



# AP2650CM

## Call Manager VoIP Gateway

High Performance VoIP Gateway Solution

### Preliminary Product Overview



**AddPac**

**AddPac Technology**

2007, Sales and Marketing

[www.addpac.com](http://www.addpac.com)

# Contents

## AP2650CM Call Manager VoIP Gateway

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

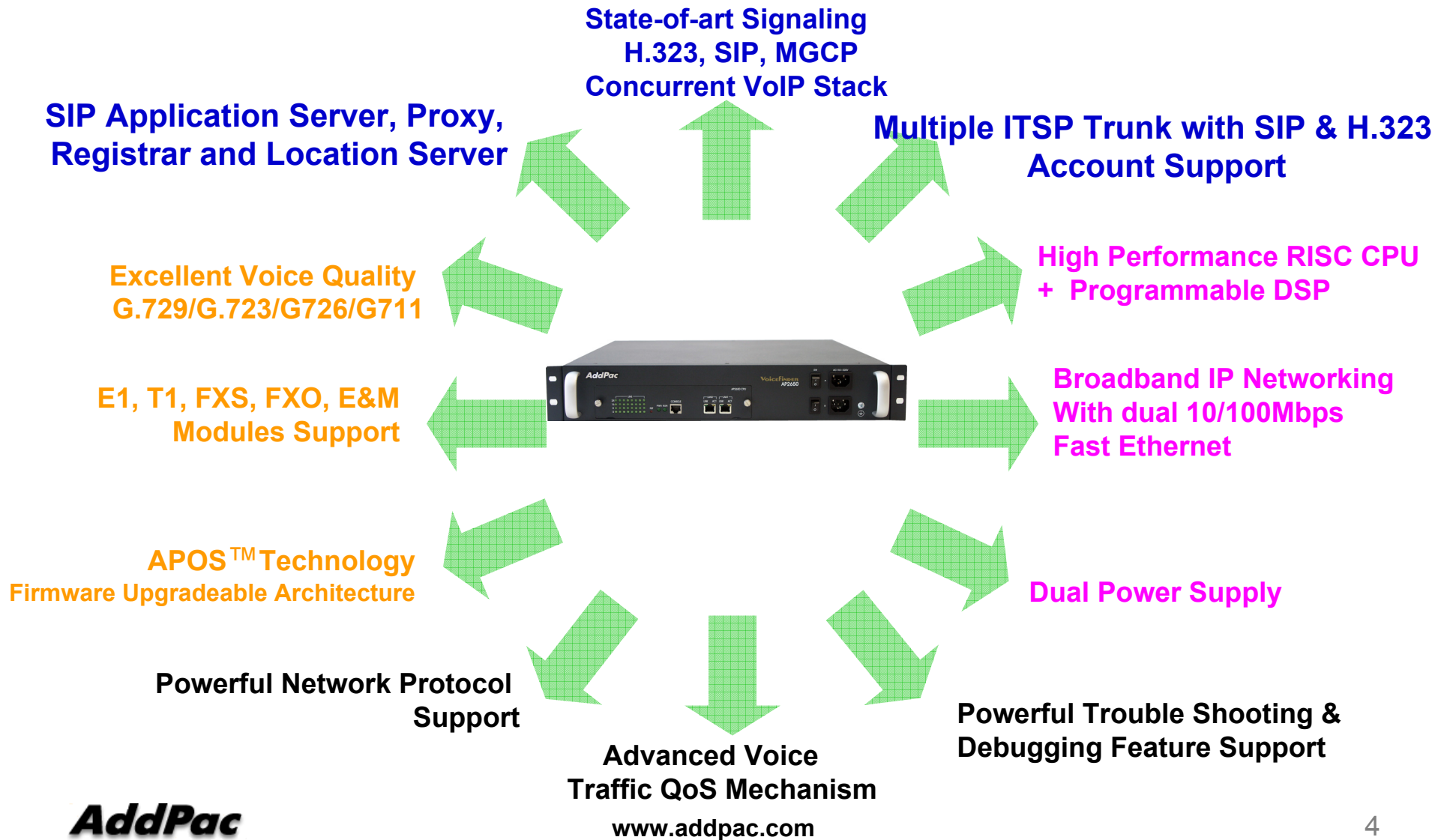
# Product Overview

## AP2650CM Call Manager VoIP Gateway

- H.323/SIP/MGCP VoIP Gateway Signaling Stack Embedded
- SIP Application Server, Proxy, Registrar and Location Server
- Primary IP-PBX Backup Function Support
- High Performance RISC & Programmable DSP Architecture
- Two(2) 10/100Mbps Fast Ethernet
- G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- Firmware Upgradeable Architecture
- Advanced Voice QoS Mechanism
- Four(4) VoIP Module Slot :E1, T1, FXO, FXS, etc
- Dual Power Supply(Optional)

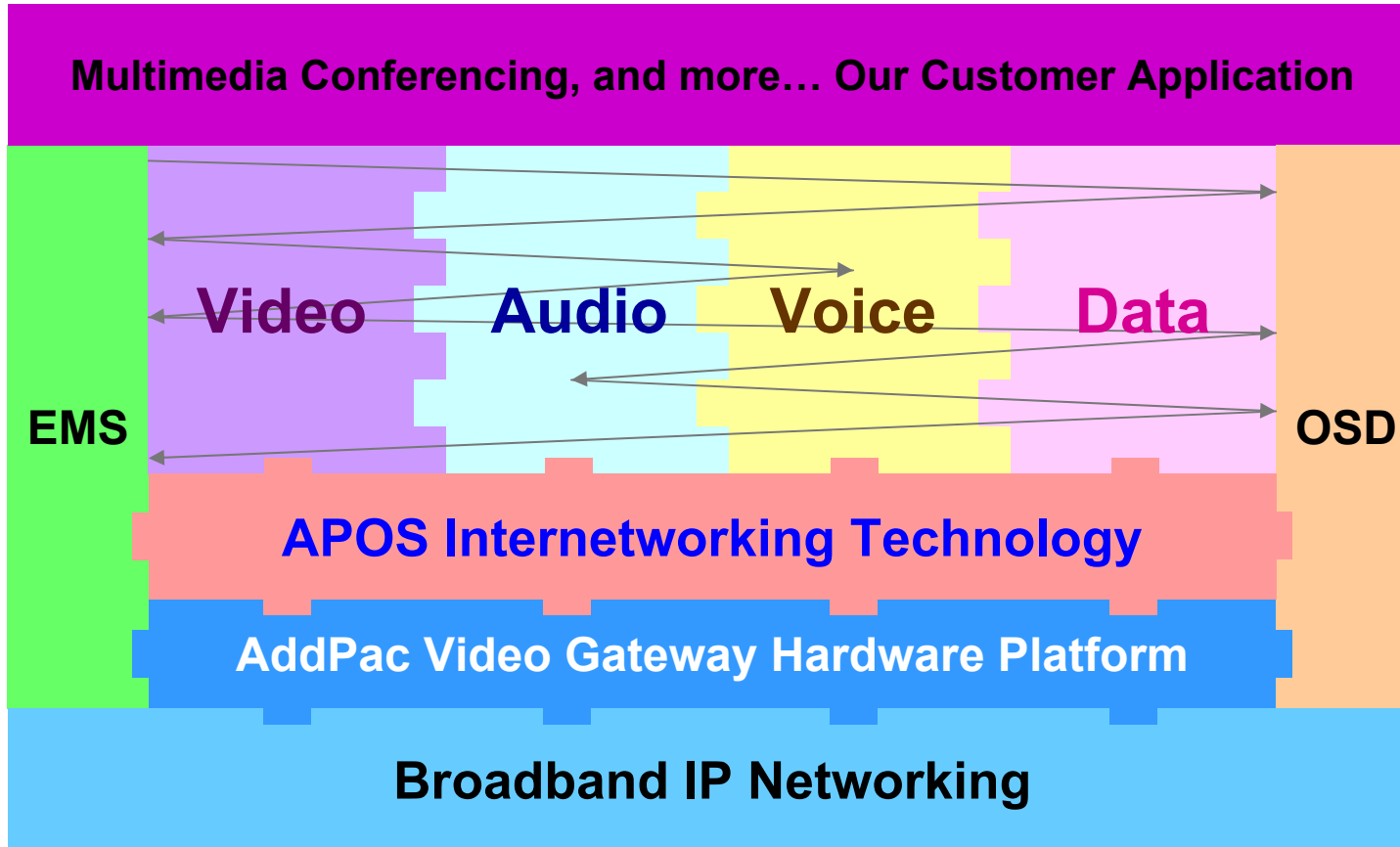
# Product Highlights

## AP2650CM Call Manager VoIP Gateway



# APOS Technology

AP2650CM Call Manager VoIP Gateway



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

# Hardware Specification

AP2650CM Call Manager VoIP Gateway

RISC  
CPU

High-end  
DSP

- **RISC Microprocessor Computing Power**
- **VoIP Gateway + Call Manager**
- **Four(4) VoIP Module Slots**
  - 8-Port FXS Card, 8-Port FXO Card, 4-Port FXS 4-Port FXO Card, E1, T1 Cards
- **Network Interface**
  - Two(2) 10/100Mbps Fast Ethernet (RJ45)
- **RS232C Console Interface**
- **Run LED, LAN LED, Port LEDs**
- **Internal Dual Power Supply**

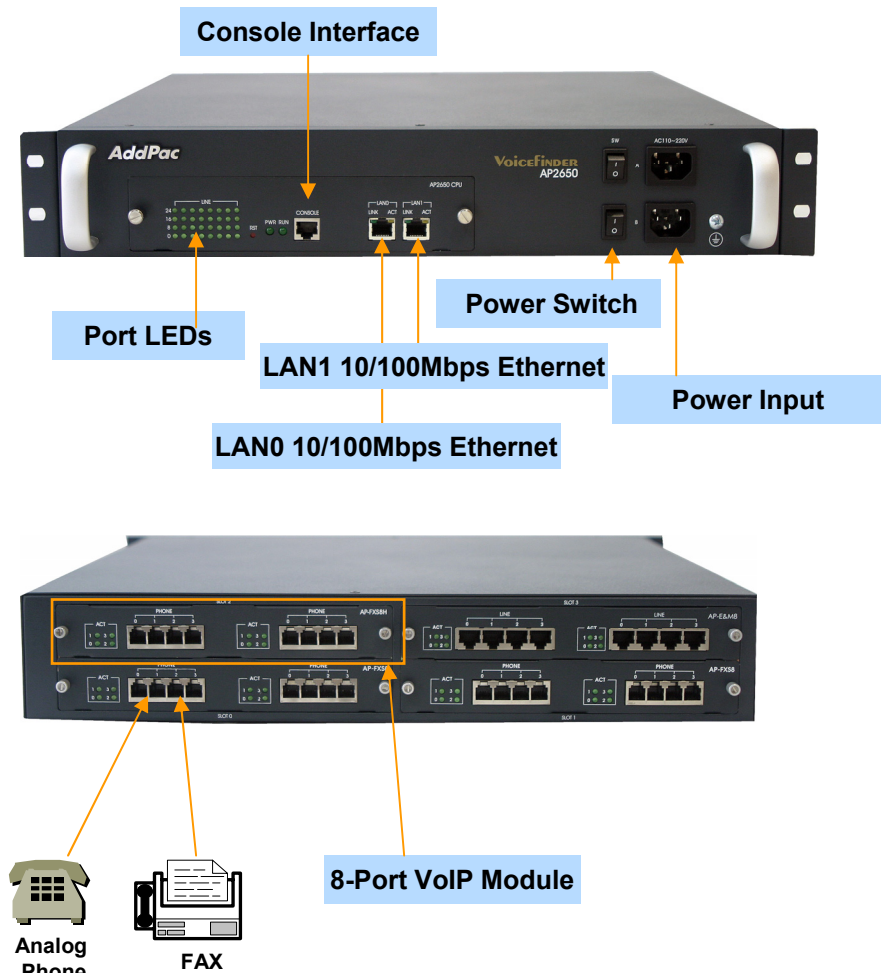
# Hardware Specification

## AP2650CM Call Manager VoIP Gateway

### Hardware Specifications

AP2650CM VoIP Gateway	Basic Specifications
Voice Interface	Four(4) VoIP Module Slots AP-FXS8, AP-FXO8, AP-FXS4O4, AP-E&M8, APV1-E1, APV1-T1, etc
Ethernet Interface	2-Ports 10/100Mbps Ethernet Interface(RJ-45)
Flash Memory	16Mbyte High-speed Flash Memory
Base Memory	128Mbyte High-speed SDRAM
Power Requirement	Dual Power Supply / VAC 110~220V, 50/60Hz, 100Watt
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(77 x 440 x 450(mm))

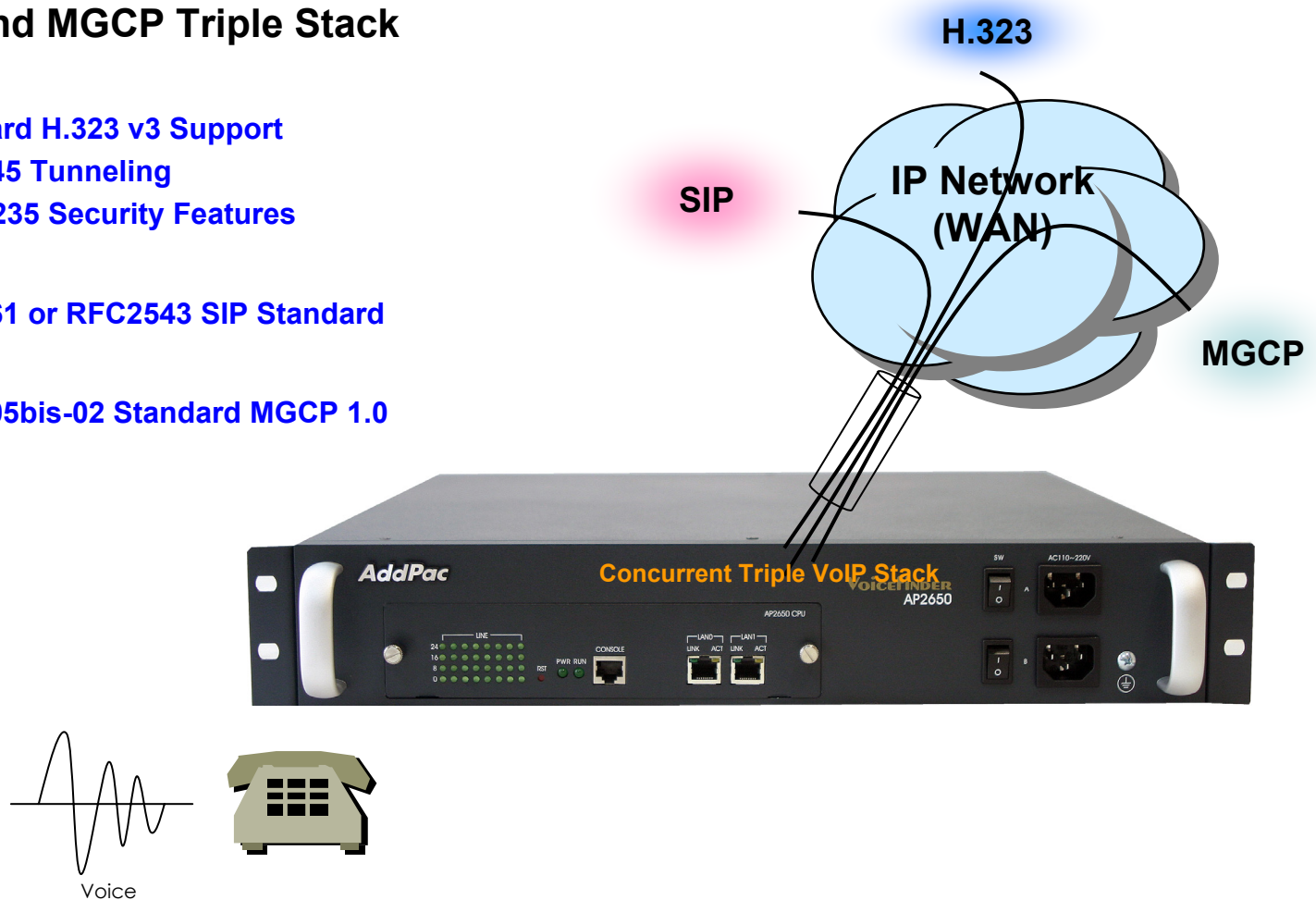
### Network interface Configurations



# VoIP (Voice over IP) Service

## AP2650CM Call Manager VoIP Gateway

- H.323, SIP, and MGCP Triple 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
- MGCP
  - IETF RFC2705bis-02 Standard MGCP 1.0





# VoIP (Voice over IP) Service

## AP2650CM Call Manager 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

- **MGCP**

- Secondary call agent assignment function
- Default package assignment
- Announcement Server Package, Generic Media Package, Handset Package, Line Package, Trunk Package support
- MGCP call agent assignment according to the domain name
- T.38 real-time fax relay support
- DTMF relay support based on RFC2833

# VoIP (Voice over IP) Service

## AP2650CM Call Manager VoIP Gateway

- **Voice Codec**

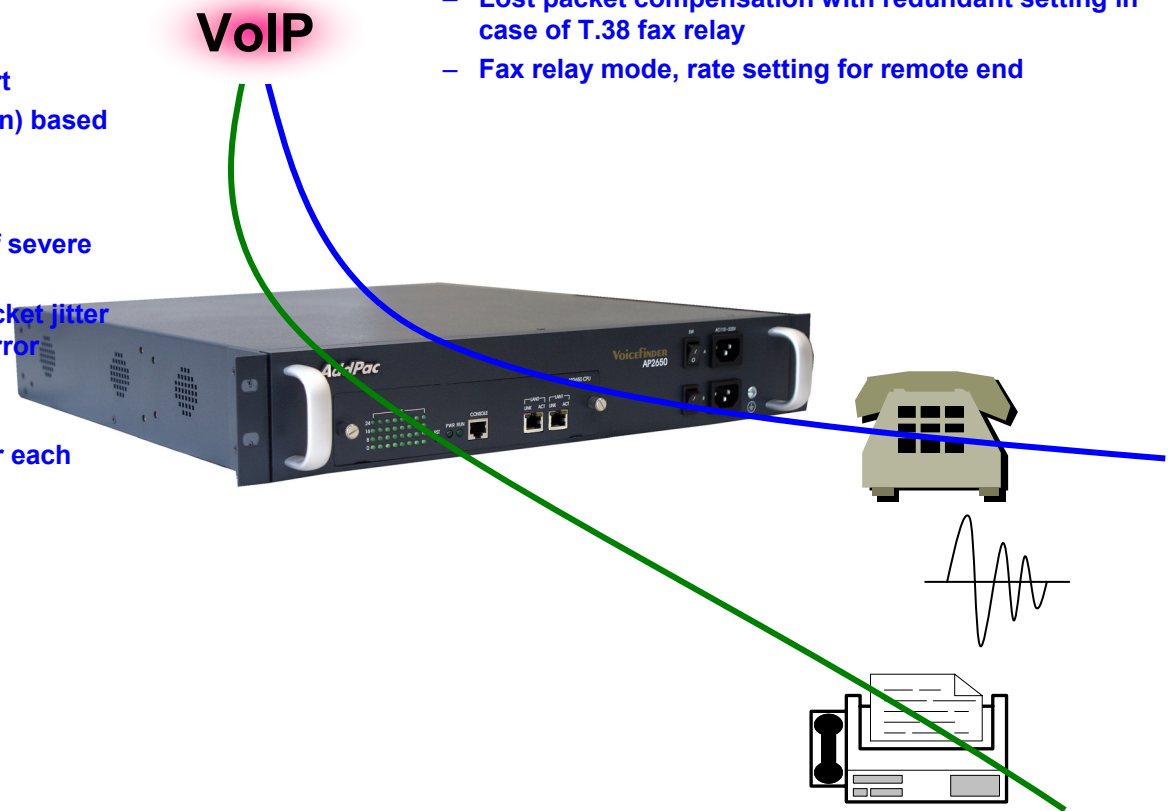
- G.711 A-Law, G.711 U-Law
- G.726 r16, G.726 r32
- G.729A
- G.723.1 r63, G.723.1 r53
- VAD (Voice Activity Detection) function support
- DTMF relay support (H.323, SIP, MGCP common) based on RFC2833

- **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

- **FAX**

- Fax relay mode supporting T.38, inband-T.38, bypass mode
- Lost packet compensation with redundant setting in case of T.38 fax relay
- Fax relay mode, rate setting for remote end



# VoIP (Voice over IP) Service

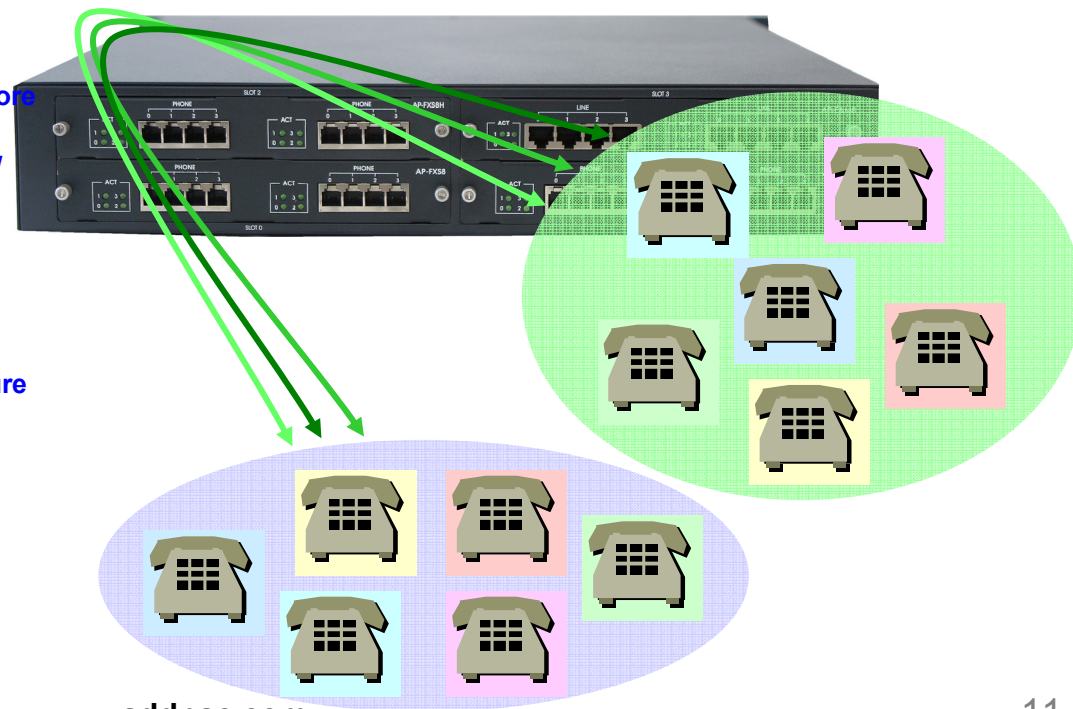
## AP2650CM Call Manager VoIP Gateway

### • 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

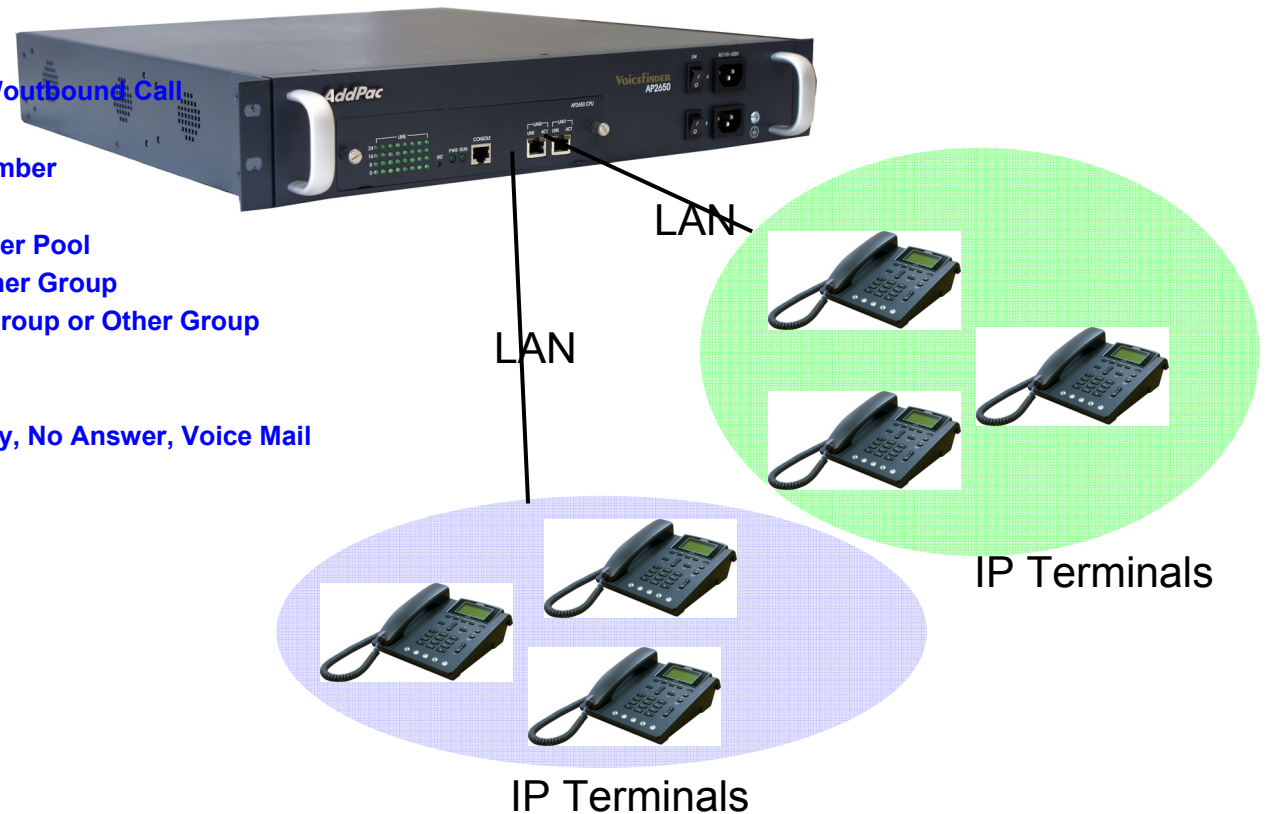


# Call Manager Service

## AP2650CM Call Manager VoIP Gateway

- **Number & Call Routing**

- Trunk Hunting by Preference or Sequential
- Calling Hunting by Preference, Simultaneous, Random
- Calling Hunting by Chained Hunting Group
- Partition for Address Grading
- Call Class for Call Access Control
- Number Translation Rule for Inbound/outbound Call
- Centrex with Prefix Support
- Multiple Shared Devices with One Number
- Multiple Numbers on One Device
- Individual Call Park within Park Number Pool
- Group Call Park within a Group or Other Group
- Call Pickup of Ringing Call of Same Group or Other Group
- Call Pickup of Parked Call
- Call Transfer-Blind, Consult
- Call Forwarding ? Unconditional, Busy, No Answer, Voice Mail
- Call Waiting
- Call Swapping
- Call Hold



# Call Manager Service

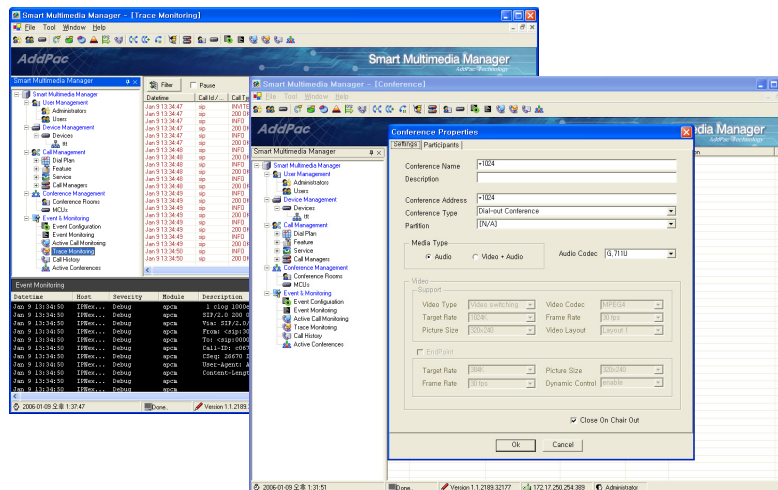
## AP2650CM Call Manager VoIP Gateway

- **Advanced Features with AddPac IP Phone, Video Phone, etc**
  - Multiple Call Handling with Call Status, Calling Line Number, and Name
  - Plug and Play with Auto Discovery Function
  - Softkey Map Download and Control
- **Telephony Service and Features**
  - Parked Call List View
  - Call Forwarding Setting
  - Recent Call List View
  - Calling Number and Name Identification
  - Individual Call Park within a Group or Other Group by Softkey
  - Call Pickup of Parked Call by Softkey
  - Call Transfer ? Blind, Consult by Softkey
  - Call Waiting Indication
  - Call Swapping by Softkey
- **IP-PBX Signaling Protocols**
  - SIP Application Server, Proxy, Registrar and Location Server(RFC3261)

# Call Manager Service

## AP2650CM Call Manager VoIP Gateway

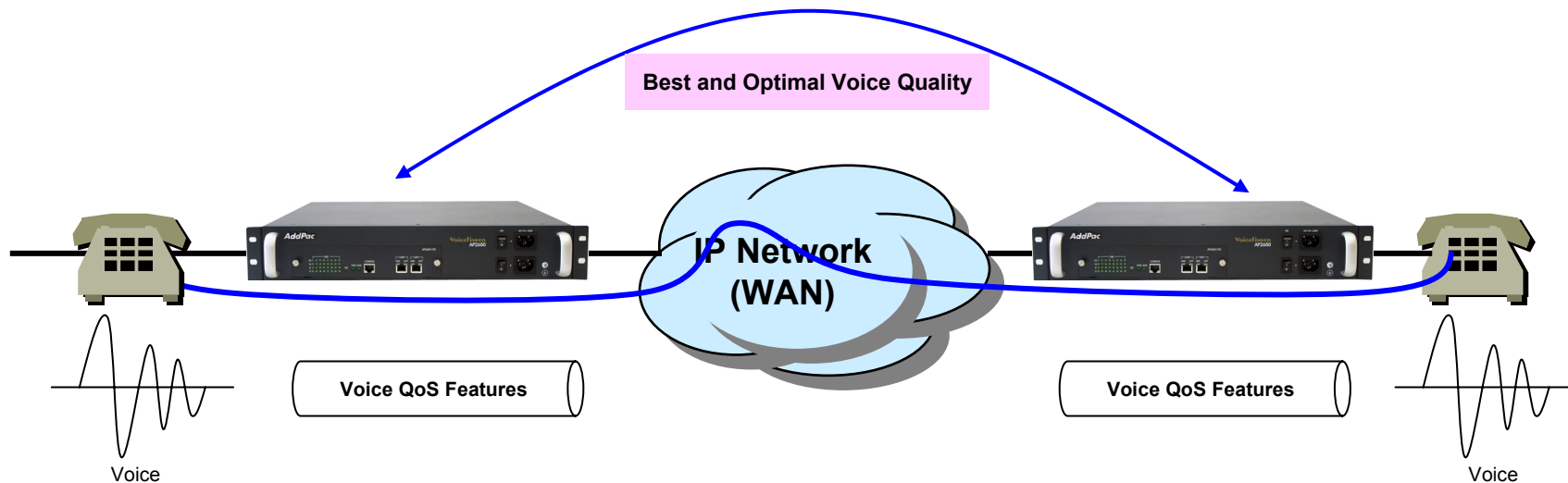
- Windows based Smart and Easy Management Tool Support
- User, Device, Call Management with Intuitive User Interface
- Active Call Monitoring Support
- Call Tracing Support



# Advanced QoS Features

## AP2650CM Call Manager 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

## AP2650CM Call Manager VoIP Gateway

### Basic Network Protocols

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

### Routing Protocol

- IPv4 : Static

### Service Protocol

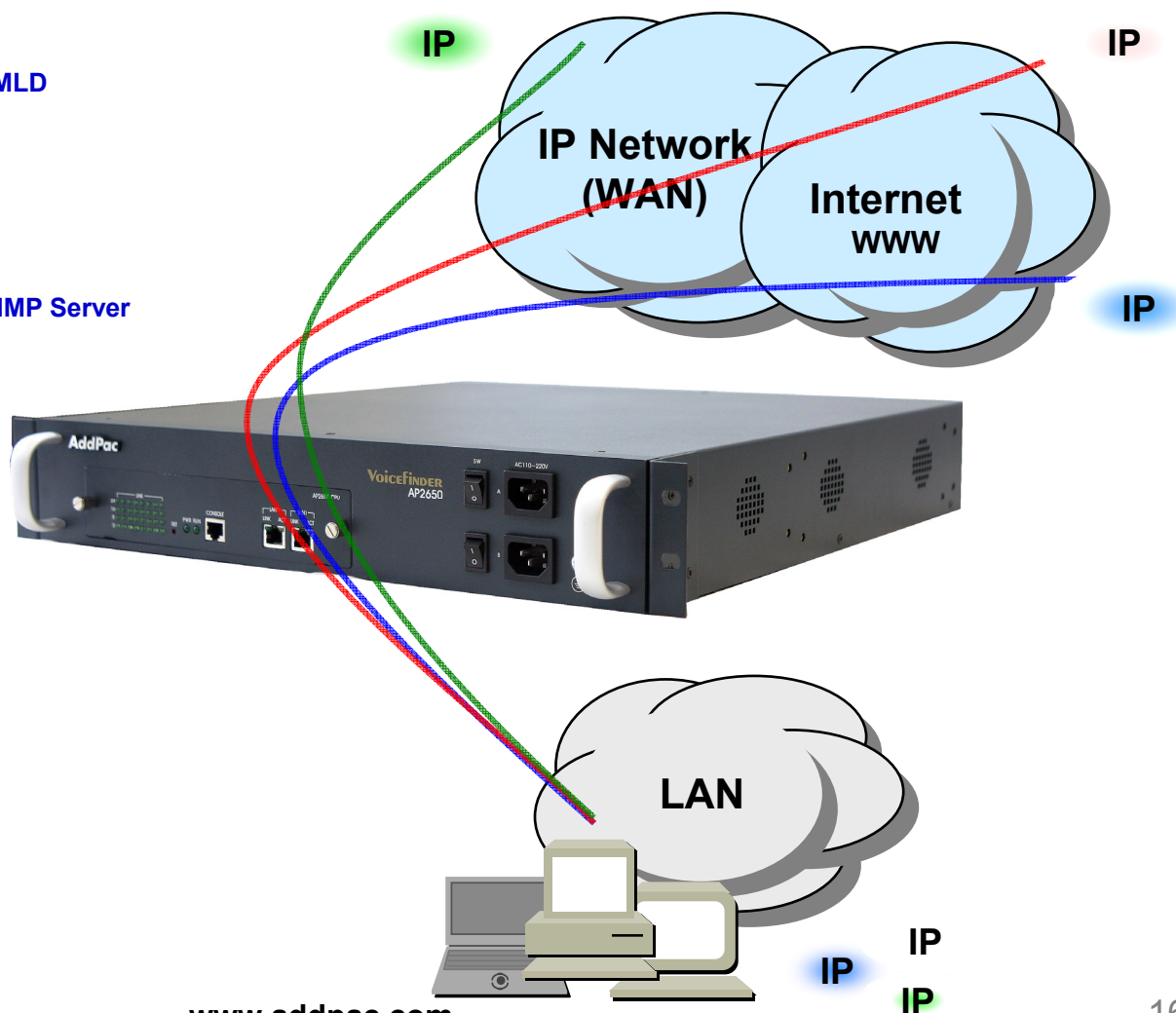
- FTP, Telnet, TFTP, DHCP Server/Relay, SNMP Server
- CDP (Cisco Discovery Protocol)
- DNS Resolver , DDNS(nsupdate)
- Bridge
- Syslog

### 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

## AP2650CM Call Manager 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**

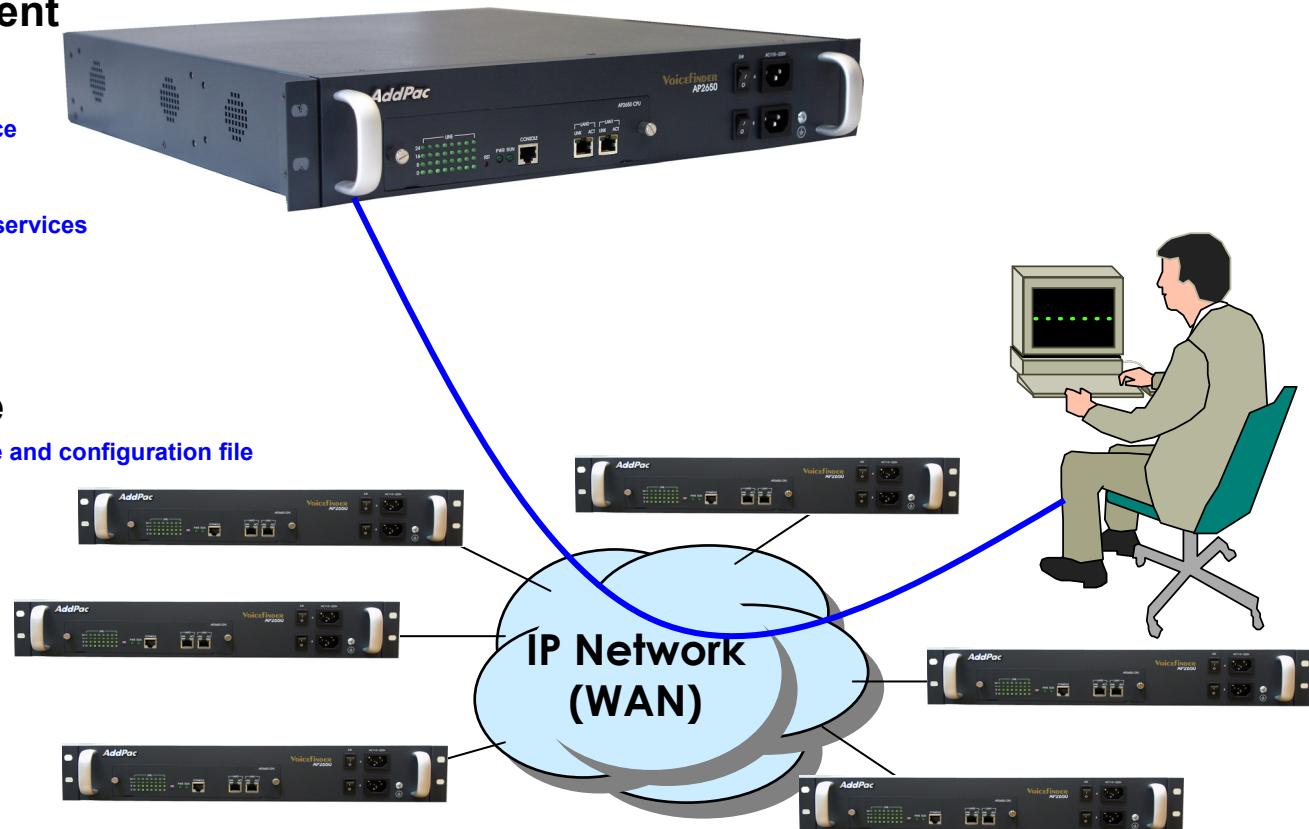
- HTTP server based APOS image and configuration file auto-upgrade support

- **Batch Job Function**

- Text based script downloading

- **Interoperable with AP-VPMS Service**

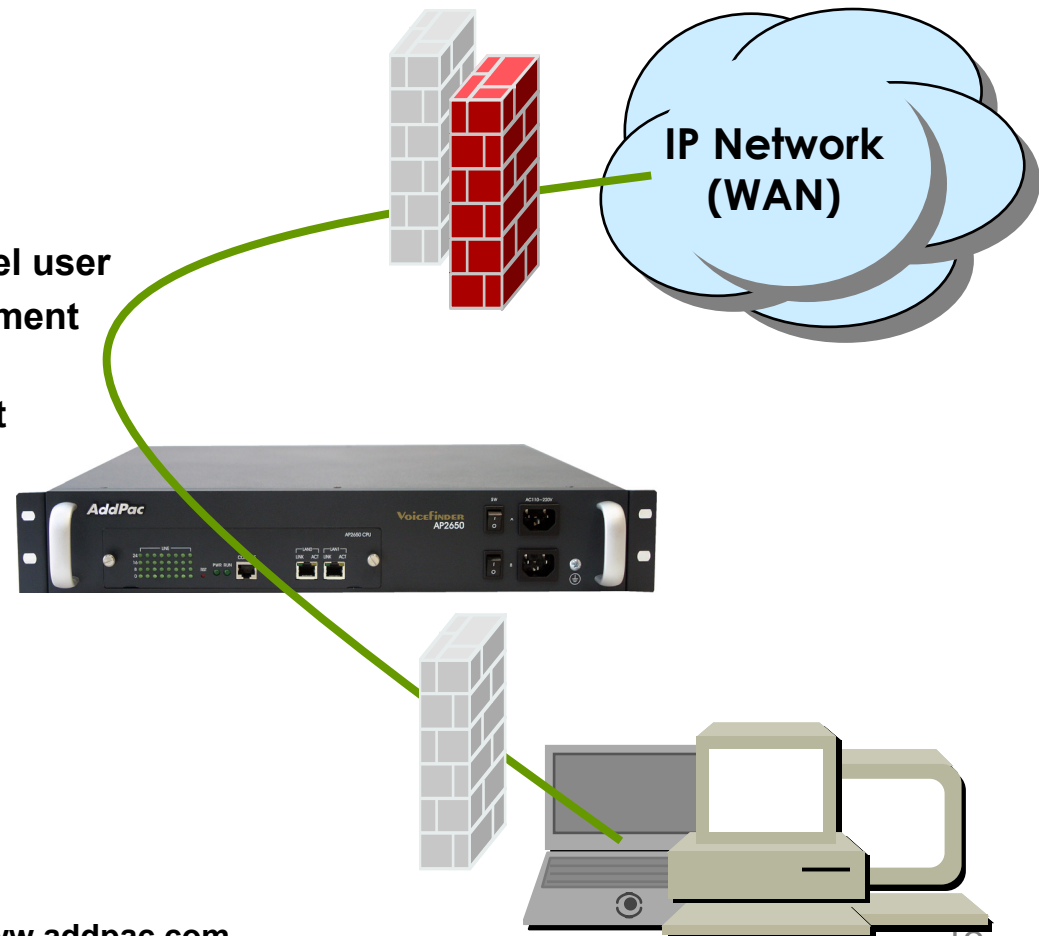
- AddPac VoIP Plug & Play Management System (AP-VPMS)



# Security Management

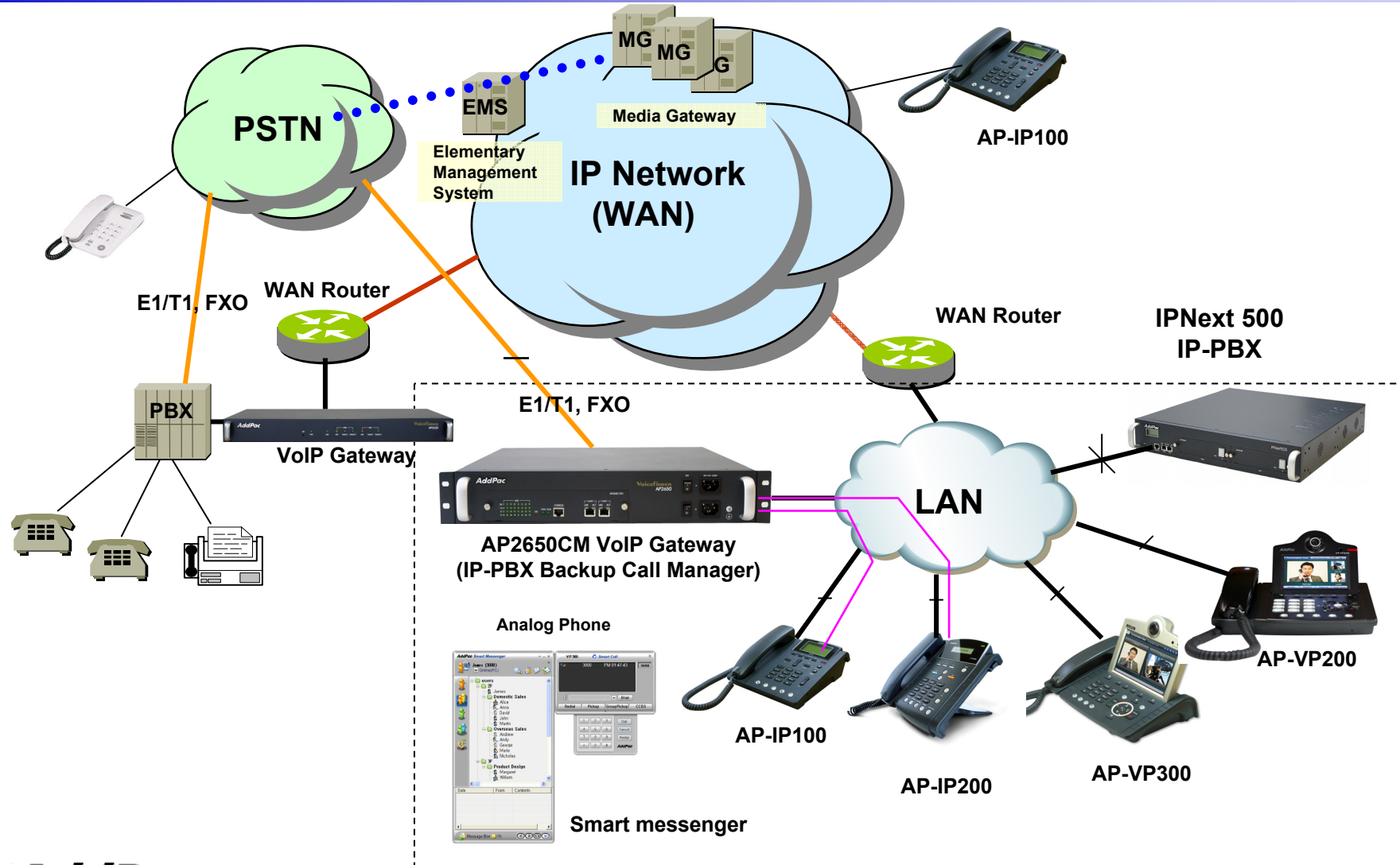
## AP2650CM Call Manager VoIP Gateway

- 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



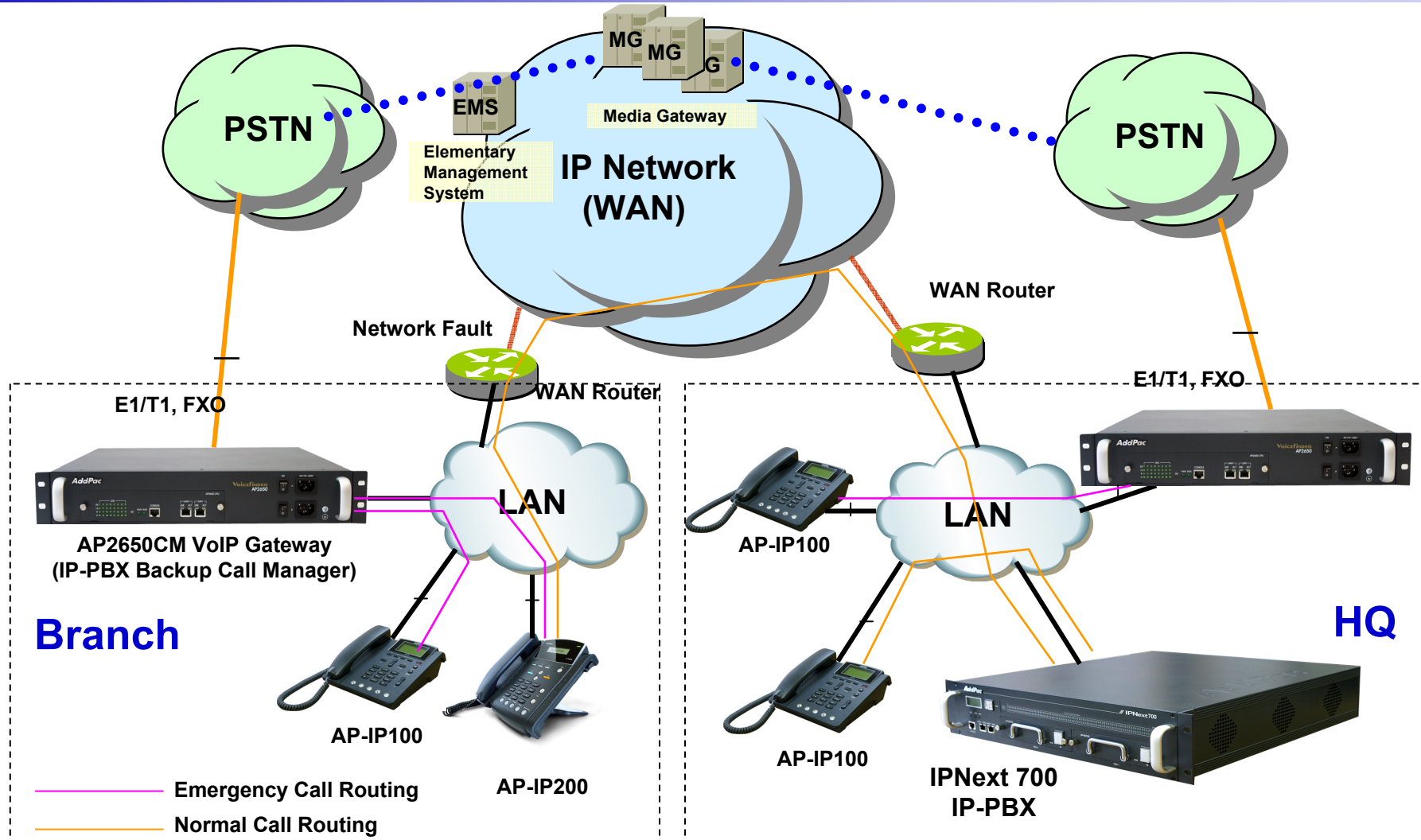
# Standard Application

## AP2650CM Call Manager VoIP Gateway



# Emergency Call Routing Example

## AP2650CM Call Manager VoIP Gateway



# Ordering Information

- **AP2650CM Call Manager VoIP Gateway Hardware**
  - AP2650CM Call Manager VoIP Gateway Main Body (Including CPU Module)
  - RISC Microprocessor with High-end Programmable DSP Architecture
  - 2-ports 10/100Mbps Fast Ethernet(RJ45)
  - Option Module: AP-FXS8, AP-FXO8, AP-FXS4O4, AP-E&M8, APV1-1E1
  - Including Network Cable & Power Supply Cable, etc.
- **Built-in APOS Internetworking Software for AP2650CM**
- **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)



# 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](mailto:sales@addpac.com)