



AP-LMS2800

28-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

www.addpac.com

Contents

- Product Overview
- Hardware Specification
- Bluetooth Specification
- APOS Technology
- VoIP (Voice over IP) service
- Advanced QoS Features
- Network Protocols
- Network Management
- Smart Web Management
- Security Management
- Application Service
- Ordering Information



Bluetooth VoIP Module

Product Overview

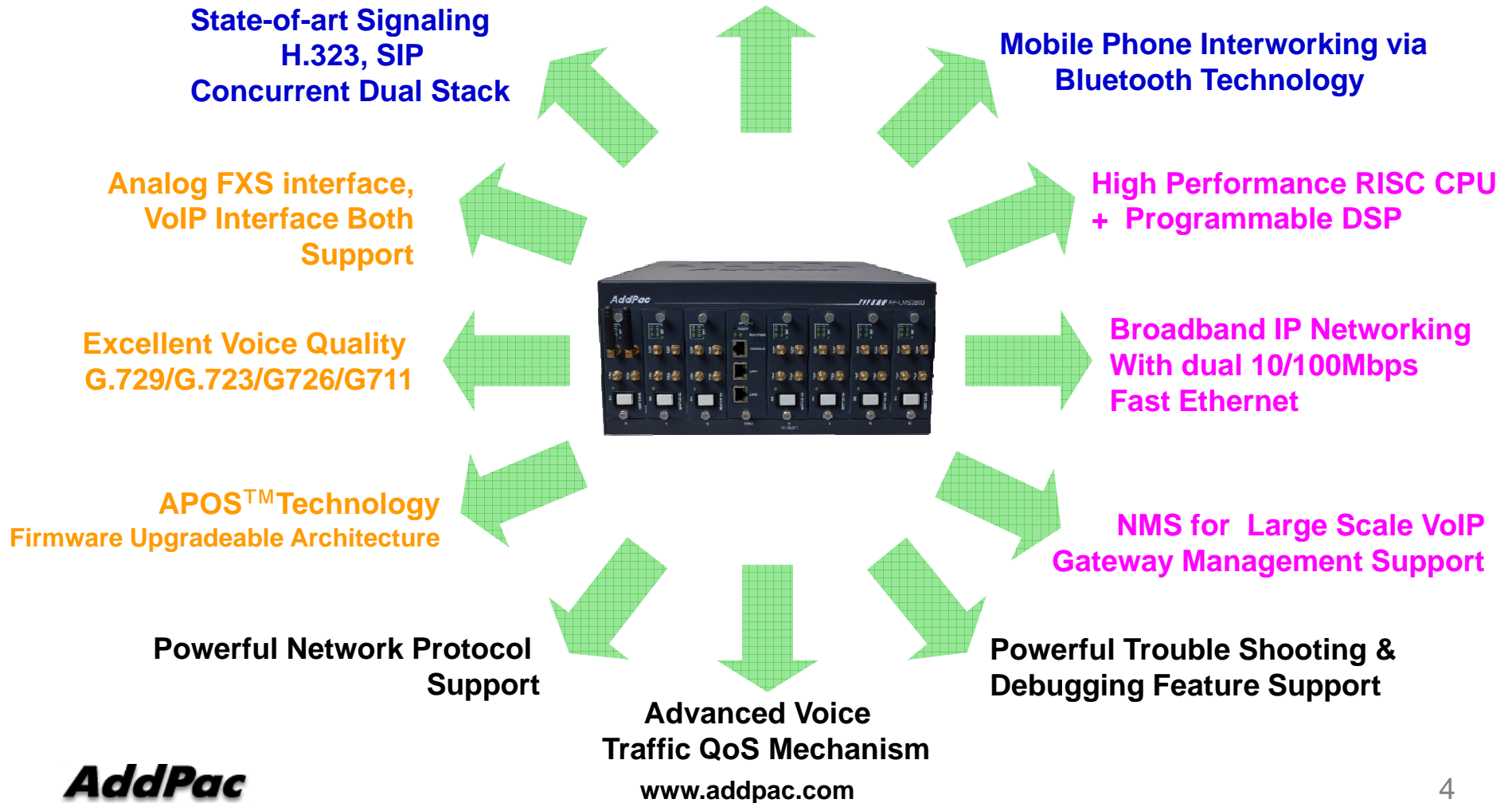
AP-LMS2800 28-Port Bluetooth VoIP Gateway

- Seven(7) Module Slots for 4-Port Bluetooth Module, 8FXS/8FXO Analog Interface, etc (Up to 28-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

Product Highlights

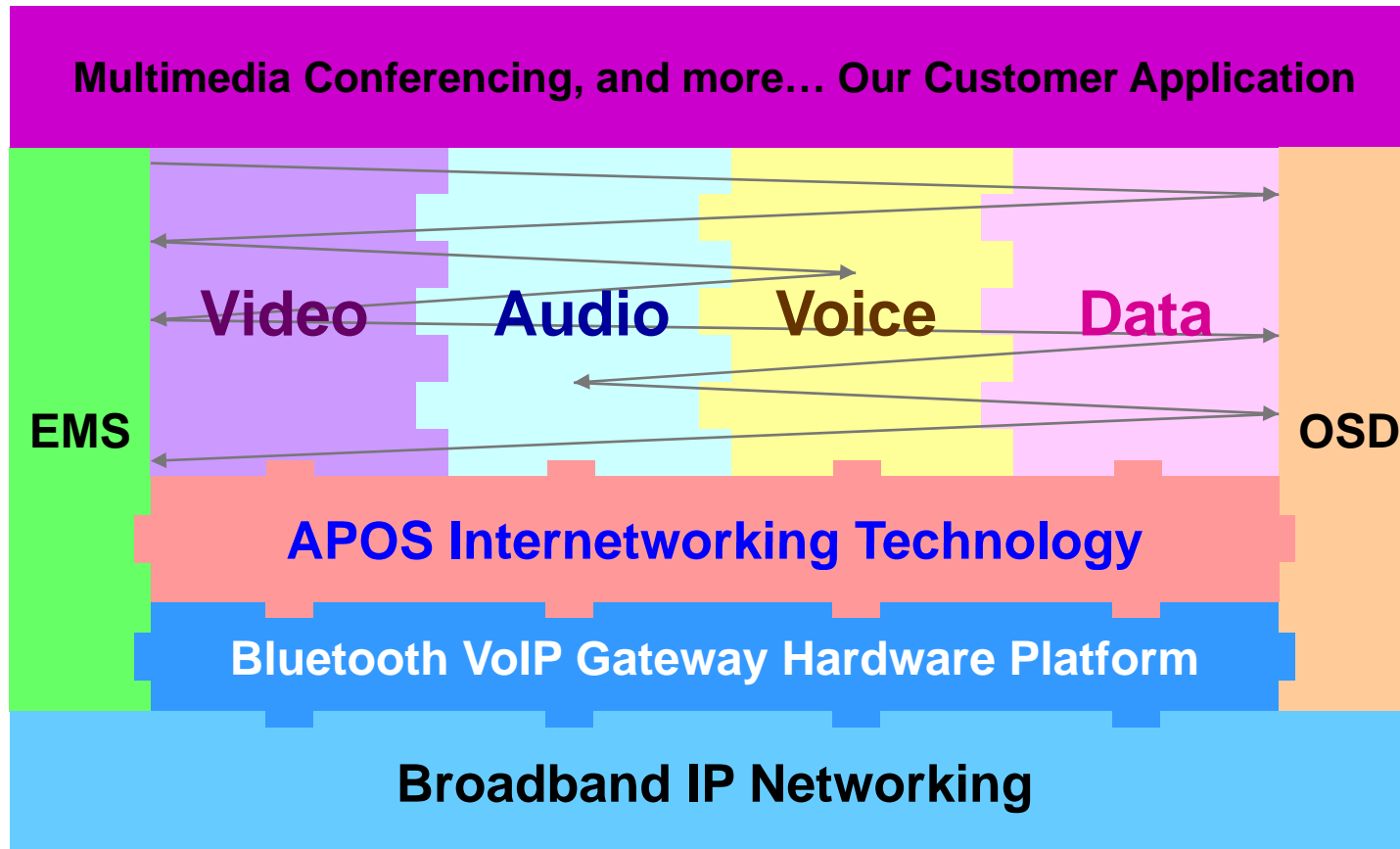
AP-LMS2800 28-Port Bluetooth VoIP Gateway

Powerful Bluetooth VoIP Gateway



APOS Technology

AP-LMS2800 28-Port Bluetooth VoIP Gateway



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

Hardware Specification

AP-LMS2800 28-Port Bluetooth VoIP Gateway

RISC
CPU

High-end
DSP

- RISC Microprocessor Computing Power
- Seven(7) 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
- Internal Power Supply



Hardware Specification

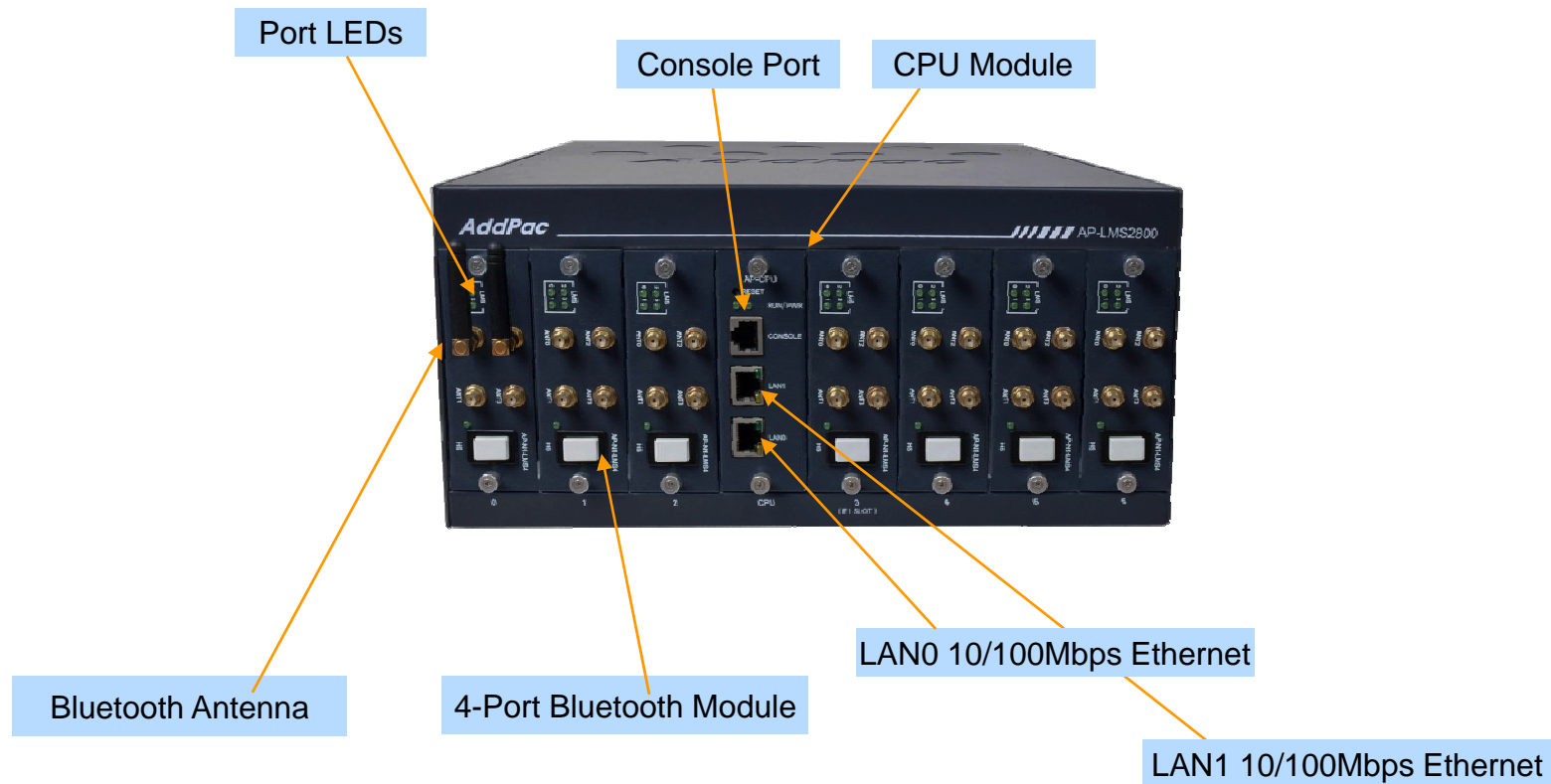
AP-LMS2800 28-Port Bluetooth VoIP Gateway

AP-LMS2800 LMS VoIP Gateway	Basic Specifications
Mobile Interface	Seven(7) 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
Ethernet Interface	2-Ports 10/100Mbps Ethernet Interface(RJ-45)
Flash Memory	512Mbyte Flash
Base Memory	128Mbyte High-Speed SDRAM
Power Requirement	Power Supply / VAC 110~220V, 50/60Hz, 5V 30A
Operating Temperature	0°C ~ 45°C (32 °F ~ 122°F)
Storage Temperature	-40°C ~ 85°C (-40°C ~ 185°F)
Relative Humidity	5% ~ 95% (Non-condensing)
Dimensions	H x W x D(147mm x 303.5mm x 300mm)
Weight(kg)	7.3Kg

Hardware Specification

AP-LMS2800 28-Port Bluetooth VoIP Gateway

Front Side View



Hardware Specification

AP-LMS2800 28-Port Bluetooth VoIP Gateway

Back Side View



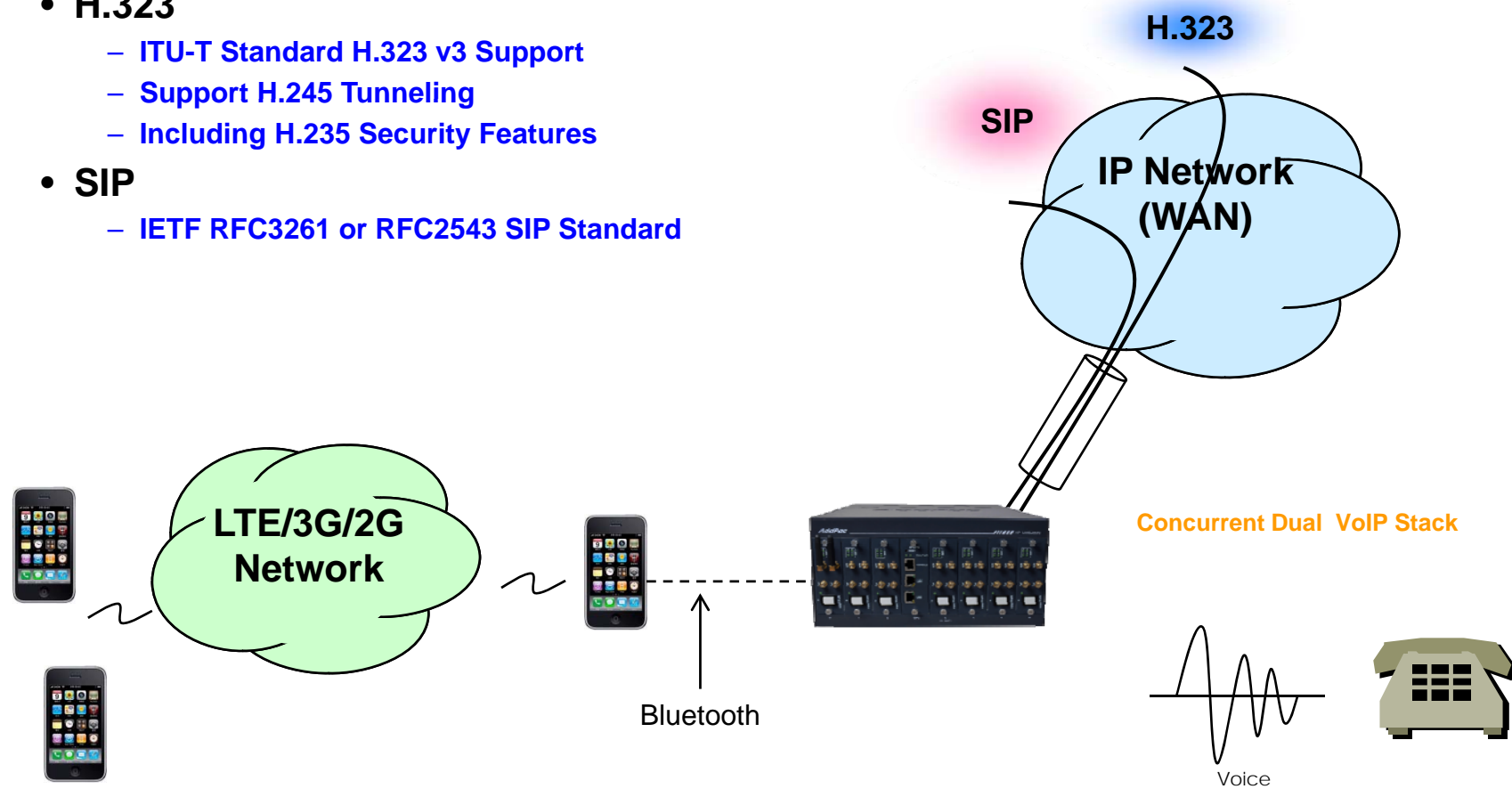
Power Input

Power Switch

VoIP (Voice over IP) Service

AP-LMS2800 28-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-LMS2800 28-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-LMS2800 28-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 RTP 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



LTE/3G/2G
Network

VoIP (Voice over IP) Service

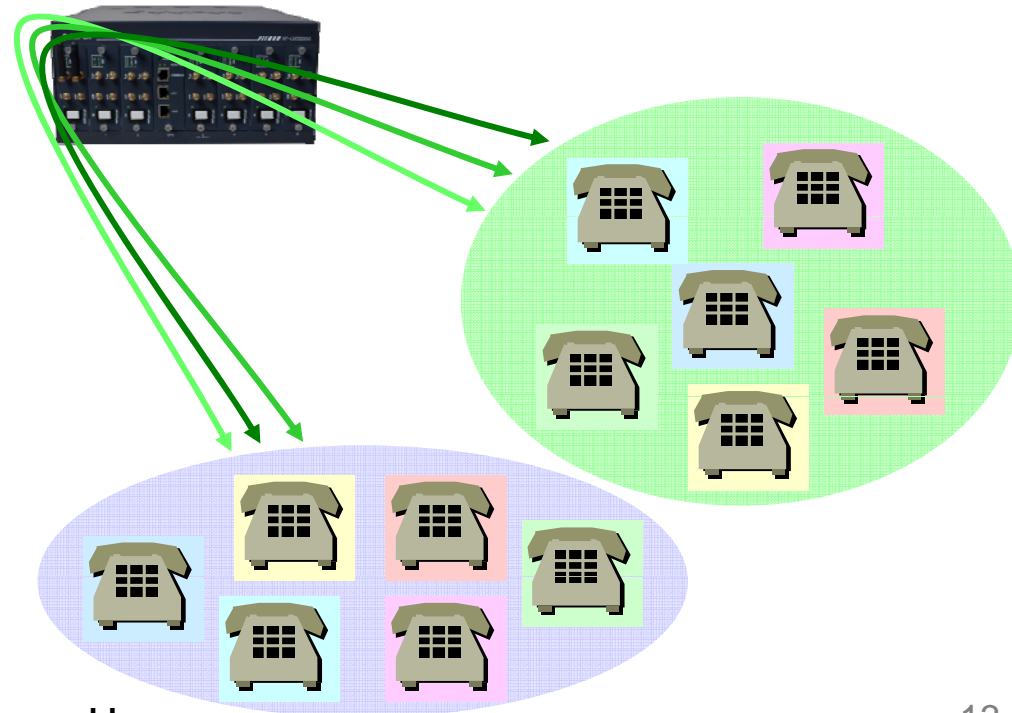
AP-LMS2800 28-Port Bluetooth VoIP Gateway

• 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

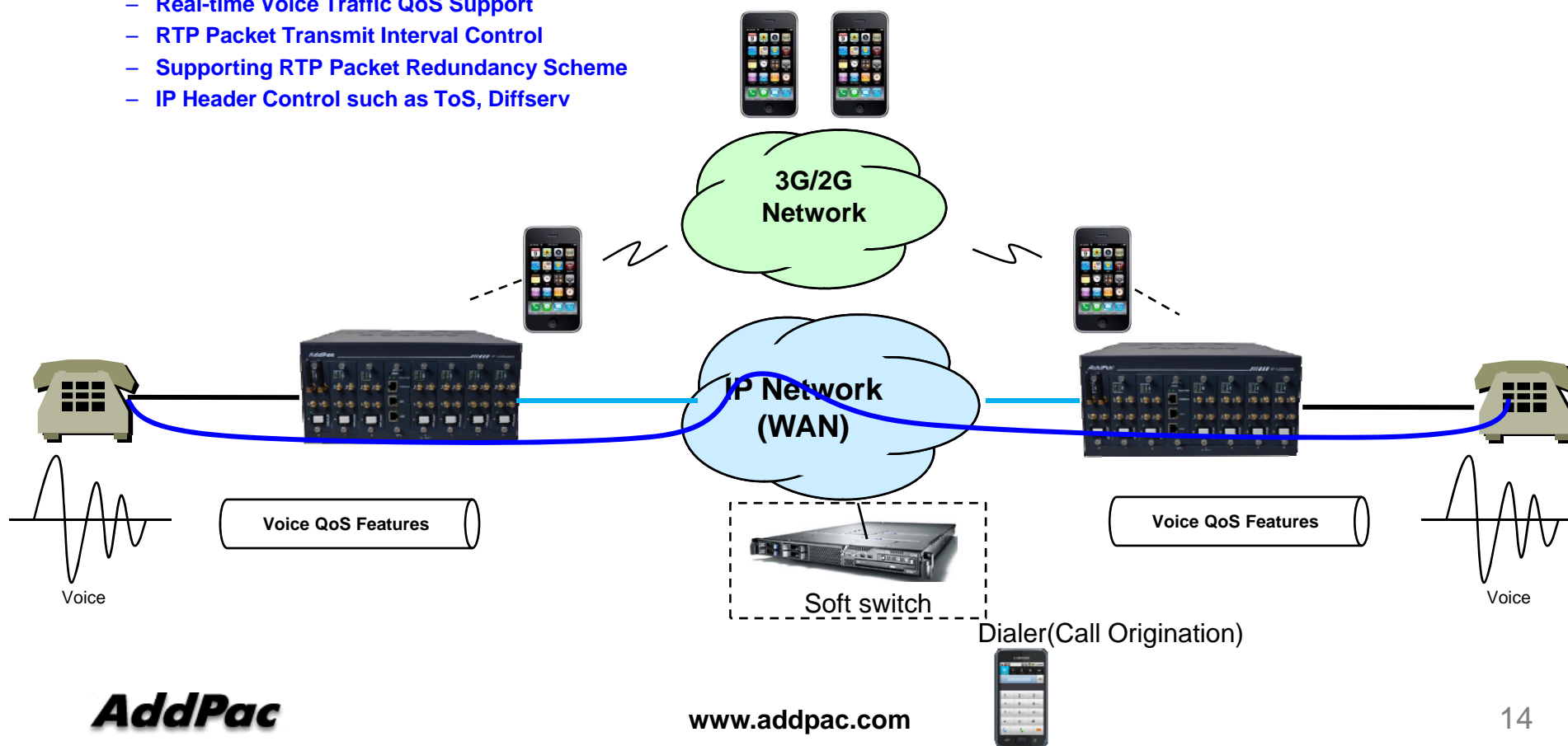
AP-LMS2800 28-Port Bluetooth VoIP Gateway

- 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-LMS2800 28-Port Bluetooth VoIP Gateway

Basic Network Protocols

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

Routing Protocol

- IPv4 : Static

Service Protocol

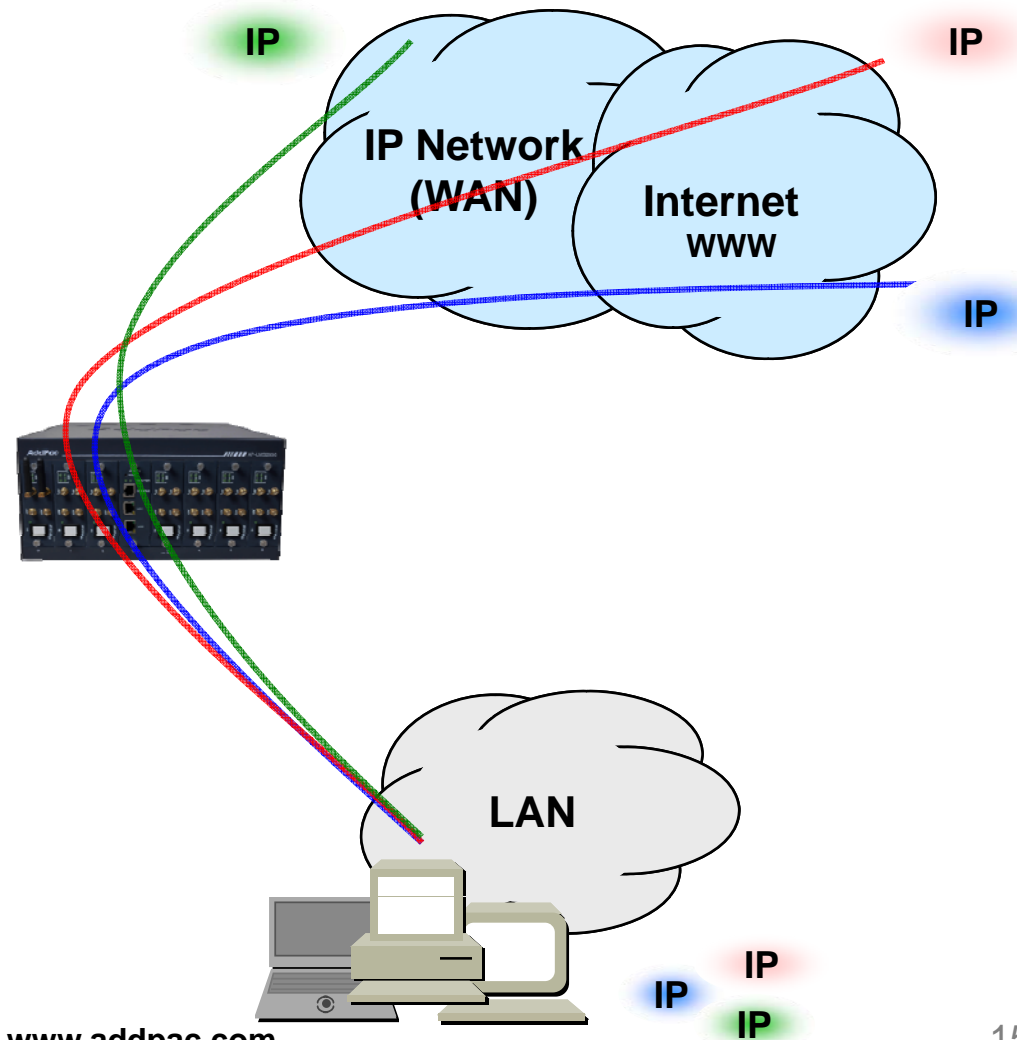
- FTP, Telnet, TFTP, DHCP Server/Relay, SNMP Server
- CDP (Cisco Discovery Protocol)
- DNS Resolver , DDNS(nsupdate)
- Bridge
- Syslog

IPv4 Address Configuration

- Fixed (Static)
- DHCP
- PPPoE

Miscellaneous

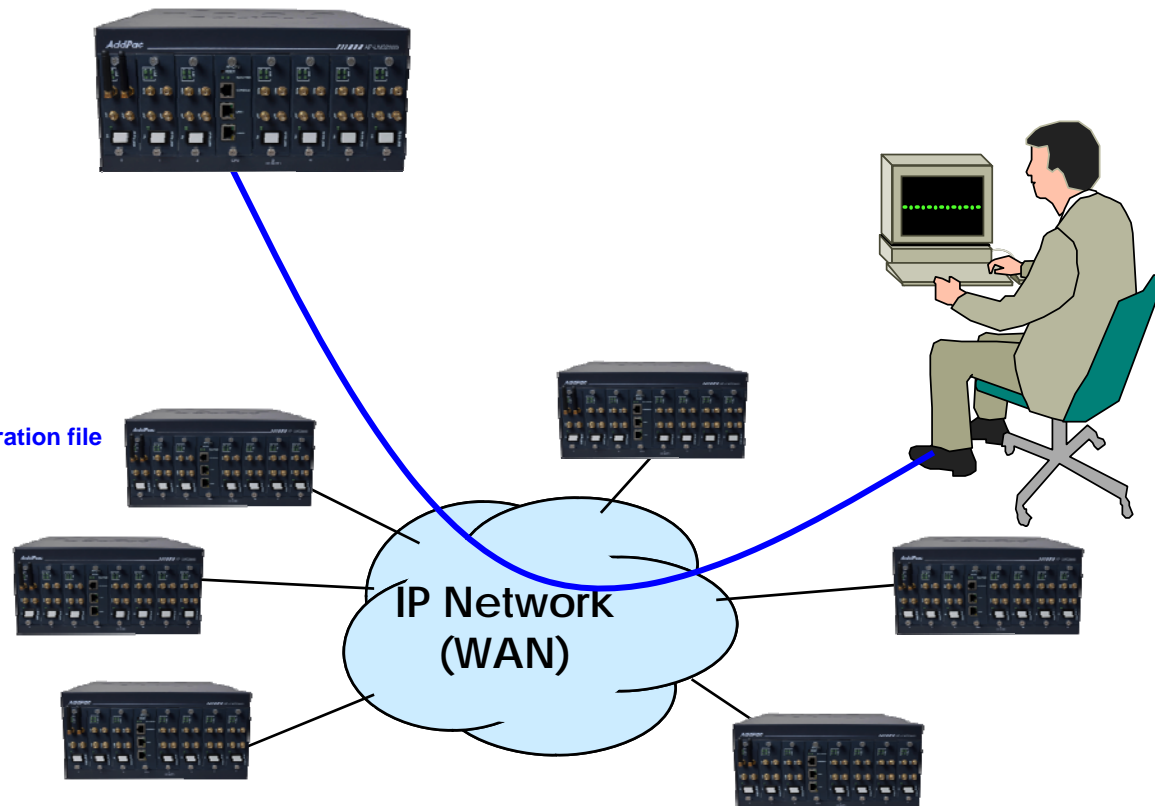
- Cisco Style CLI
- Standard & Extended IPv4 Access List
- Multi-level User Account Management
- IP accounting
- STUN Client



Network Management

AP-LMS2800 28-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-LMS2800 28-Port Bluetooth 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 summary

Workspace
Workspace for detailed action

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

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
------	-----------	----------	----------------	---------------	-------	--------------

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
Mac Address: 0002.a400.0000

Unread Message:

- P1:0(0)
- P1:1(0)
- P1:2(0)
- P1:3(0)

Description

AddPac VTO Service

VoIP Traffic Optimizer

sales@addpac.com
vtsales@addpac.com

Smart Web Manager : SIP Server (Example)

AP-LMS2800 28-Port Bluetooth VoIP Gateway

Smart Web Manager
www.addpac.com

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](#)
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

Smart Web Manager : SIP Server (Example)

AP-LMS2800 28-Port Bluetooth VoIP Gateway

Smart Web Manager
www.addpac.com

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
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

Smart Web Manager : Mobile LCR/Tariff Policy

AP-LMS2800 28-Port Bluetooth VoIP Gateway

Smart Web Manager
www.addpac.com

Mobile LCR / Tariff Policy

Tariff Policy

ID	Time Interval	Block Condition	Restore Policy	Billing Unit(voice)	Free Quota	Control
Type	RestoreDay	First(sec)	Others(sec)	Voice(min/count)	SMS(E.A.)	
0	n.a.	quota based	none	0		

Buttons: Delete, Add

SMS Notify

Over Voice Quota: PhoneNumber, Subject

Over SMS Quota: PhoneNumber, Subject

Buttons: Apply

TariffPort & Usage

Port	Tariff Policy	Usage		Reset
		Voice(sec/count : %)	SMS(count : %)	
P1:0	0	120/n.a (0%)	0/n.a (0%)	<input type="checkbox"/>
P1:1	0	0/n.a (0%)	0/n.a (0%)	<input type="checkbox"/>
P1:2	0	0/n.a (0%)	0/n.a (0%)	<input type="checkbox"/>
P1:3	0	0/n.a (0%)	0/n.a (0%)	<input type="checkbox"/>

Buttons: All, Reset

Information Panel:

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](tel: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 tariff group

AddPac VTO Service

VoIP Traffic Optimizer

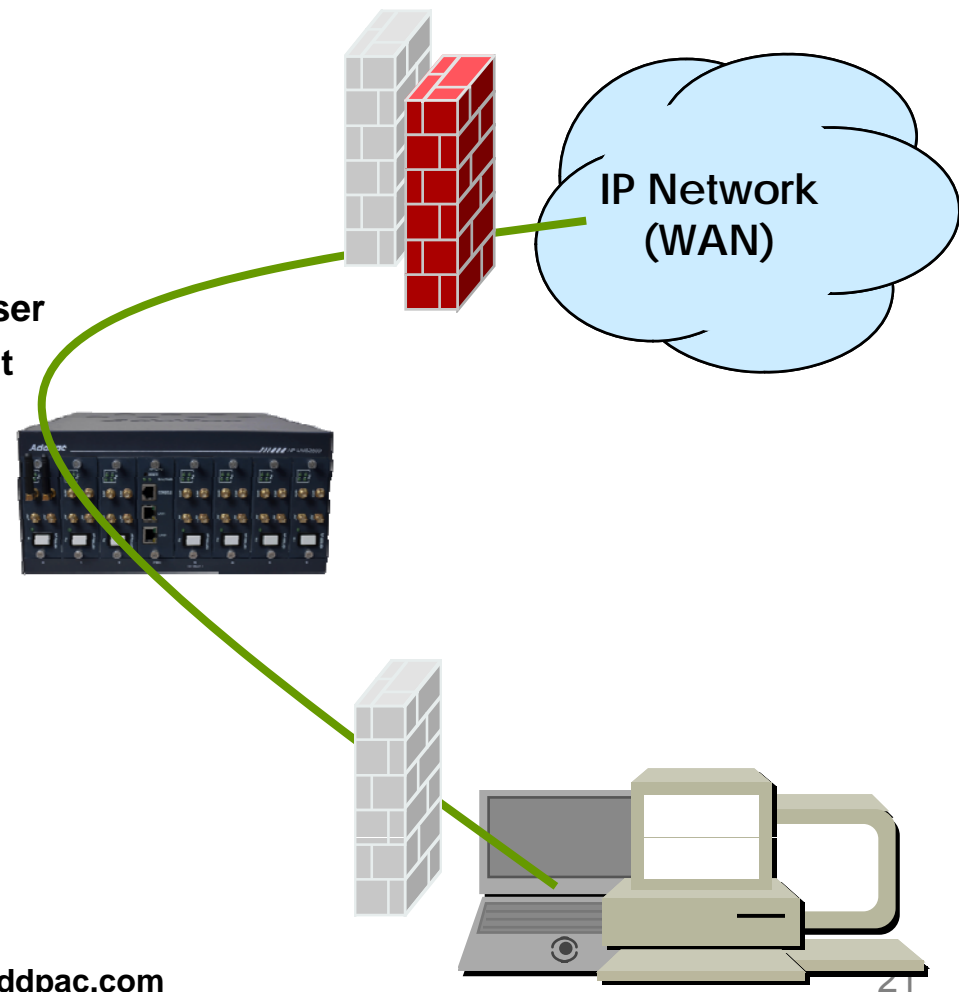
sales@addpac.com
vtosales@addpac.com

©AddPac Technology. all rights reserved.

Security Management

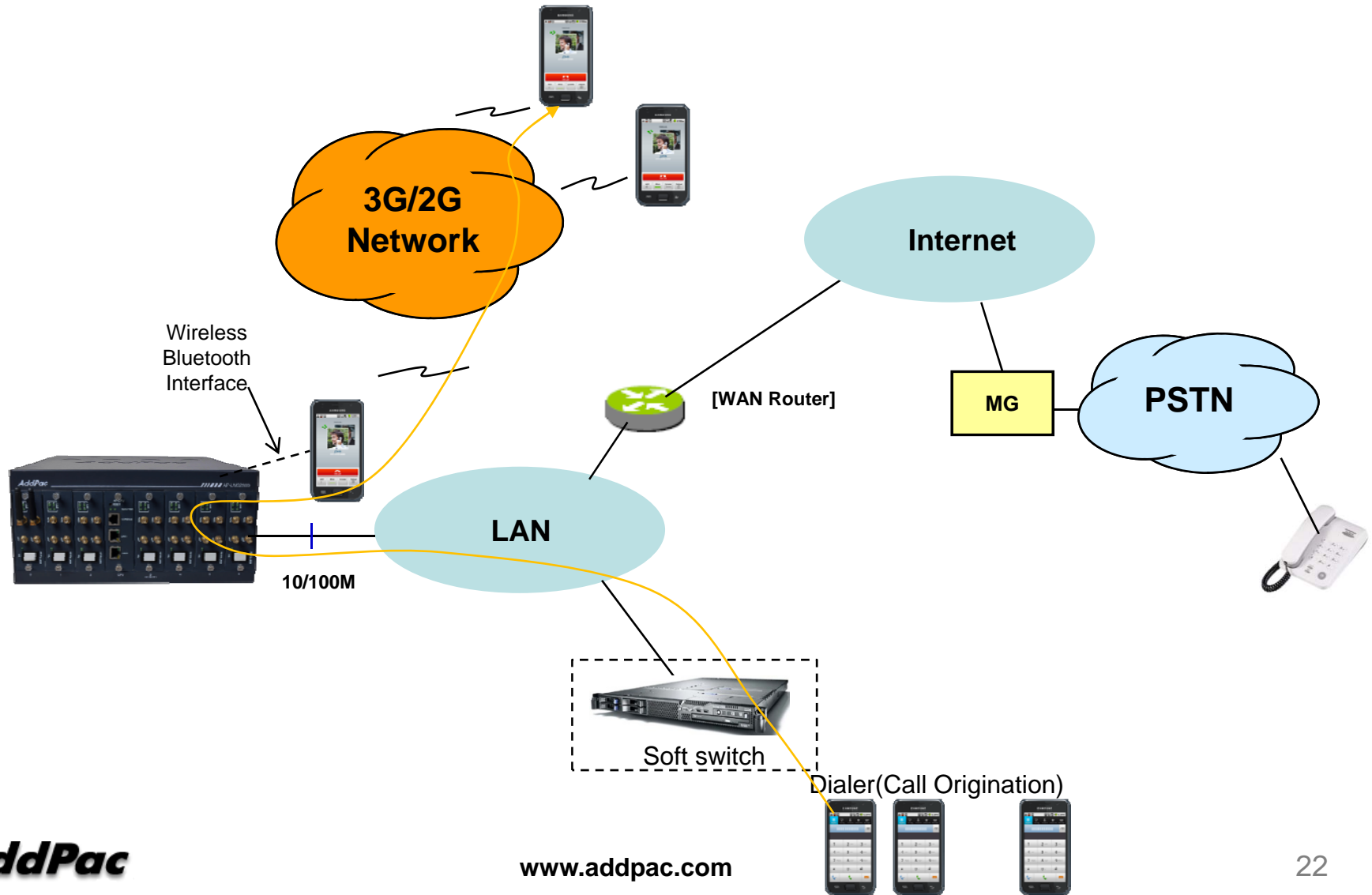
AP-LMS2800 28-Port Bluetooth VoIP Gateway

- 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-LMS2800 28-Port Bluetooth VoIP Gateway



Ordering Information

- AP-LMS2800 28-Port Bluetooth VoIP Gateway Hardware
 - AP-LMS2800 Bluetooth VoIP Gateway Main Body
 - RISC Microprocessor with High-end Programmable DSP Architecture
 - Seven(7) Module Slots
 - 2-ports 10/100Mbps Fast Ethernet(RJ45)
 - Including Network Cable, Antenna & Internal Power Supply, etc.
- Built-in APOS Internetworking Software for AP-LMS2800
- 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

LMS VoIP Gateway Series

Thank you!

AddPac Technology Co., Ltd.
Sales and Marketing

Phone +82.2.568.3848 (KOREA)

FAX +82.2.568.3847 (KOREA)

E-mail sales@addpac.com