



# AP-LMS3500

## Dual Power 36-Port Bluetooth VoIP Gateway

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

Bluetooth VoIP, 3G VoIP Service



**AddPac**

**AddPac Technology**

Sales and Marketing

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Bluetooth VoIP Module

# Product Overview

## AP-LMS3500 Dual Power 36-Port Bluetooth VoIP Gateway

- Nine(9) Module Slots for 4-Port Bluetooth Module, 8FXS/8FXO Analog Interface, Digital E1 Module, etc (Up to 36-Port Bluetooth Module)
- H.323/SIP Dual Concurrent Stack Embedded
- Analog Interface (FXS)/VoIP Interface(LAN) Both Support
- Mobile Phone Interworking Solution via Bluetooth Technology
- 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
- **Module Type Dual Power Supply**

# Product Highlights

AP-LMS3500 Dual Power 36-Port Bluetooth VoIP Gateway

**Powerful Bluetooth VoIP Gateway  
with Module Type Dual Power**

**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**

**Powerful Trouble Shooting &  
Debugging Feature Support**

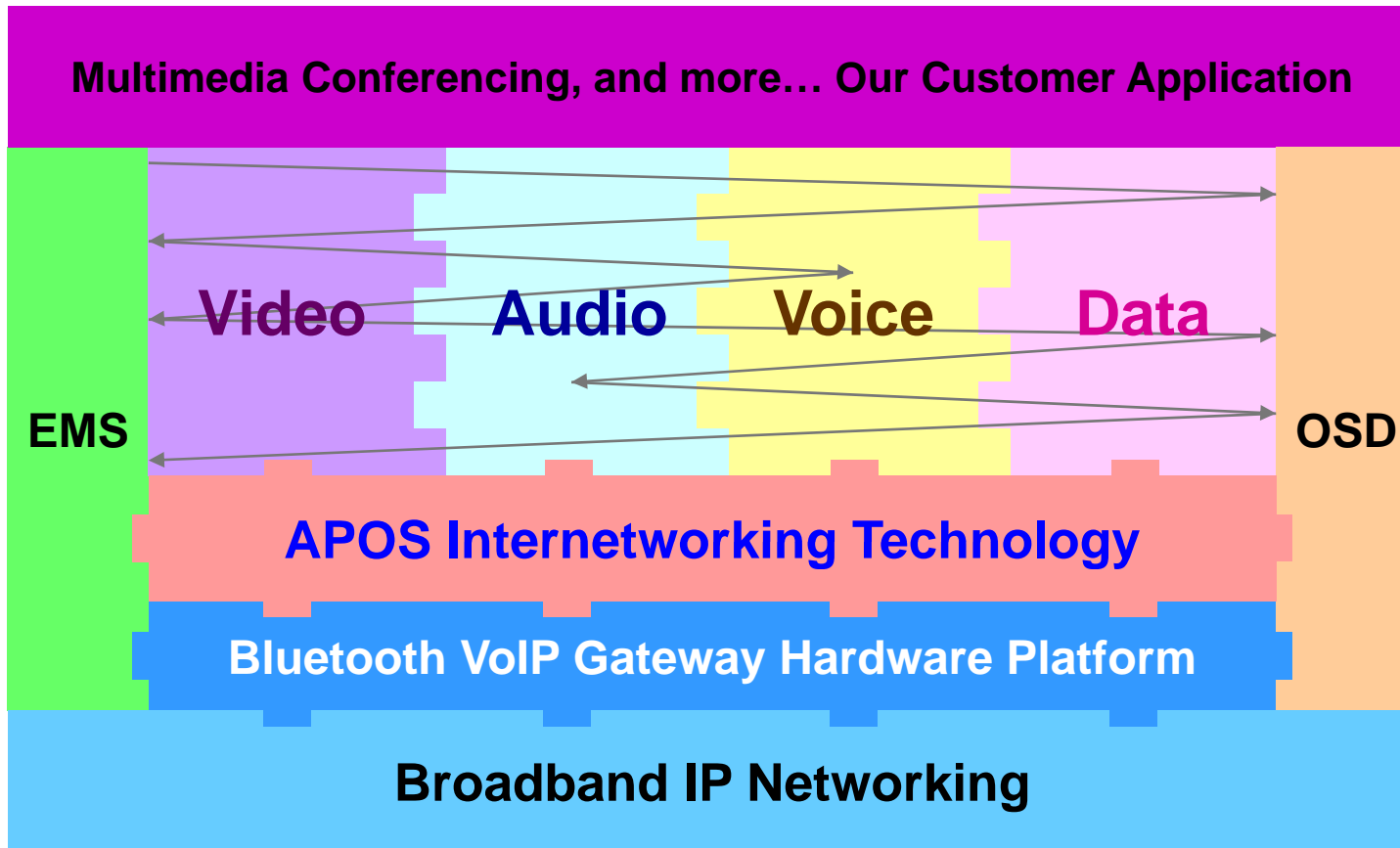
**Advanced Voice  
Traffic QoS Mechanism**

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# APOS Technology

AP-LMS3500 Dual Power 36-Port Bluetooth VoIP Gateway



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

# Hardware Specification

AP-LMS3500 Dual Power 36-Port Bluetooth VoIP Gateway

RISC  
CPU

High-end  
DSP

- RISC Microprocessor Computing Power
- Nine(9) Module Slot for Bluetooth, 2G, 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)
  - Digital E1/T1 Module (AP-N1-E1)
  - Hot-Swap
- Network Interface
  - Two(2) 10/100Mbps Fast Ethernet (RJ45)
- RS232C Console Interface for CLI
- Run LED, LAN LED, Port LEDs
- Module Type Dual Power Supply



# Hardware Specification

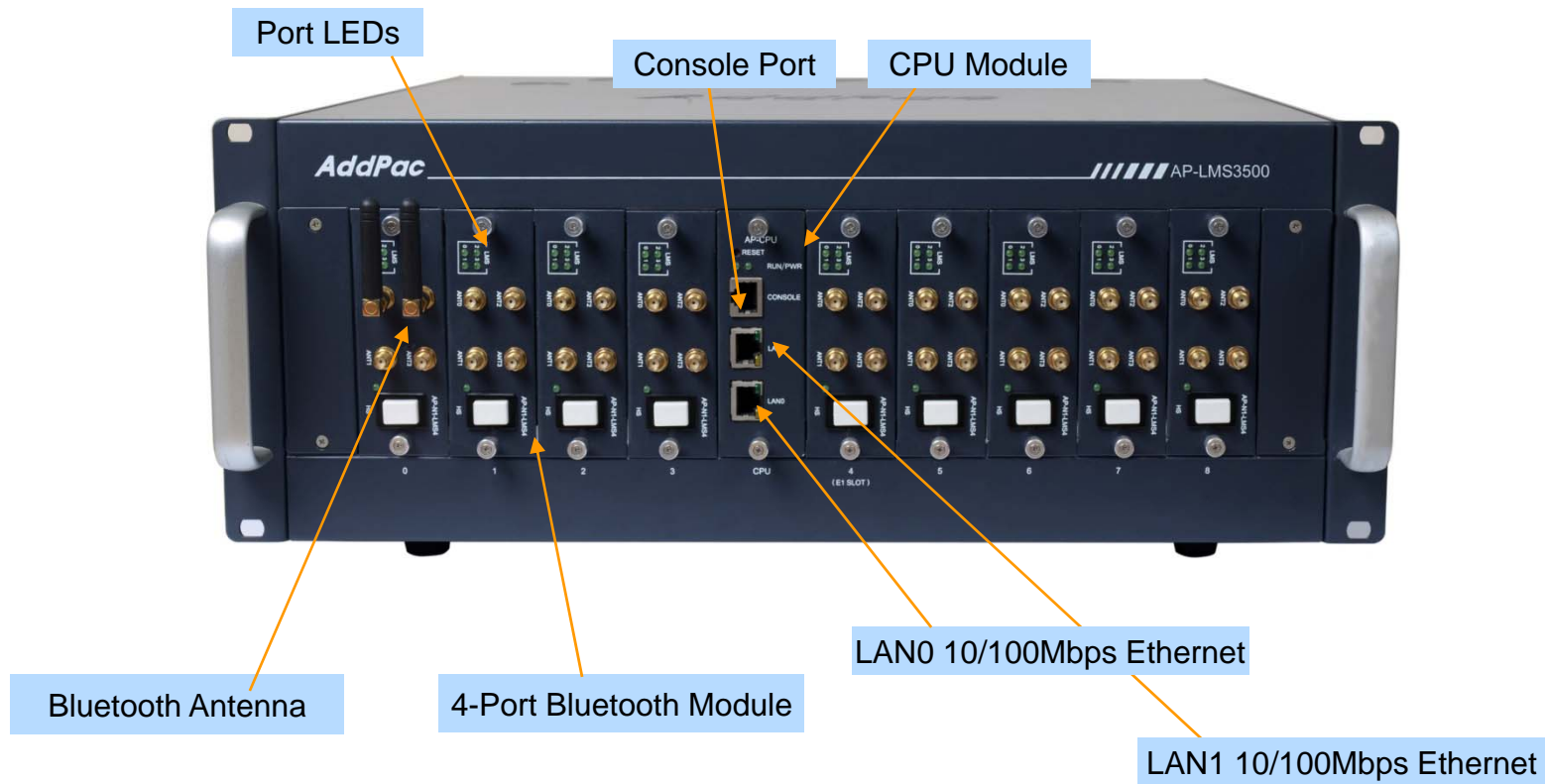
## AP-LMS3500 Dual Power 36-Port Bluetooth VoIP Gateway

<b>AP-LMS3500 LMS VoIP Gateway</b>	<b>Basic Specifications</b>
<b>Mobile Interface</b>	Nine(9) Module Slots for Bluetooth, 2G, 3G WCDMA, etc
	AP-N1-LMS4, AP-N1-3G4I, AP-N1-FXS8, AP-N1-FXO8, AP-N1-FXS4O4, AP-N1-E1
<b>Ethernet Interface</b>	2-Ports 10/100Mbps Ethernet Interface(RJ-45)
<b>Flash Memory</b>	512Mbyte Flash
<b>Base Memory</b>	128Mbyte High-Speed SDRAM
<b>Power Requirement</b>	Power Supply / VAC 110~220V, 50/60Hz, 5V 30A
<b>Operating Temperature</b>	0°C ~ 45°C (32 °F ~ 122°F)
<b>Storage Temperature</b>	-40°C ~ 85°C (-40°C ~ 185°F)
<b>Relative Humidity</b>	5% ~ 95% (Non-condensing)
<b>Dimensions</b>	H x W x D(227mm X 440mm X 374mm )
<b>Weight(kg)</b>	12.9Kg

# Hardware Specification

AP-LMS3500 Dual Power 36-Port Bluetooth VoIP Gateway

## Front Side View





# Hardware Specification

AP-LMS3500 Dual Power 36-Port Bluetooth VoIP Gateway

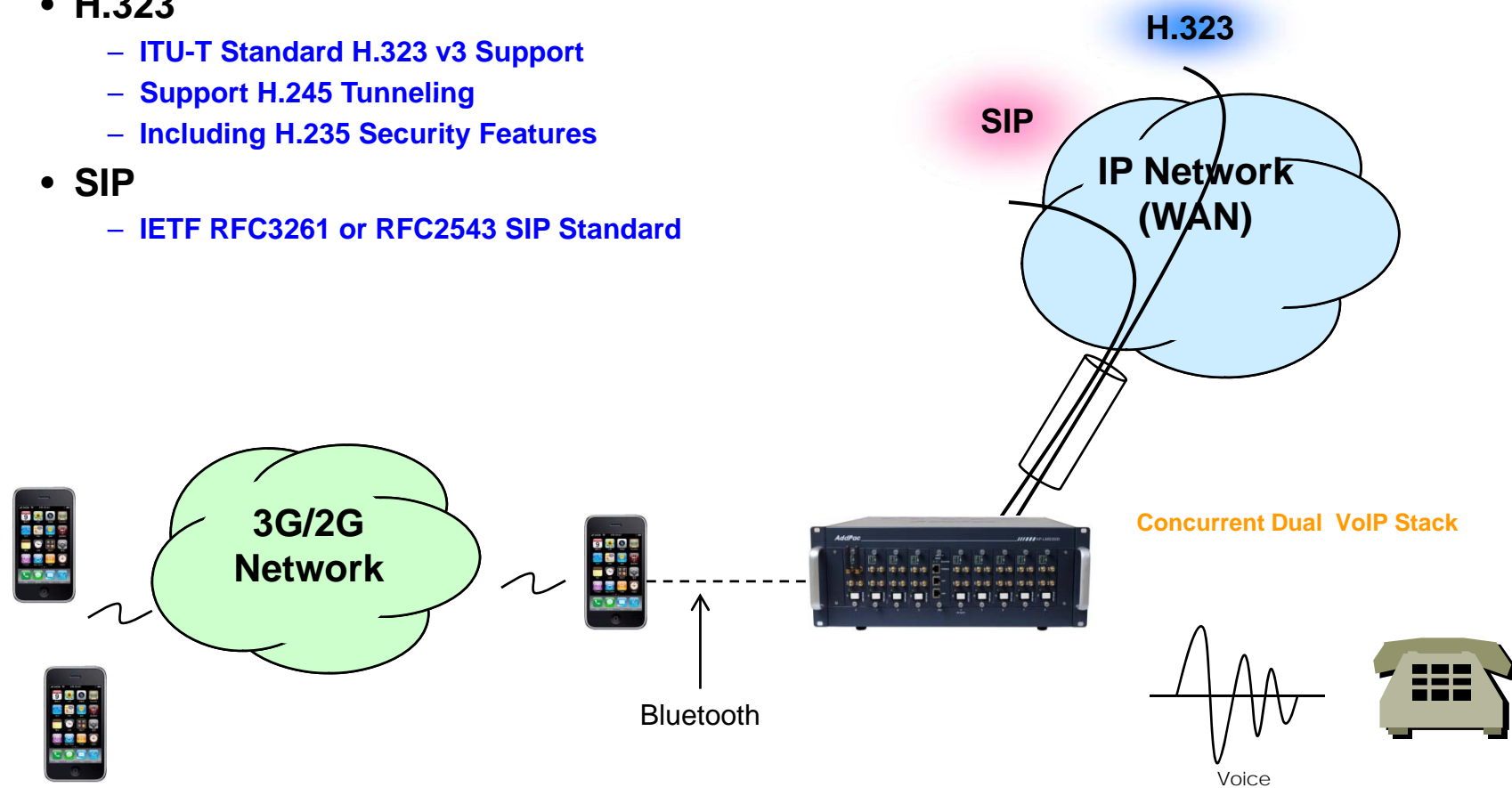
## Back Side View



# VoIP (Voice over IP) Service

AP-LMS3500 Dual Power 36-Port Bluetooth 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-LMS3500 Dual Power 36-Port Bluetooth 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-LMS3500 Dual Power 36-Port Bluetooth 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



# VoIP (Voice over IP) Service

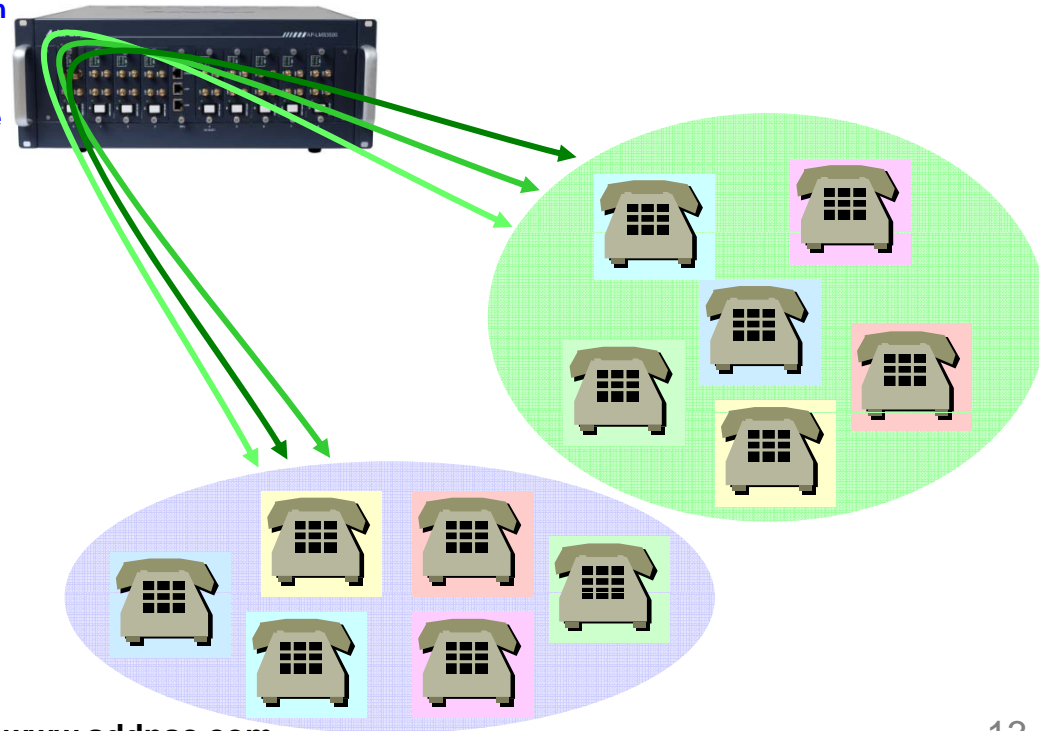
## AP-LMS3500 Dual Power 36-Port Bluetooth VoIP Gateway

### • 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

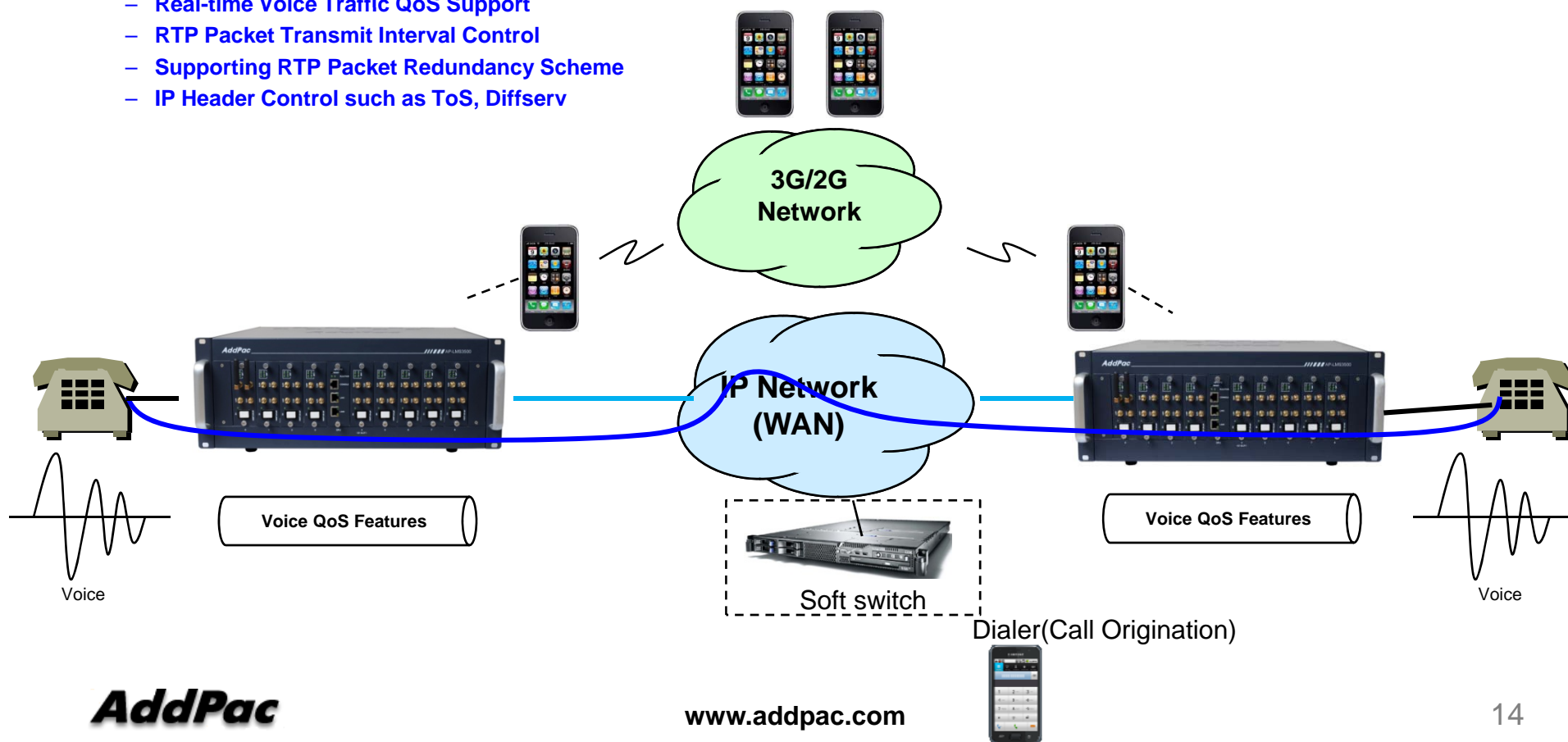
AP-LMS3500 Dual Power 36-Port Bluetooth VoIP Gateway

- 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-LMS3500 Dual Power 36-Port Bluetooth VoIP Gateway

## Basic Network Protocols

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

## Routing Protocol

- IPv4 : Static

## Service Protocol

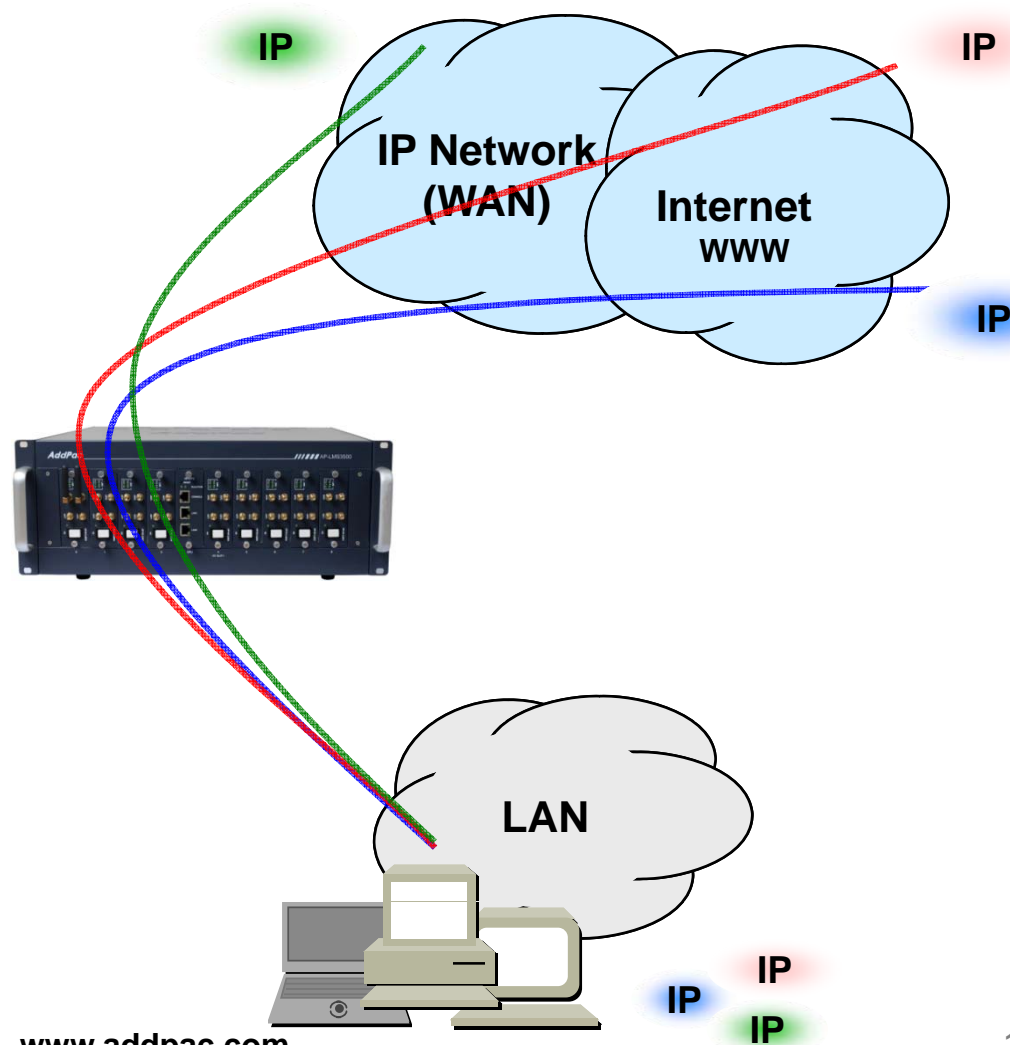
- FTP, Telnet, TFTP, DHCP Server/Relay, SNMP Server
- CDP (Cisco Discovery Protocol)
- DNS Resolver , DDNS(nsupdate)
- Bridge
- Syslog

## 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-LMS3500 Dual Power 36-Port Bluetooth 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**

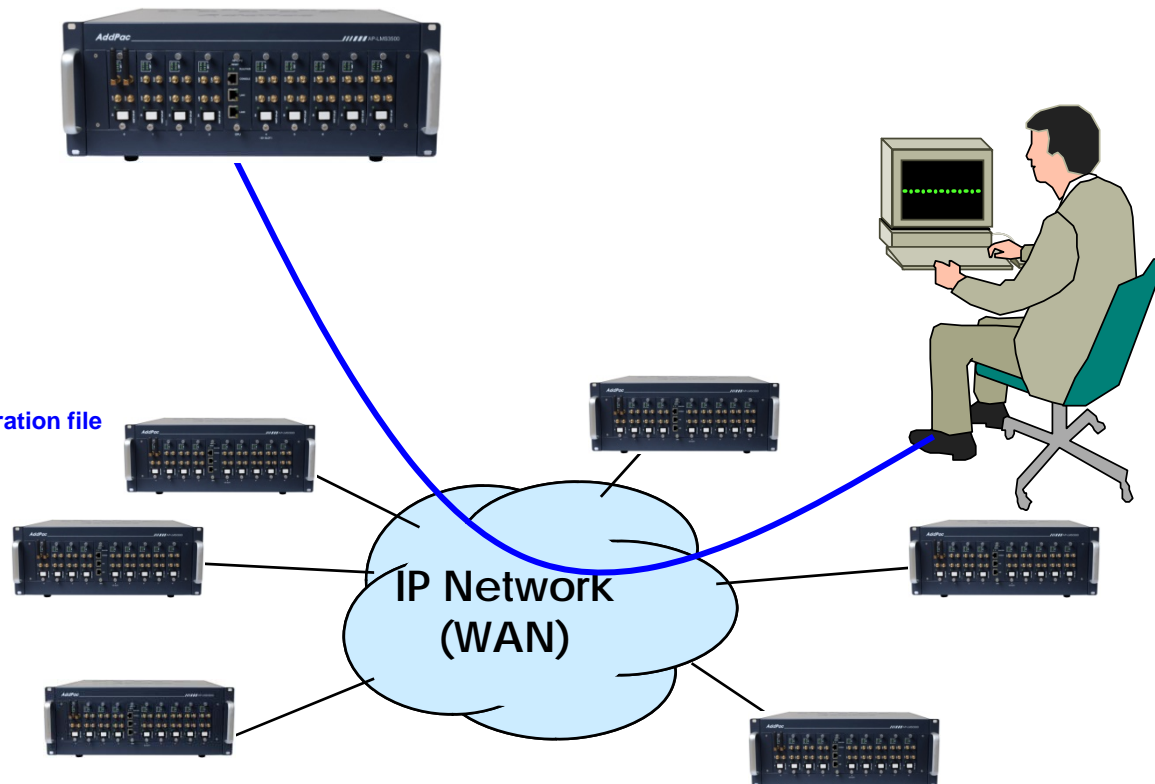
- HTTP server based APOS image and configuration file auto-upgrade support

- **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-LMS3500 Dual Power 36-Port Bluetooth VoIP Gateway

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

- System
  - Language
  - WAN Setup
  - LAN Setup
  - NAT
  - NTP
  - System Time
  - File Browser
- Basic
- Advanced
- Miscellaneous
- LCR
- SMS

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

**System Information**

Network Information

Static	172.17.205.25
WAN LINK Status	100Mbps FULL Duplex Link UP
LAN LINK Status	Link Down
Voice Interface Module	None :: None : None
VoIP Protocol	SIP
Registration Status	Unregistered
Total Calls	0

Port Status

SLOT	Port	Port Group			
		0(BLT)	1(BLT)	2(BLT)	3(BLT)
SLOT 1	Status	I	I	I	I
	Select	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	[ Unblock ] [ Block ]				

Connection State : (Connected) (Disconnected || Blocked)  
Call State : (Idle) (Ring || Dial) (Called) (Calling) (Blocked) (Paused)

Call State

Port	Direction	Duration	Calling Number	Called Number	CODEC	Src/Dest. IP
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**Information**  
Display the current system version and status summary

AddPac Technology  
Model : LMS2500\_G2  
H/W Version : 2.0  
S/W Version : 8.51.018  
Smart Web Version : 0.4  
Smart Web Build : Mar 21 2018

Voice Interface  
None :: None : None  
Protocol : SIP  
Status : Unregistered  
Current Calls : 0  
CallNetwork : Static  
172.17.205.25  
Mac Address: 0002.a400.0000

Unread Message:  
P1:0(0)  
P1:1(0)  
P1:2(0)  
P1:3(0)

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

**Workspace**  
Workspace for detailed action

# Smart Web Manager : SIP Server (Example)

AP-LMS3500 Dual Power 36-Port Bluetooth VoIP Gateway

**Smart Web Manager**  
www.addpac.com

**System** +

**Basic** -

- Protocol
- Server SIP
- Server H.323
- E1/T1 Trunk
- FXO Extension
- Mobile Extension
- E1/T1 Extension
- DTMF/CODEC
- VoIP Dial Plan
- FXO DialPlan
- Mobile Dial Plan
- Static Route
- Hot Line
- ANI Route

**Advanced** +

**Miscellaneous** +

**LCR** +

**SMS** +

**SIP (Session Initiation Protocol)**

Use SIP Server  Yes  No

Primary SIP Server  :5060 Server address and Port (default 5060)

Secondary SIP Server  :5060 Server address and Port (default 5060)

User Name

User Password  (encrypted)

Local Domain Name  (SIP userpart of authentication)

SIP Signaling Port  5060 (default 5060, between 1 to 65535)

Register Expiration  60 (in seconds, default 60, between 10 to 86400)

Session Re-Fresh  INVITE  UPDATE

Session Expire Time  1800 (in seconds, default 1800, between 30 to 86400, 0 = disable)

Min-SE  1800 (in seconds, default 1800, between 30 to 86400)

Apply

**Information**

AddPac Technology  
Model : LMS2500\_G2  
H/W Version : 2.0  
S/W Version : 8.51.018  
Smart Web Version : 0.4  
Smart Web Build : Mar 21 2018  
Voice Interface  
None : None : None  
Protocol : SIP  
Status : Unregistered  
Current Calls : 0  
CallNetwork : Static  
[172.17.205.25](http://172.17.205.25)  
Mac Address: 0002.a400.0000  
Unread Message:  
P1:0(0)  
P1:1(0)  
P1:2(0)  
P1:3(0)

**Description**

Configure the settings for SIP.  
Contact your service provider  
for the settings

**AddPac VTO Service**

VoIP Traffic Optimizer

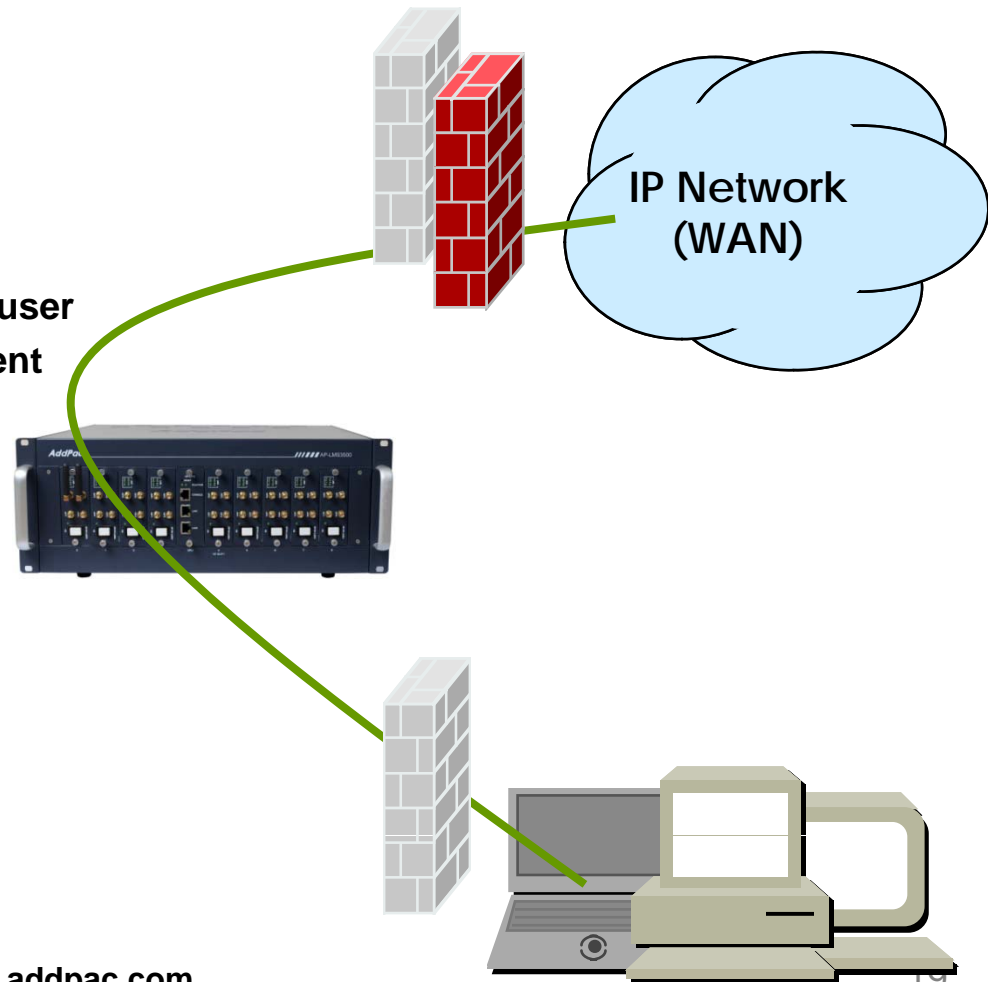
sales@addpac.com  
vtosales@addpac.com

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

# Security Management

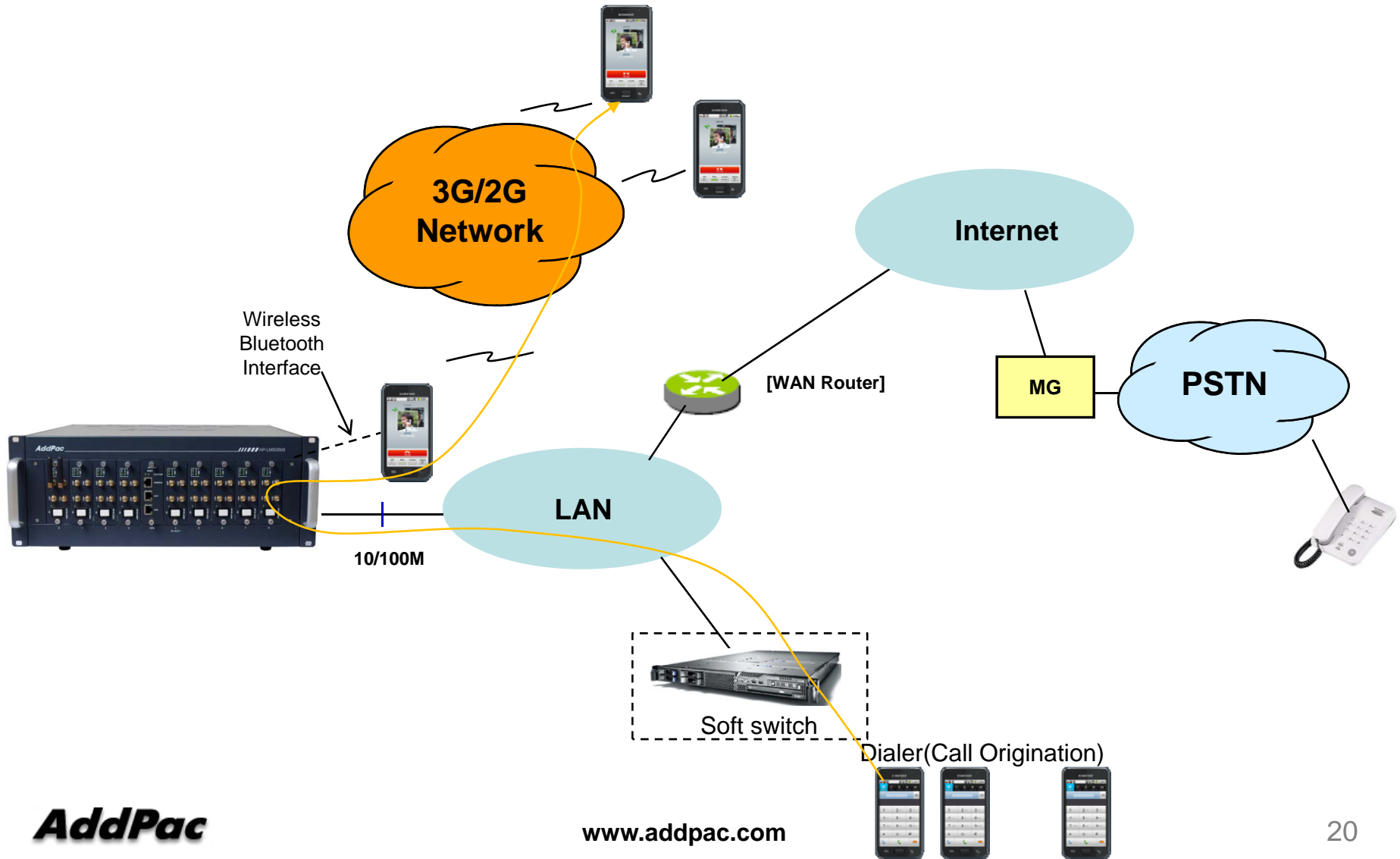
AP-LMS3500 Dual Power 36-Port Bluetooth VoIP Gateway

- 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-LMS3500 Dual Power 36-Port Bluetooth VoIP Gateway



# Ordering Information

- AP-LMS3500 Dual Power 36-Port Bluetooth VoIP Gateway Hardware
  - AP-LMS3500 Bluetooth VoIP Gateway Main Body
  - RISC Microprocessor with High-end Programmable DSP Architecture
  - Nine(9) Module Slots
  - 2-ports 10/100Mbps Fast Ethernet(RJ45)
  - Including Network Cable, Antenna & Module Type Dual Power Supply, etc.
- Built-in APOS Internetworking Software for AP-LMS3500
- 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](http://www.addpac.com)

# LMS VoIP Gateway Series

# Thank you!

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Sales and Marketing

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