



# IPNext50™

## Small, Powerful IP-PBX

Next Generation IP-PBX System for the Small Business and Home Office

New Models for GSM Interworking Service  
(IPNext50 : Model G series)

Preliminary Product Overview



**AddPac**

**AddPac Technology**

2010, Sales and Marketing

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

# Contents

## IPNext50 IP-PBX for GSM service

- Product Overview
- APOS Technology
- Hardware Specification
- GSM Module Specification
- IP-PBX Features
- IP-PBX Advanced Features with AddPac IP, Video Phones
- VoIP Gateway Service Features
- RTP Proxy Function for Private IP solution
- Advanced QoS Features
- Network Protocols, Network & Security Management
- Smart Multimedia Manager (SMM)
- VPMS VoIP Management
- IP Multimedia Telephony Terminals
- Application Service
- Ordering Information

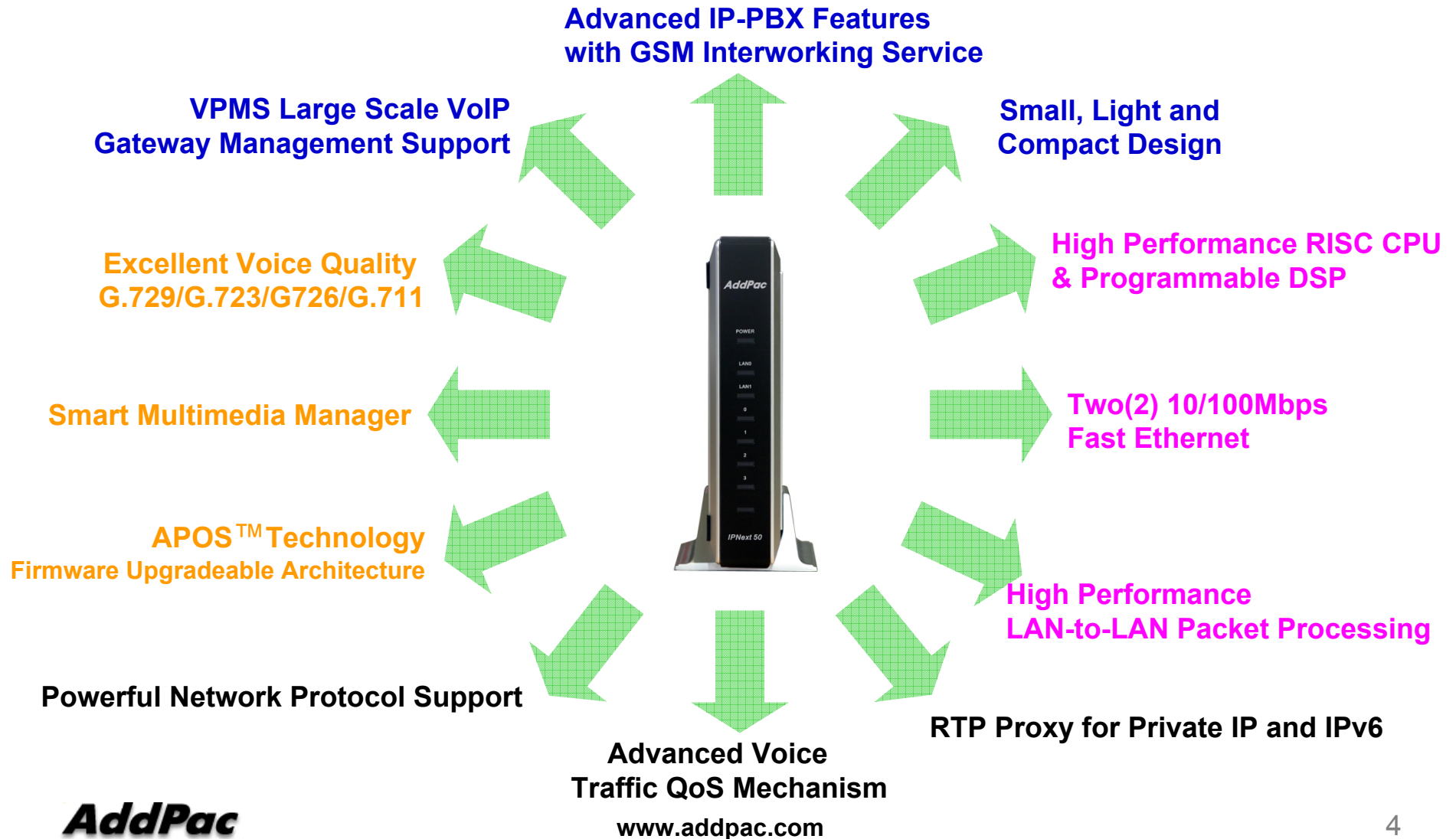
# Product Overview

## IPNext50 IP-PBX for GSM service

- SIP Application Server, Proxy, Registrar and Location Server
- Multiple ITSP Trunk with SIP & H.323 Accounts Support
- High Performance RISC & Programmable DSP Architecture
- Two(2) 10/100Mbps Fast Ethernet (IP Share ,etc)
- Up to Two(2) PSTN FXS VoIP Interface
- High Performance LAN-to-LAN Routing Capability
- VoIP Gateway : G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- IPv4/IPv6 Dual Stack
- RTP Proxy Function Embedded for Private IP and IPv6 Address Interworking
- Presence Service Features for Smart Multimedia Messenger and Smart IP Phone
- IVR Scenario Editor, Voice Mail, Third Party Conference (G.711)
- Firmware Upgradeable Architecture
- Smart Multimedia Manager for IP-PBX Management
- Smart Messenger Service for UC
- VPMS (VoIP Plug&Play Management System) for Large Scale Deployment
- Advanced Voice QoS Mechanism
- Small, Light and Compact Design
- Power Switch for Stability and Status LEDs

# Product Highlights

IPNext50 IP-PBX for GSM service



# APOS Technology

IPNext50 IP-PBX for GSM service



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

# Hardware Specification

IPNext50 IP-PBX for GSM service

RISC  
CPU

High-end  
DSP




- **RISC Microprocessor Computing Power  
+ High End Programmable DSP**
- **GSM Interface**
  - IPNext50 Model GA: Two(2) GSM Port
  - IPNext50 Model GB: Two(2) GSM Port + Two(2) FXS Port
  - IPNext50 Model GD: Four(4) GSM Port
- **Network Interface**
  - Two(2) 10/100Mbps Fast Ethernet (RJ45)
- **RS232C Interface for Command Line Interface**
- **Power Supply**
  - External Power Adaptor
- **Power On/Off Switch**
- **Power LED, LAN LEDs, GSM, FXS Port LEDs**

# Hardware Specification

IPNext50 IP-PBX for GSM service

RISC  
CPU

High-end  
DSP

Product		IPNext50 GD	IPNext50 GB	IPNext50 GA
Service Features				
Registration User Number		30	30	30
Concurrent Call User		15	15	15
IPv4/IPv6 Dual Stack Support		Support	Support	Support
VoIP Signaling	Internal	SIP	SIP	SIP
	External	H.323/SIP	H.323/SIP	H.323/SIP
Powerful IVR, UMS, Media Service, User Presence Service		Support	Support	Support
RTP Proxy Service (IPv6, Private IP)		Support	Support	Support
LAN Port		2	2	2
GSM Interface		4 Channel	2 Channel	2 Channel
FXS Interface		N/A	2 Port	N/A

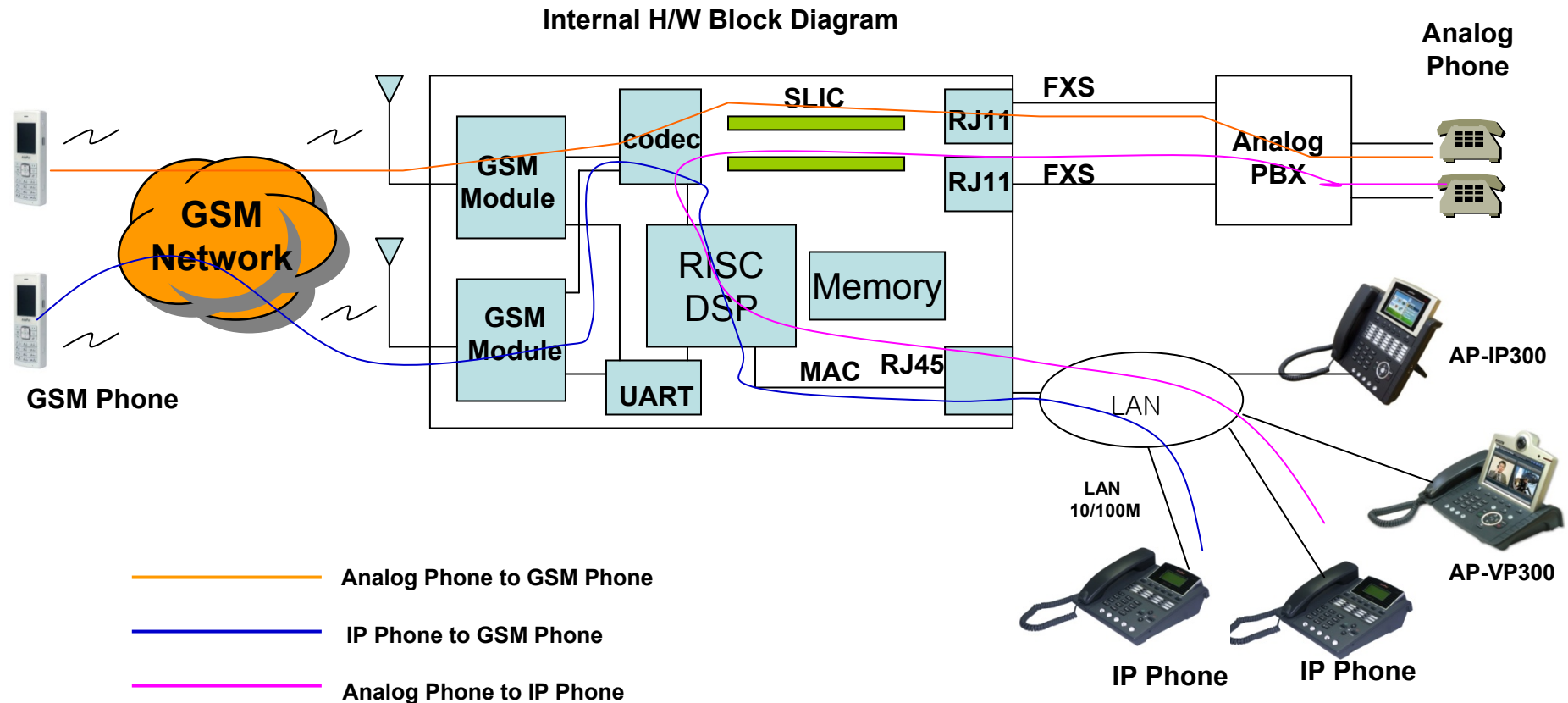
# Hardware Specification

IPNext50 IP-PBX for GSM service

RISC  
CPU

High-end  
DSP

## IP-PBX Service Diagram for GSM Interworking





# Hardware Specification

IPNext50 IP-PBX for GSM service

RISC  
CPU

High-end  
DSP

## Hardware Specifications

IPNext50 G Series	Basic Specifications
CPU	High End RISC Microprocessor
GSM Interface	Model GA : 2GSM Interface
	Model GB : 2GSM+2FXS Interface
	Model GD : 4GSM Interface
Ethernet Interface	2-Ports 10/100Mbps Ethernet Interface(RJ-45)
Flash Memory	High-speed Flash Memory for System, Voice Mail, etc
System Main Memory	128Mbyte High-speed SDRAM
Power Requirement	External Power Supply Adaptor / VAC 110~220V, 50/60Hz, 5V 3A
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	182mm x 182mm x 38mm (W x D x H)

# Hardware Specification

IPNext50 IP-PBX for GSM service

RISC  
CPU

High-end  
DSP

IPNext50 GB Network Interface

GSM Antenna  
External Interface

SIM Card Slot

RS232C Console for CLI

LAN1 10/100Mbps Ethernet

LAN0 10/100Mbps Ethernet

External Power Interface

Power Switch



**AddPac**

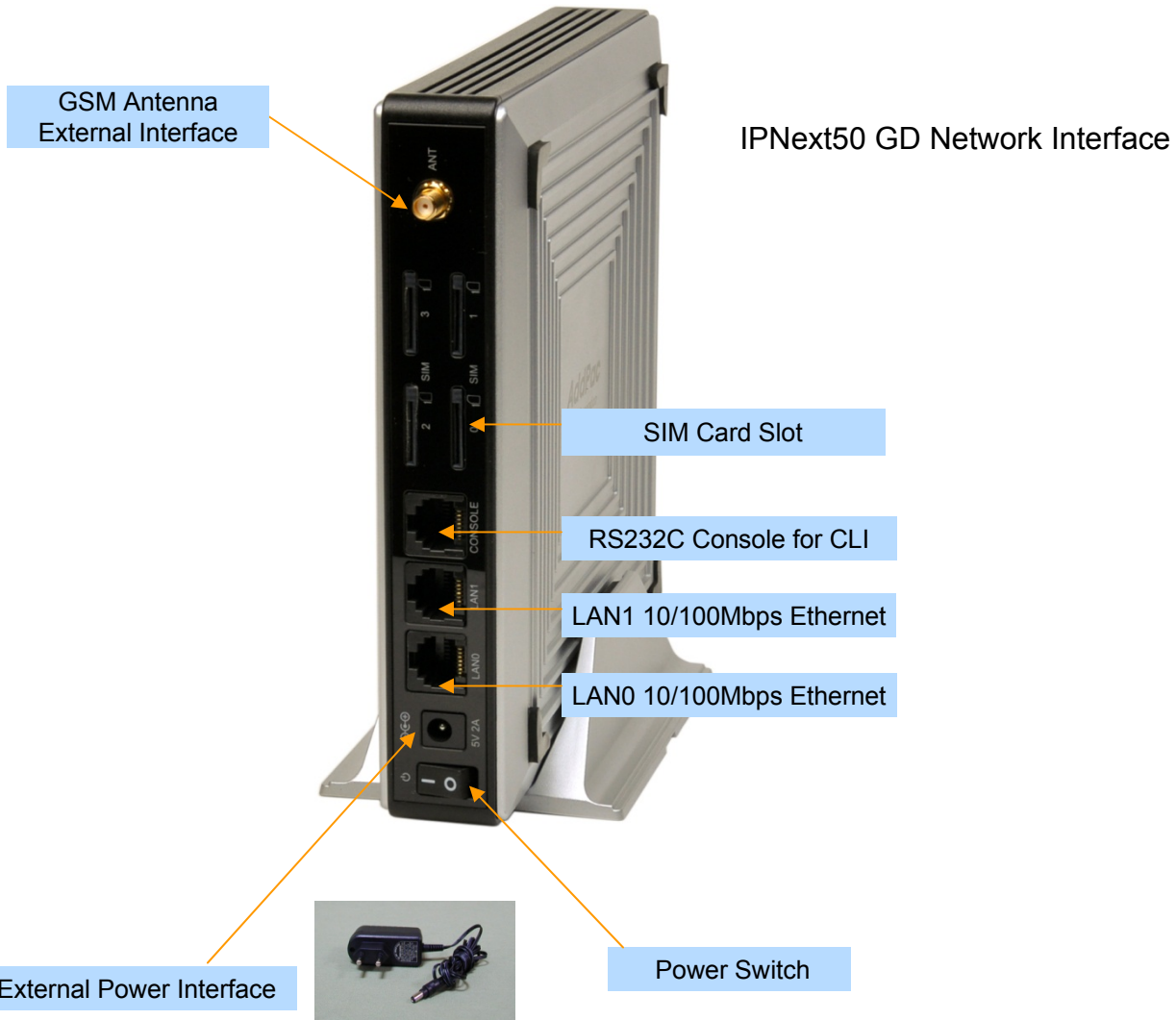
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# Hardware Specification

IPNext50 IP-PBX for GSM service

RISC  
CPU

High-end  
DSP



# Hardware Specification

IPNext50 IP-PBX for GSM service

RISC  
CPU

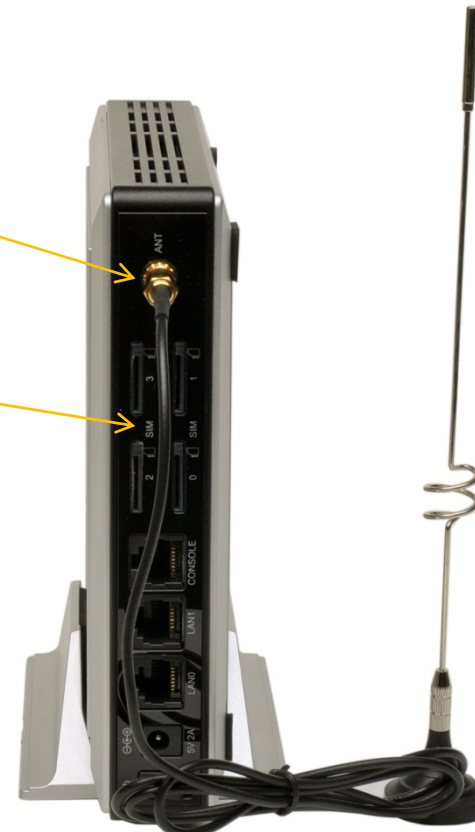
High-end  
DSP



IPNext50 GB

4Ch Antenna  
Combiner

4 sim slots



IPNext50 GD

# GSM Module Specification

IPNext50 IP-PBX for GSM service

- Quad-Band EGSM 850/900/1800/1900MHz
- Output Power
  - Class 4[2W]@ 850/900MHz
  - Class 1[1W]@ 1800/1900MHz
- Sensitivity
  - 107dBm[typ.] @850/900MHz
  - 106dBm[typ.] @1800/1900MHz
- 50Ohm murata GSC antenna connector
- Half rate, Full rate, Enhanced full rate and Adaptive multi-rate voice codec[HR,FR,EFR,AMR]
- Superior echo cancellation & Noise reduction
- SMS, Circuit Switched Data, GPRS Data, FAX
- GSM Supplementary



# IP-PBX Features

IPNext50 IP-PBX for GSM service

- **Signaling Server**
  - SIP Application Server, Proxy, Registrar and Location Server (RFC3261)
  - Multiple ITSP Trunk with SIP & H.323 Accounts Support
    - IP UA Client Role for Registering to ITSP SIP Server
    - H.323 Gatekeeper Client Role for Registering to ITSP H.323 Gatekeeper Server
- **IVR & Auto Attendant**
  - Default Auto Attendant Support
  - Interactive Voice Response (IVR)
    - Provides with GUI-based Smart IVR Scenario Editor
    - Upload/Download Scenario by Smart IVR Scenario Editor
    - Supports Multiple Concurrent Scenarios
    - Supports Recordable IVR Prompts
- **Voice Mail**
  - Support Voice Mail with IVR
  - Access from Remote Site via Trunk Support
  - Voice Mail Notification Support

# IP-PBX Features

IPNext50 IP-PBX for GSM service

- **Conference**

- G.711 u-law, G.711 a-law Internal 3-Party Audio Conference Support
- Ad-hoc Conference
- Dial-Out Conference
- Meet-me Conference
- Multiple External MCU support( Video, Audio, etc) : AddPac AP-MC1000, etc
- Conference Chair and Participants Management

- **Music & Announcement**

- Music on Hold
- Replaceable Announcements
- Dialing Music / Tone Service

# IP-PBX Features

IPNext50 IP-PBX for GSM service

- **Number & Call Routing**

- Trunk Hunting by Preference or Sequential
- Call Hunting by Preference, Simultaneous, Random
- Call 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



# IP-PBX Features

IPNext50 IP-PBX for GSM service

- **IP-PBX Advanced Features with AddPac IP, Video Phones**

- Multiple Call Handling with Call Status and Calling Line Number and Name
- Plug and Play with Auto Discovery Function
- Softkey Map Download and Control
- Time and Date Setting
- Voice Mail List View
- Parked Call List View
- Call Forward Setting
- Recent Call List View
- Calling Number and Name Identification
- Individual Call Park within Park Number Pool by Softkey
- Group Call Park within a Group or Other Group by Softkey
- Call Pickup of Ringing Call of Same 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
- Call Hold by SoftKey
- Conference Control

# IP-PBX Features

IPNext50 IP-PBX for GSM service

- **User & Device Management**
  - LDAP (Lightweight Directory Access Protocol) Support
    - Supports Hierarchical Organization
  - Auto Discovery of IP Phones & Video Phones
  - Monitoring Status of Phones
- **Miscellaneous\***
  - **Distinctive Ring by Calling User**
  - **Auto Config & Upgrade**
  - **Intercom**
  - **Personal Directory**
  - **Downloadable Ring**
  - **Do not Disturb**



# RTP Proxy Function

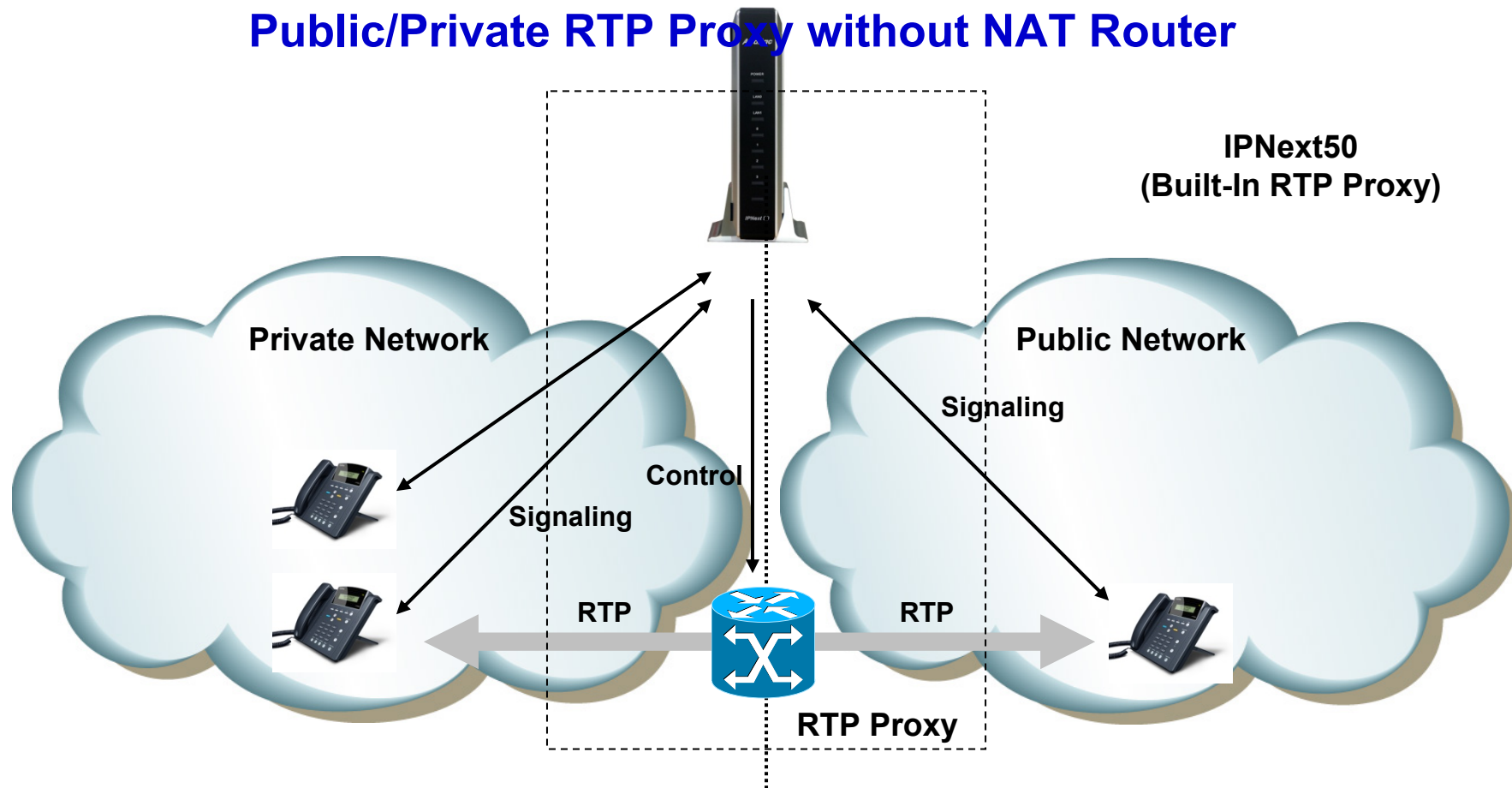
IPNext50 IP-PBX for GSM service

- Protocol Independence (H.323, SIP)
- Built-In RTP Proxy for Small Office
- Support RTP Proxy without NAT
- Support Symmetric / Asymmetric NAT
- Support IPv4/IPv6 RTP Proxy
- Support RTP Broadcast
- Support RTP Conference

# RTP Proxy Features

IPNext50 IP-PBX for GSM service

## Public/Private RTP Proxy without NAT Router

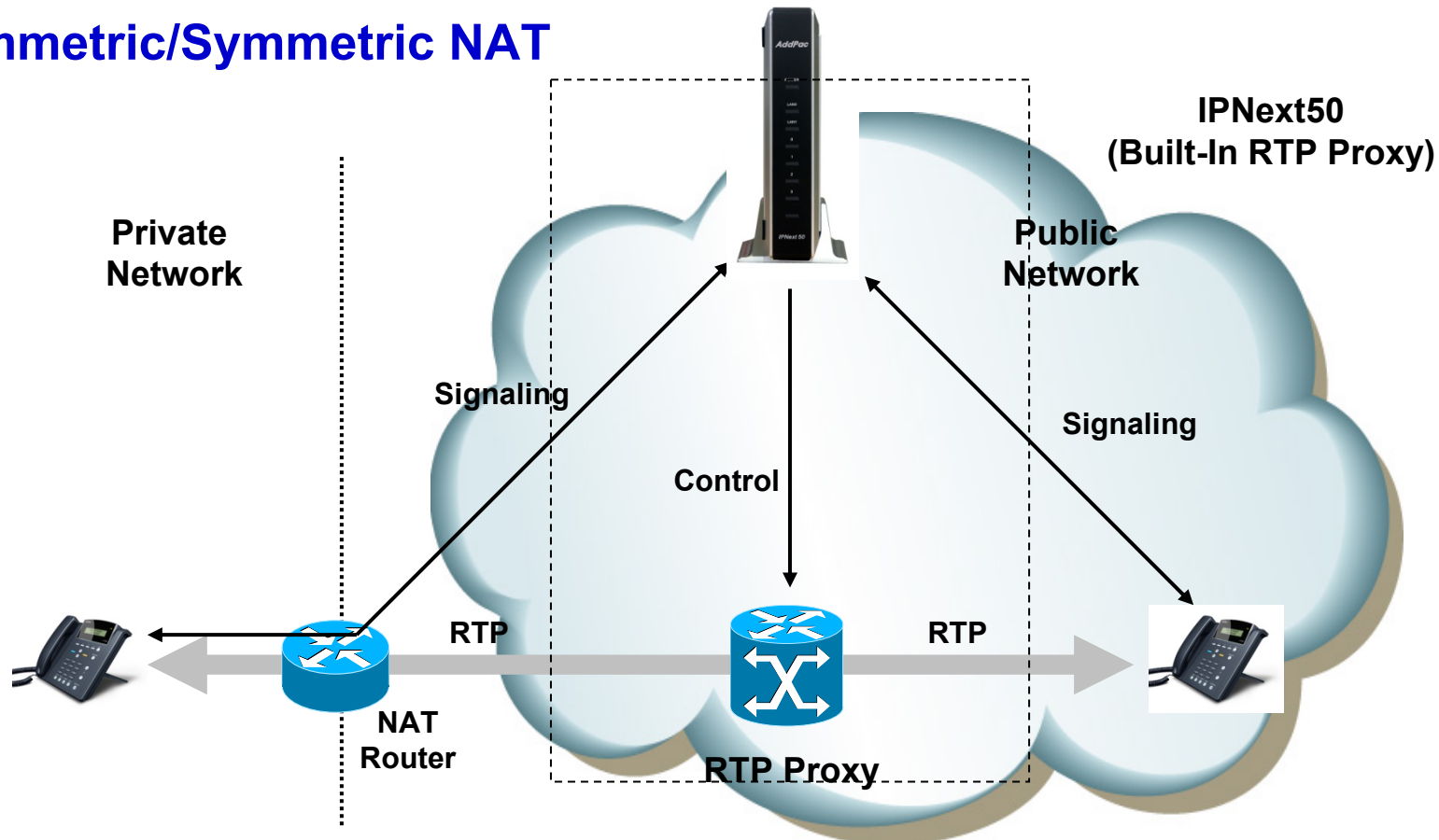


- Located between public and private network
- Call manager and RTP proxy has public and private address
- Call manager determine that the call is internal or external

# RTP Proxy Features

IPNext50 IP-PBX for GSM service

## Asymmetric/Symmetric NAT

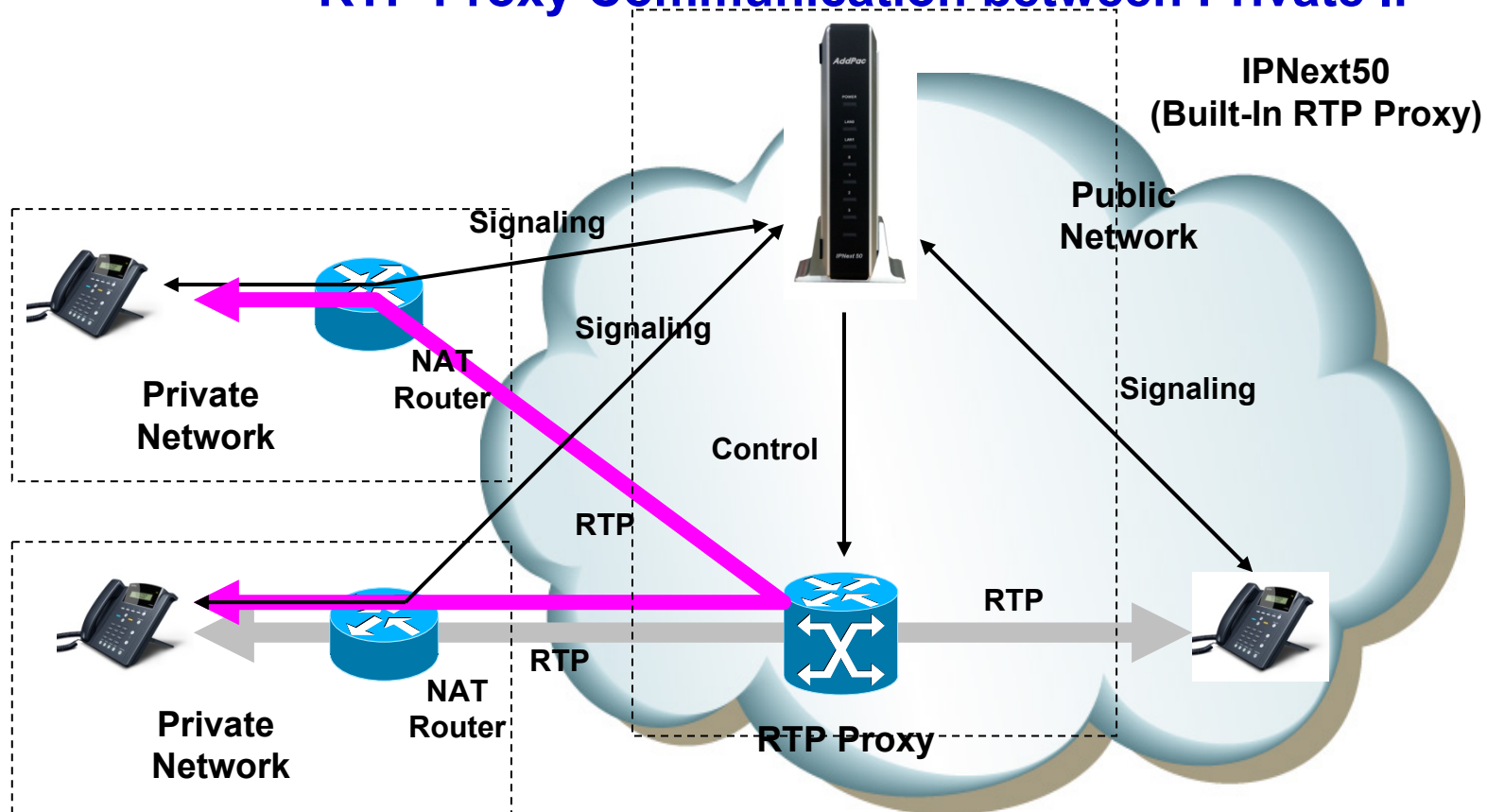


- Located in public network
- RTP Proxy has single public address
- Auto detect for asymmetric NAT via incoming RTP packet

# RTP Proxy Features

IPNext50 IP-PBX for GSM service

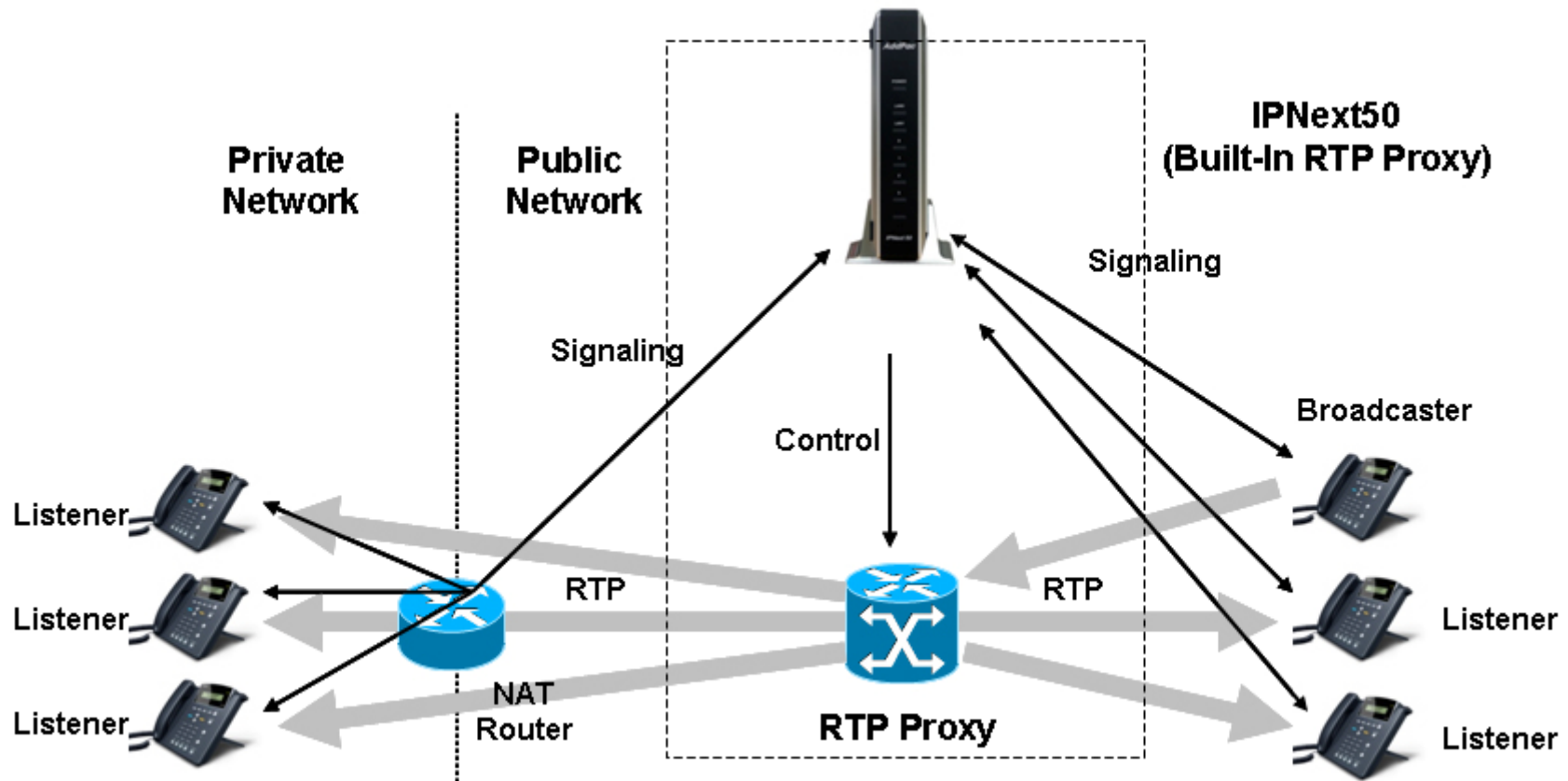
## RTP Proxy Communication between Private IP



- Located in public network
- RTP Proxy has single public address
- Auto detect for asymmetric NAT via incoming RTP packet

# RTP Proxy Features

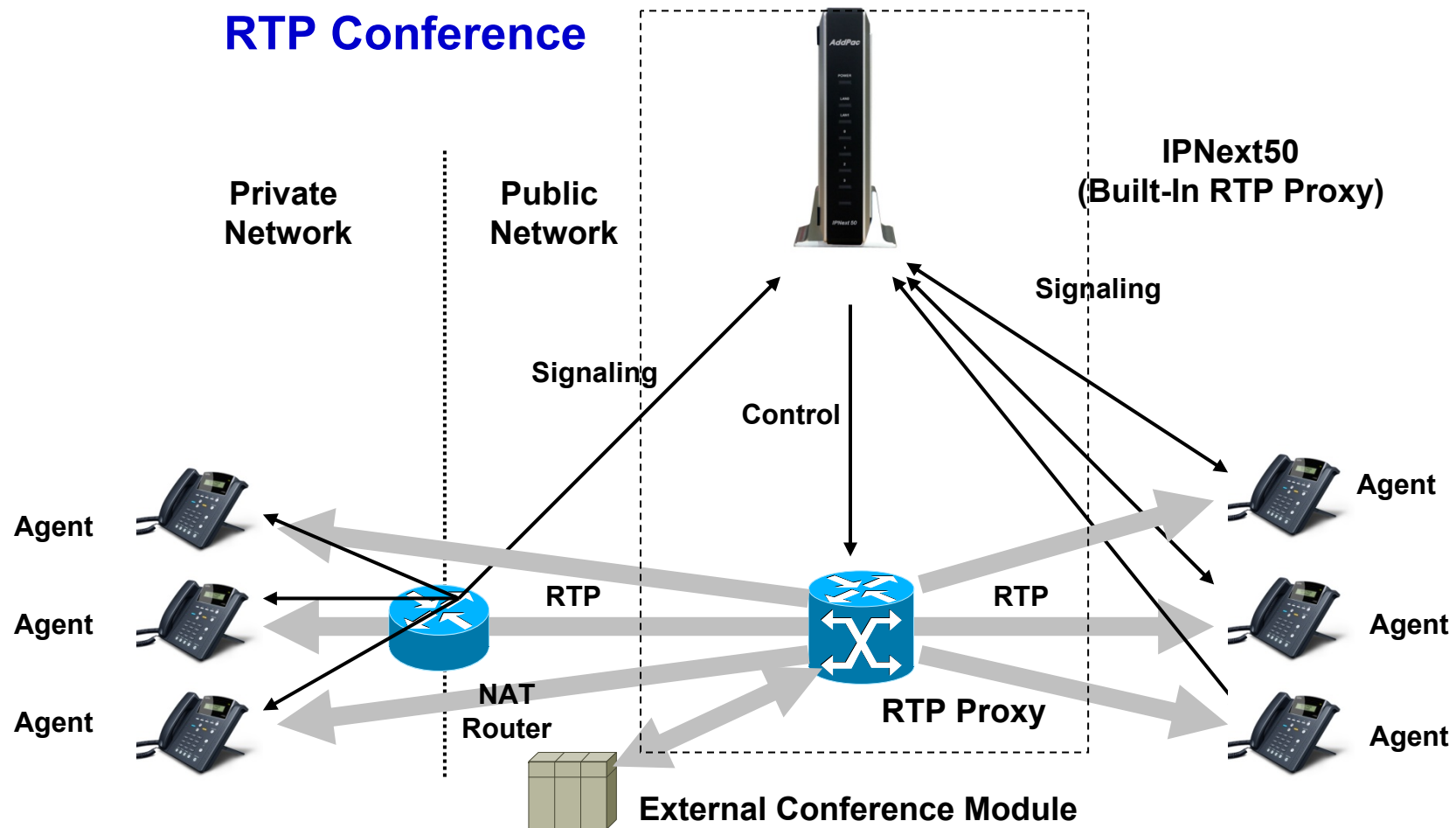
IPNext50 Next Generation IP-PBX



- Call Manager set the broadcaster and listener via control message
- One broadcaster and multiple listener
- RTP proxy relay for broadcaster RTP traffic
- RTP proxy never relay for listener traffic

# RTP Proxy Features

IPNext50 IP-PBX for GSM service



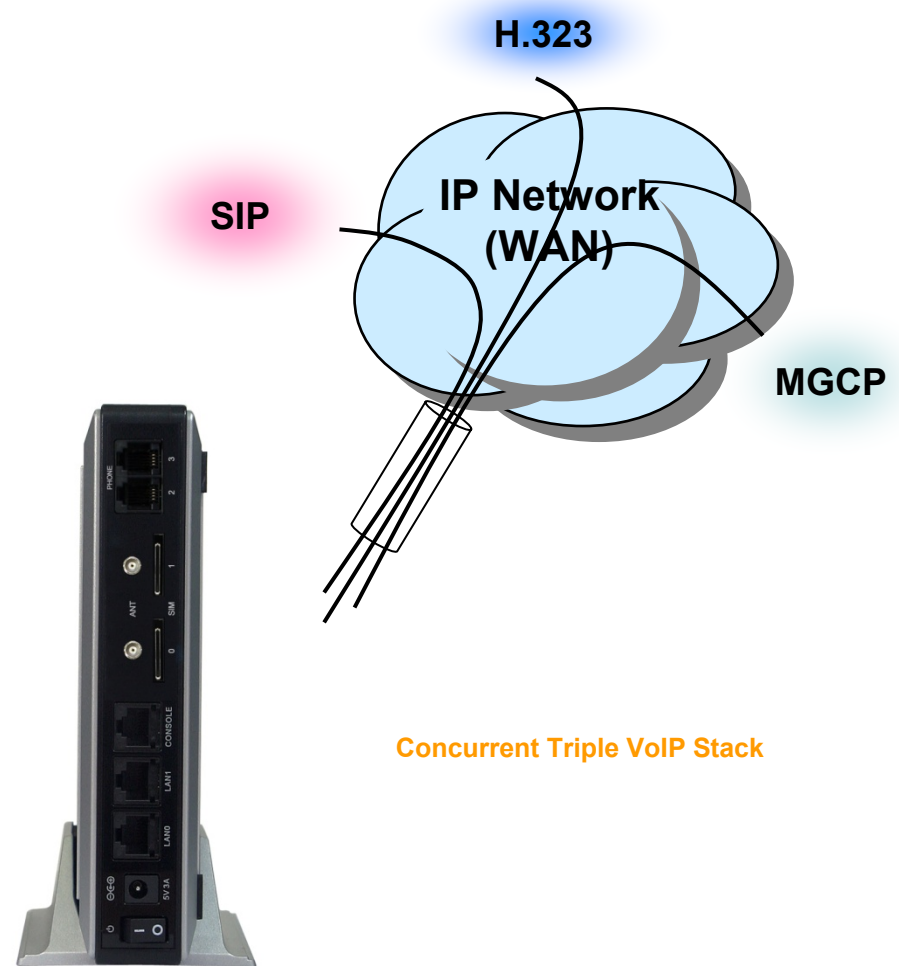
- RTP Proxy communicate with external/internal conference module (mixer)
- Conference support for private address, asymmetric NAT



# VoIP Gateway Service

IPNext50 IP-PBX for GSM service

- 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 Gateway Service

IPNext50 IP-PBX for GSM service

- **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 Gateway Service

IPNext50 IP-PBX for GSM service

- **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

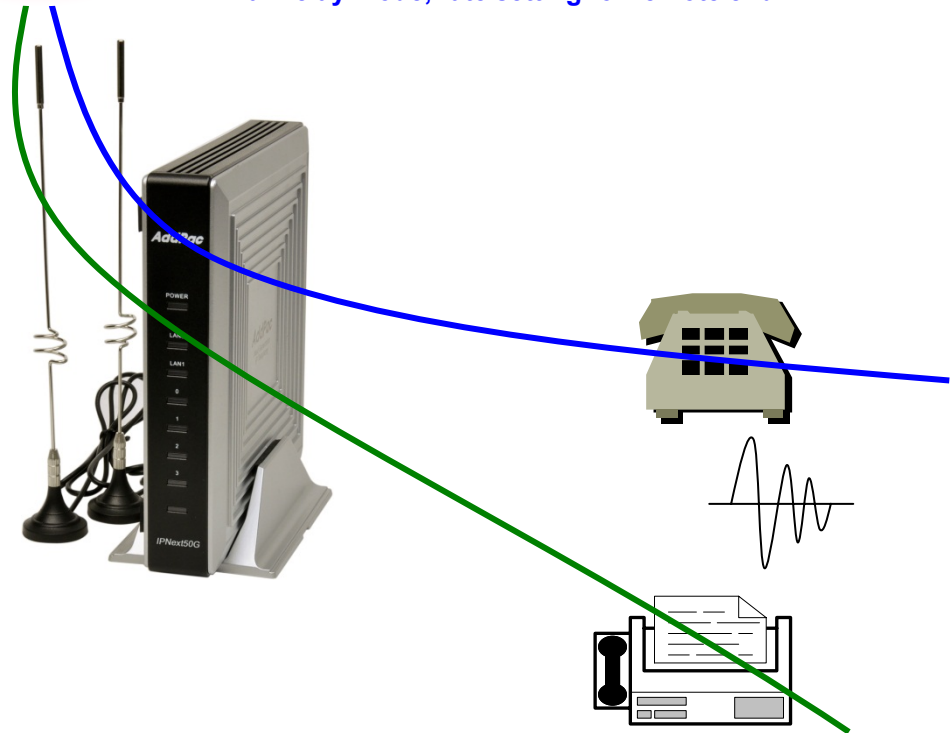
- **RTP**

- 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



# VoIP Gateway Service

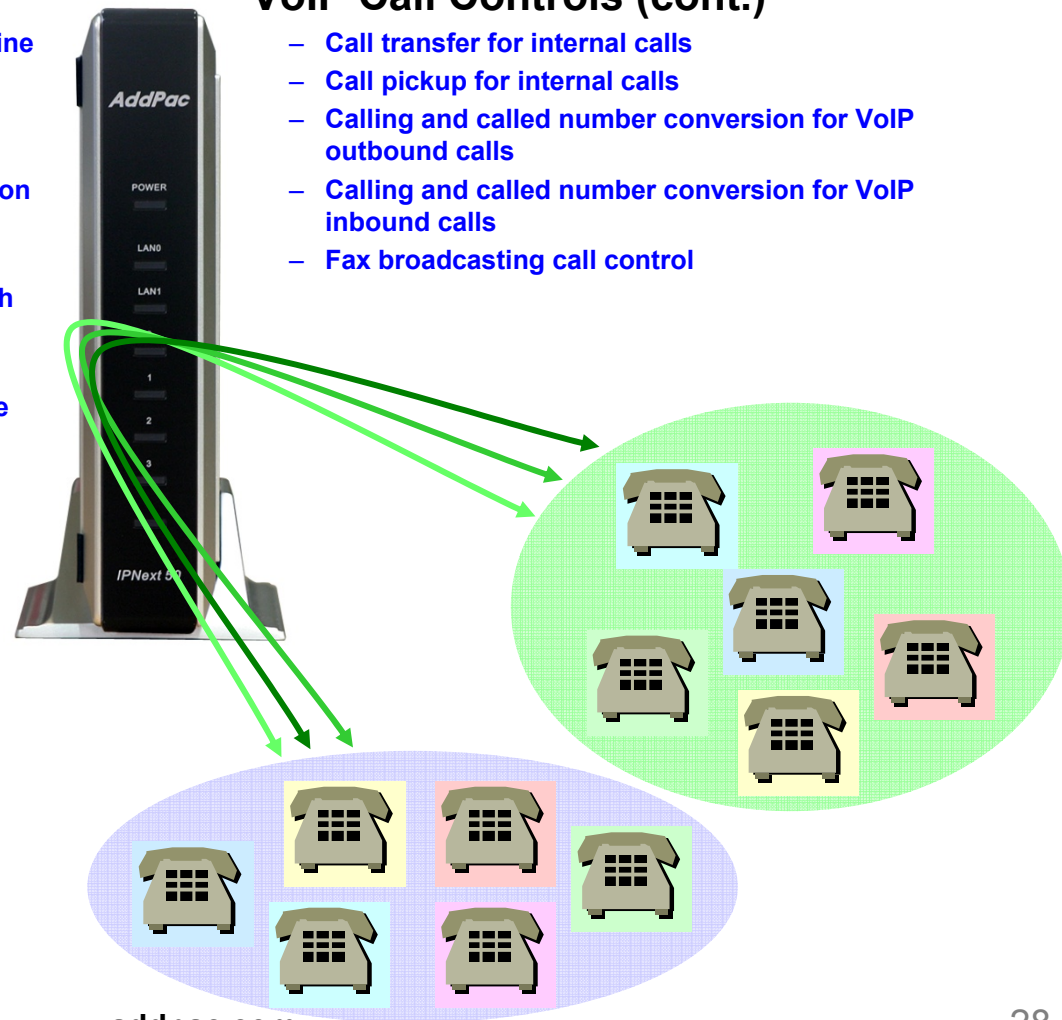
IPNext50 IP-PBX for GSM service

## • 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.)

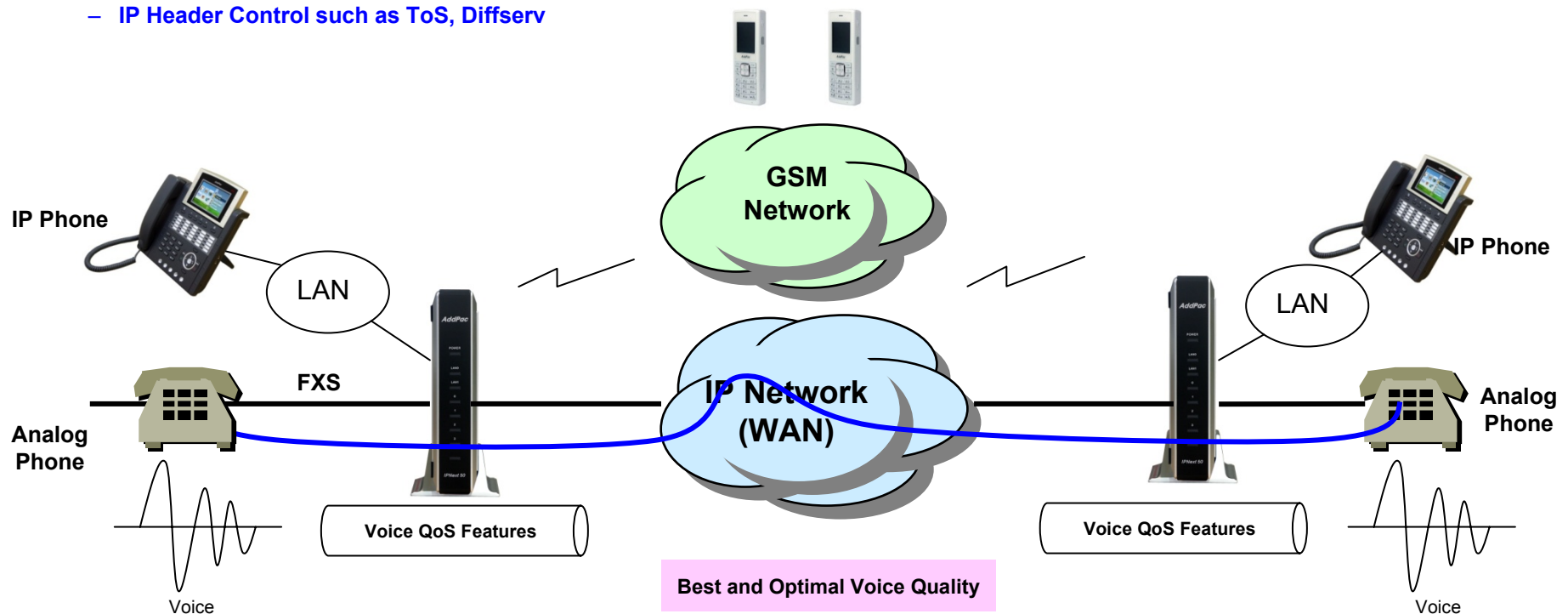
- Call transfer for internal calls
- Call pickup for internal calls
- Calling and called number conversion for VoIP outbound calls
- Calling and called number conversion for VoIP inbound calls
- Fax broadcasting call control



# Advanced QoS Features

IPNext50 IP-PBX for GSM service

- 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 (Cont.)

IPNext50 IP-PBX for GSM service

## Basic Network Protocols

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

## Routing Protocol

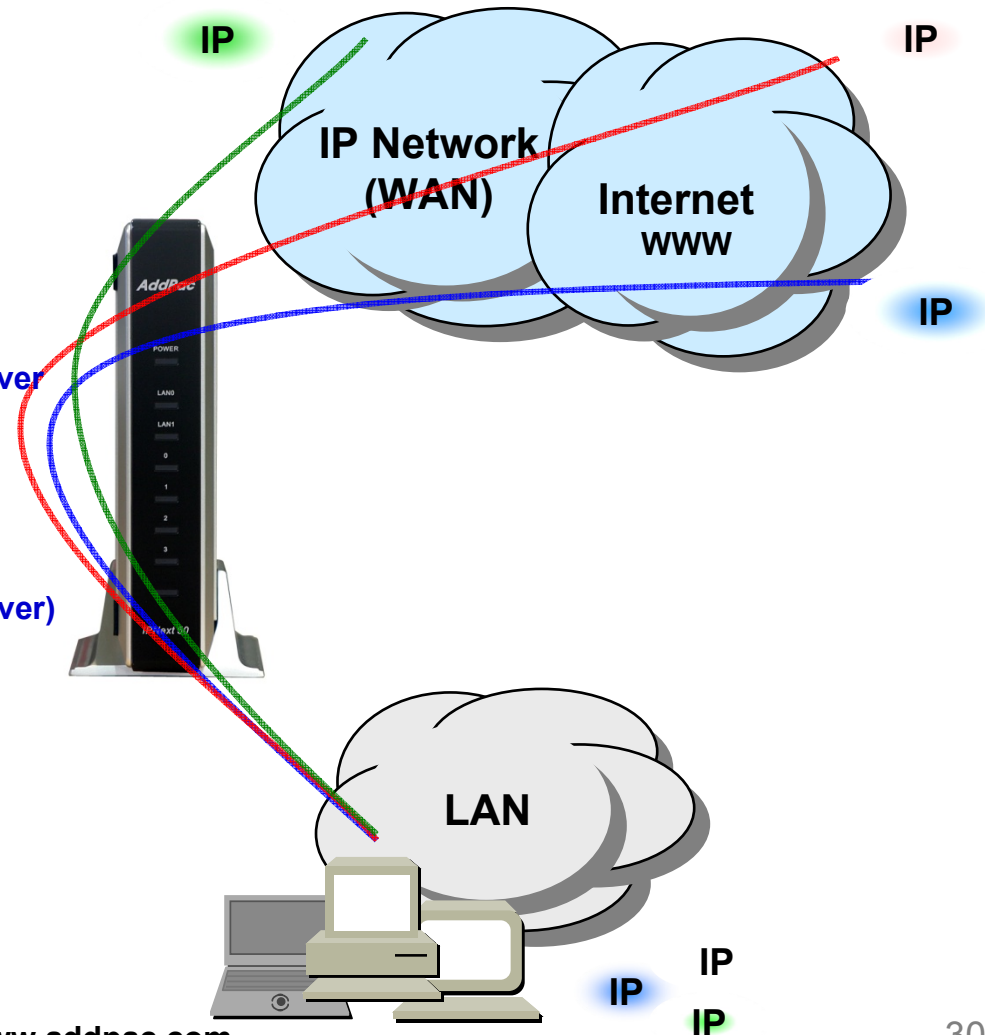
- IPv4 : Static
- IPv6 : Static

## Service Protocol

- FTP, Telnet, TFTP, DHCP Server/Relay, SNMP Server
- CDP (Cisco Discovery Protocol)
- DNS Resolver , DDNS(nsupdate)
- Bridge
- Syslog
- IP/IPv6 policy control (QoS)
- VPDN (Virtual Private Dial-up Network : L2TP Server)

## Miscellaneous

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



# Network Protocols

IPNext50 IP-PBX for GSM service

## IPv4/IPv6 Interworking

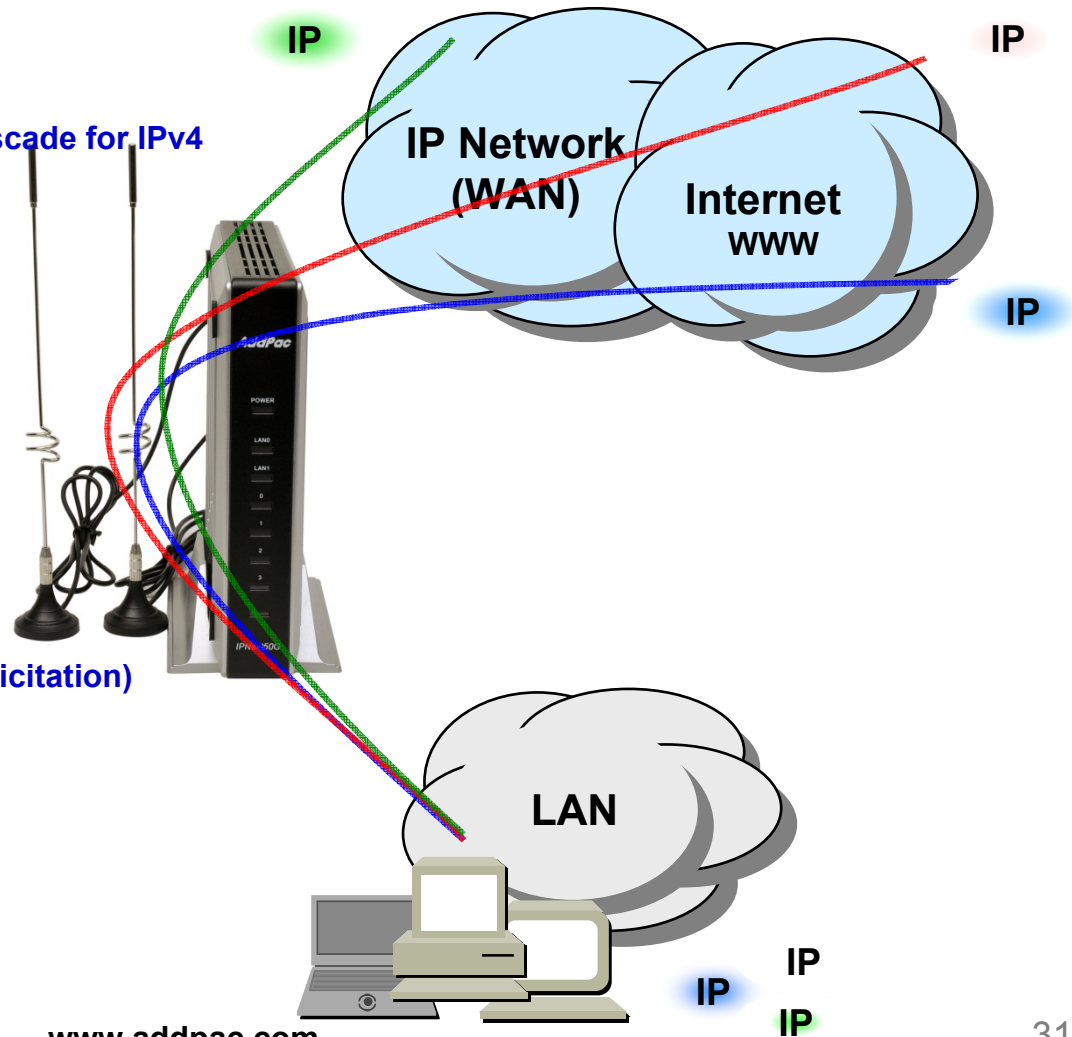
- NAT/PAT for IPv4
- IP connect (formerly ip-share) and device cascade for IPv4
- IP/IP, IP/GRE tunneling
- NAT-PT
- 6to4, Autoconfig tunneling

## IPv4 Address Configuration

- Fixed (Static)
- DHCP
- PPPoE

## IPv6 Address Configuration

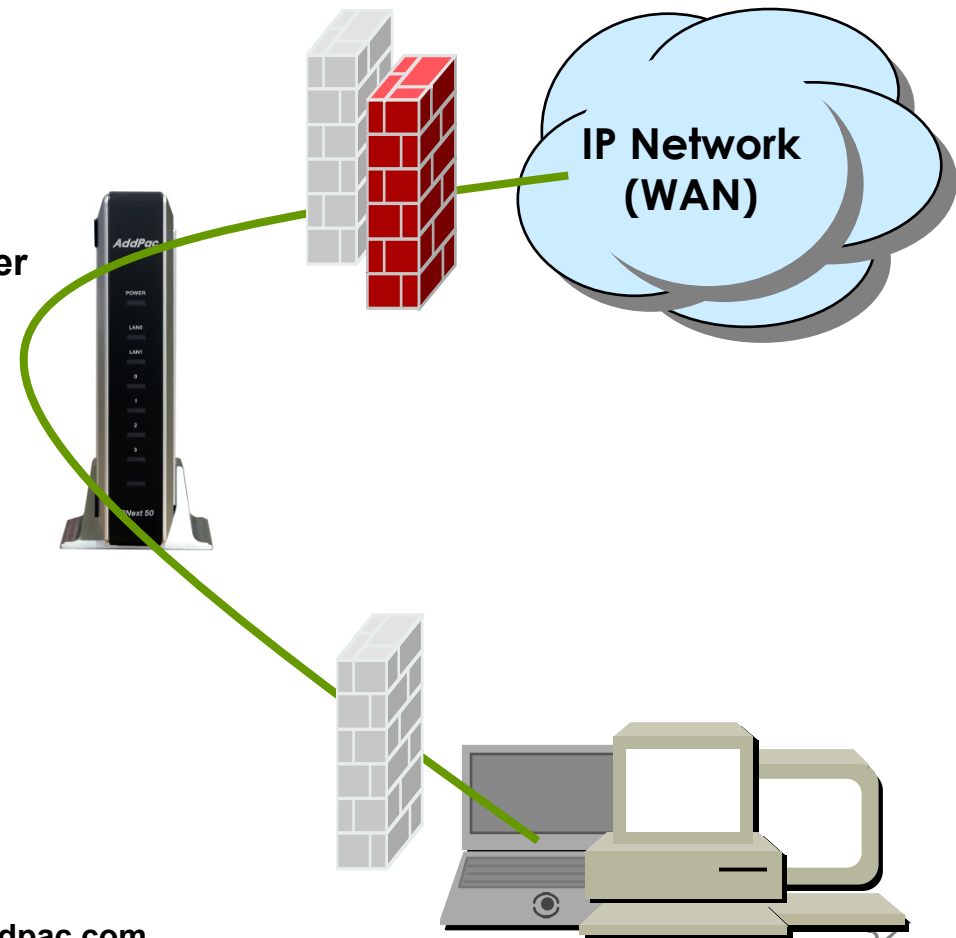
- Fixed (Static)
- EUI-64
- Autoconfig (Neighbor Advertisement and Solicitation)



# Security Management

IPNext50 IP-PBX for GSM service

- 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

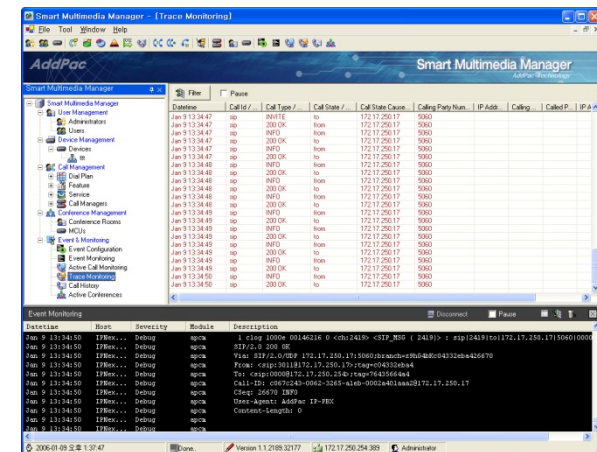




# Smart Multimedia Manager

IPNext50 IP-PBX for GSM service

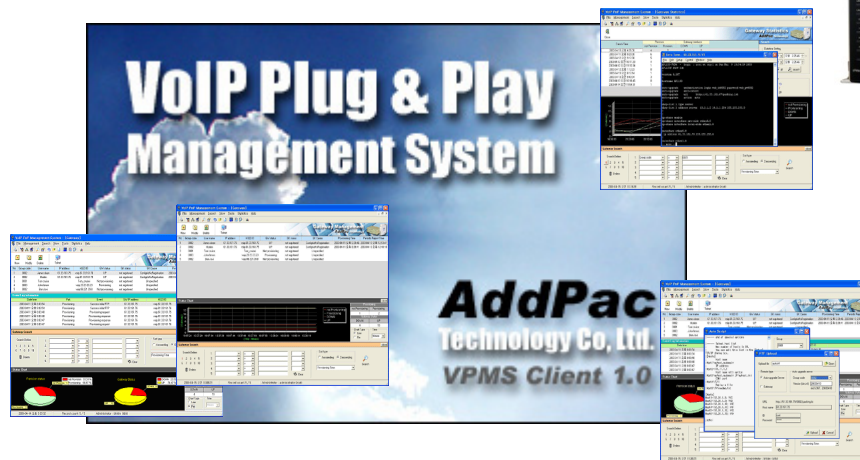
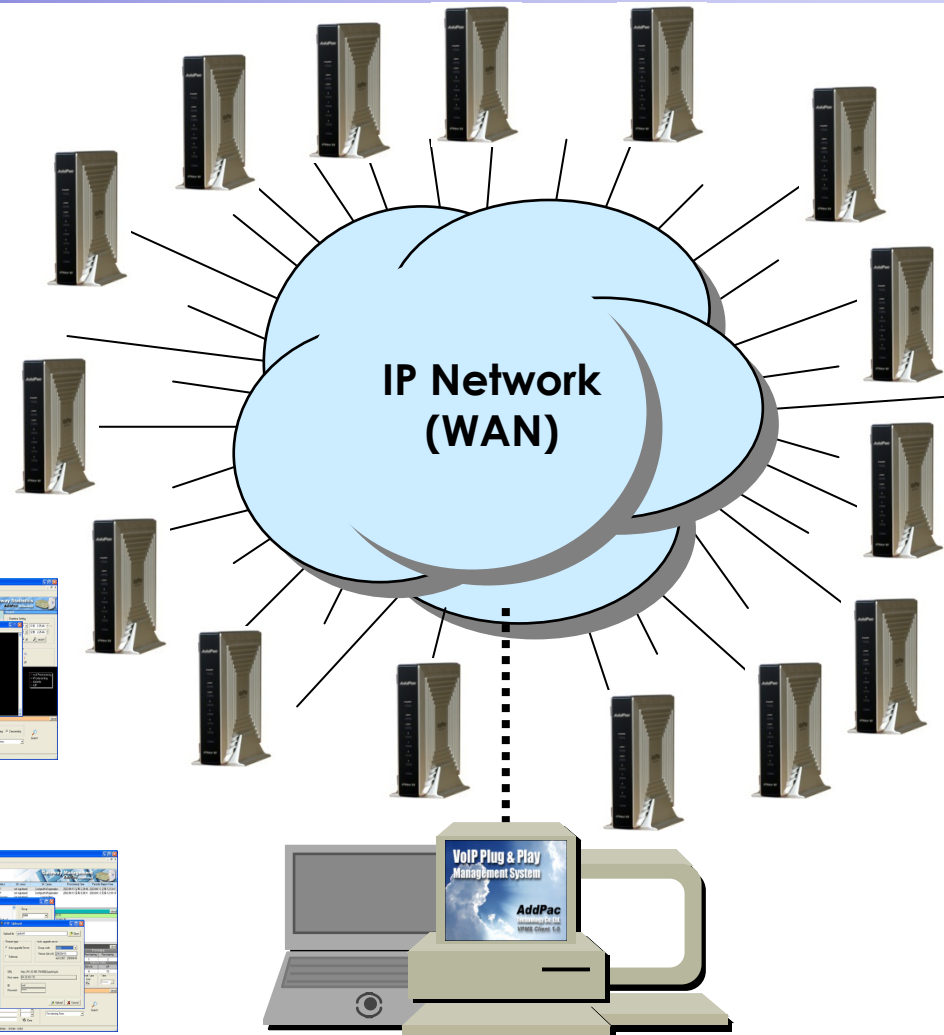
- **Web based Smart and Easy Management Tool Support**
- **User, Device, Call, Conference Management with Intuitive User Interface**
- **Built in Event Manager or External Event Manager Support**
  - Event Configuration with Event Source Filter and Event Logging Filter
  - Event Monitoring with Colorful Format
  - Debug Level Syslog Monitoring Support
  - Event Analysis by Smart Event Analyzer
- **Active Call Monitoring Support**
- **Call Tracing Support**
- **Active Conference Monitoring Support**
- **Call History Viewer Support**
- **Backup, Restore and Initializing of Database Support**
- **Export and Import of Database to Excel File Support**



# VPMS (VoIP Plug&Play Management System)

IPNext50 IP-PBX for GSM service

- **AddPac AP-VPMS Support**
  - AddPac VoIP Plug & Play System (VPMS)
  - Best EMS Solutions for AddPac VoIP G/W
- **Requirements Hardware Platform**
  - Over 1GHz Intel Pentium 4 Machine
  - Over 1GB Main Memory
  - Over 40GB Hard Disk Memory
  - Microsoft Windows Advanced Server or Windows 2000 Server or Windows XP Professional
  - DBMS : Microsoft MS-SQL Server 2000



# IP Multimedia Terminals

IPNext50 IP-PBX for GSM service

- AP-VP500 Video Phone
- AP-VP350 MCU Video Phone
- AP-VP300 Video Phone
- AP-VP280 Video Phone
- AP-VP250 Video Phone
- AP-VP150 Video Phone
- AP-VP120 Video Phone
- AP-IP300 Premium IP Phone
- AP-IP250 IP Phone
- AP-IP160 IP Phone
- AP-IP120 IP Phone
- AP-IP90 IP Phone
- AP-WP100 WiFi Phone
- AP-SMP100 Soft Phone



AP-VP500



AP-VP300



AP-VP150



AP-WP100



AP-VP120



AP-IP300



AP-IP160



AP-IP120

# Smart Messenger

IPNext50 IP-PBX for GSM service

- Support Messenger Service
- Support Various Address Book
- Support User Presence Information
- Support User Search Feature
- Interoperation with Address Book and Smart Phone
- Support Smart Phone Control and Setup
  - Call Control and Forward Setup
- Support Unified Message Box
  - Voice Mail Box
  - Short Message Box



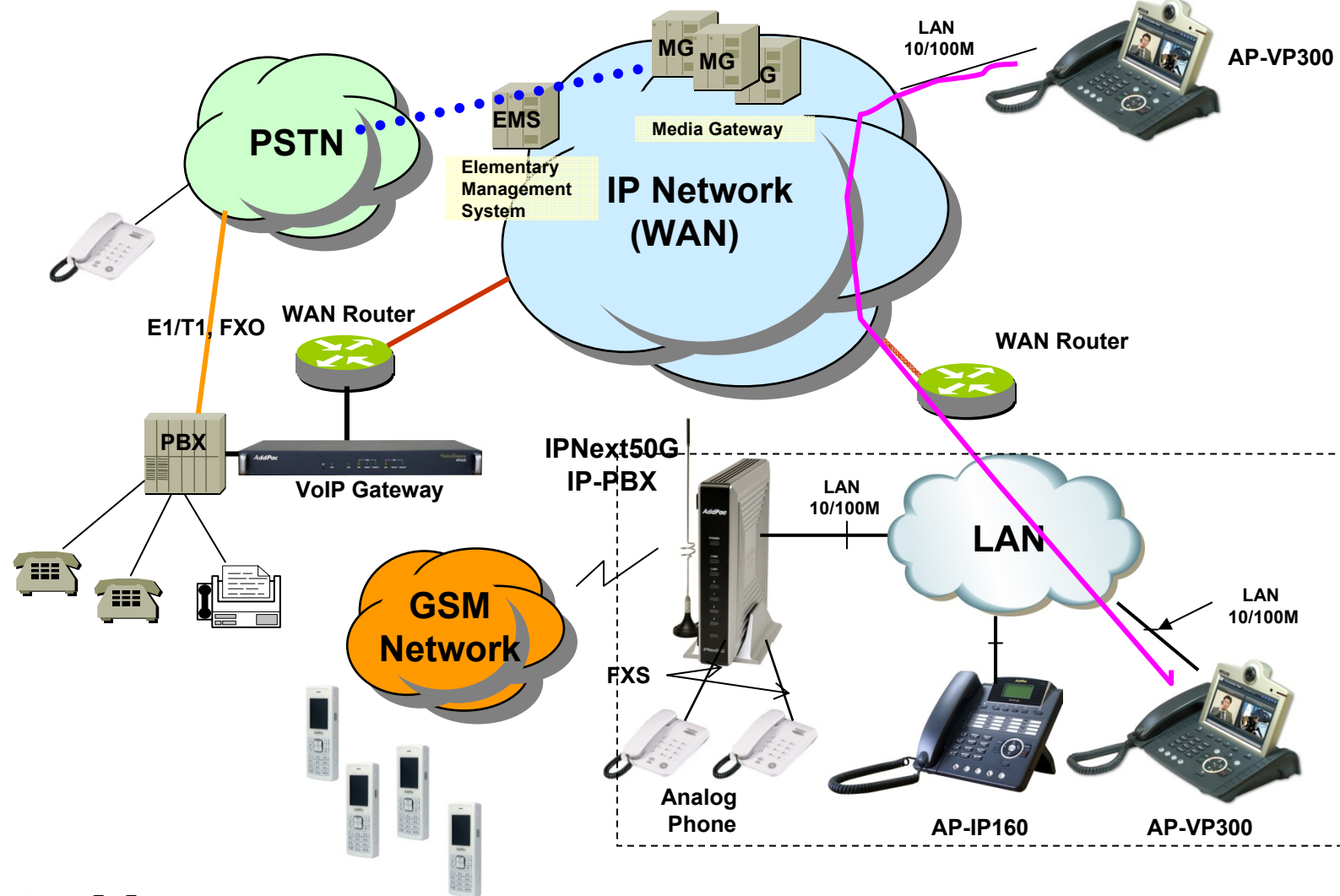
**IPNext50 G  
IP-PBX**



**AddPac Smart Messenger**

# Standard IP-PBX Application

IPNext50 IP-PBX for GSM service





# Ordering Information

- **IPNext50G IP-PBX Hardware**
  - RISC Microprocessor with High-end Programmable DSP Architecture
  - 2-ports 10/100Mbps Fast Ethernet(RJ45)
  - 1-Port RS232C Interface for Command Line Interface
  - VoIP Gateway Interface
  - GSM Interface (IPNext50 Model GA,GB,GD)
  - Including Network Cable, Antenna & Ext. Power Supply, etc.
- **Built-in APOS Internetworking Software for IPNext50G**
- **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)

# IPNext IP-PBX Series

# Thank you!

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