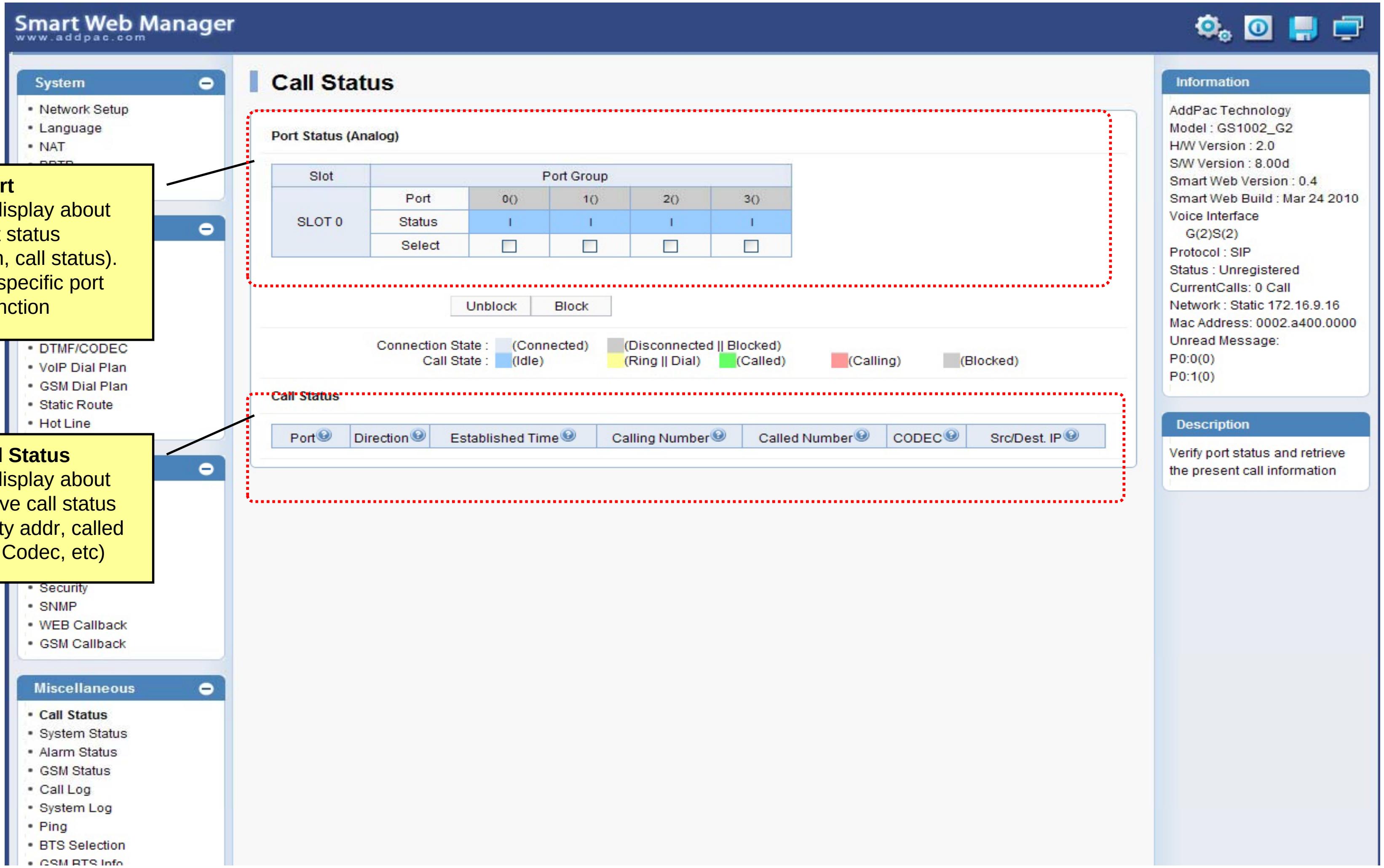
FXS Extension
Configure phone-number for using inter-office
Preference (0 : highest)

Smart Web Manager : Call Status (Example)

AP-LMS1500 Multi-Port LMS VoIP Gateway

Analog Port
Real-time display about analog port status (occupation, call status). Provide a specific port blocking function

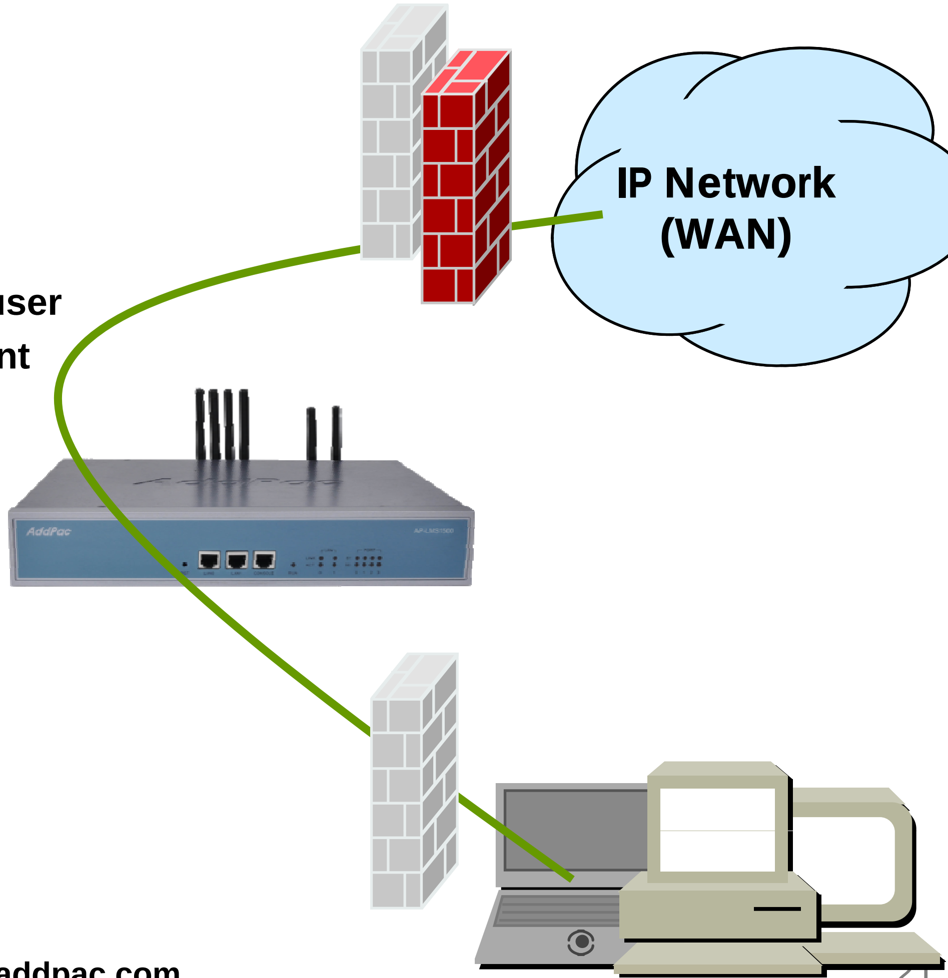
Active Call Status
Real-time display about current active call status (calling party addr, called party addr. Codec, etc)



Security Management

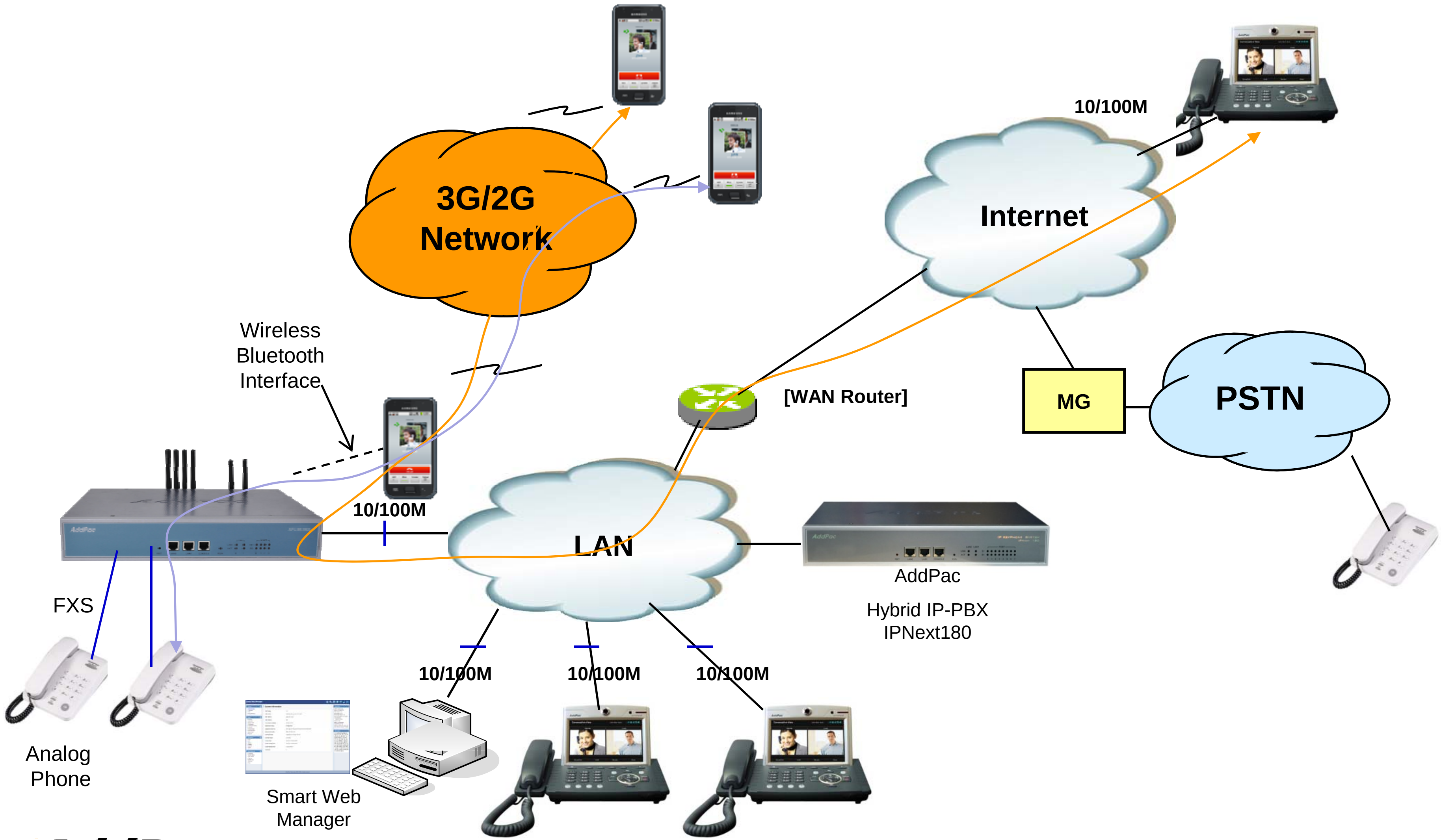
AP-LMS1500 Multi-Port LMS VoIP Gateway

- **IP packet filtering**
- **IP access list**
- **User authentication function**
  - **Password Authentication Protocol (PAP)**
  - **Challenge Handshake Authentication Protocol (CHAP)**
- **Enable/Disable specific protocols**
- **Auto-square connect of Telnet session**
- **Account Management function for multi-level user**
- **SNMP/TELNET/FTP/HTTP/TFTP port assignment function**
- **SNMP/TELNET/FTP access list management**
- **Boot mode security checking function**



Standard Application

AP-LMS1500 Multi-Port LMS VoIP Gateway



Ordering Information

- AP-LMS1500 Multi-Port LMS VoIP Gateway Hardware
  - AP-LMS1500 LMS VoIP Gateway Main Body
  - RISC Microprocessor with High-end Programmable DSP Architecture
  - Two(2) Module Slots
  - 2-ports 10/100Mbps Fast Ethernet(RJ45)
  - Including Network Cable, Antenna & Internal Power Supply, etc.
- Built-in APOS Internetworking Software for AP-LMS1500
- Including 1 Year Hardware Warranty
- Product Documents
  - Install and Operation Guide (PDF)
- Pricing
  - AddPac Technology Regional Sales Manager
  - Authorized Sales and Marketing Representatives
  - Please Contact www.addpac.com

Thank you!

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