IPNext180PTT
NGN PTT Hybrid IP-PBX System

High-performance Next Generation PTT Hybrid IP-PBX System

Preliminary Product Overview

AddPac Technology

Sales and Marketing

Contents

- Product Overview

- Hardware Specification

- Software Service

- IP-PBX Service and Features

- RTP Proxy Service

- User Presence Service

- Network Service and Features

- PTT & RoIP Service

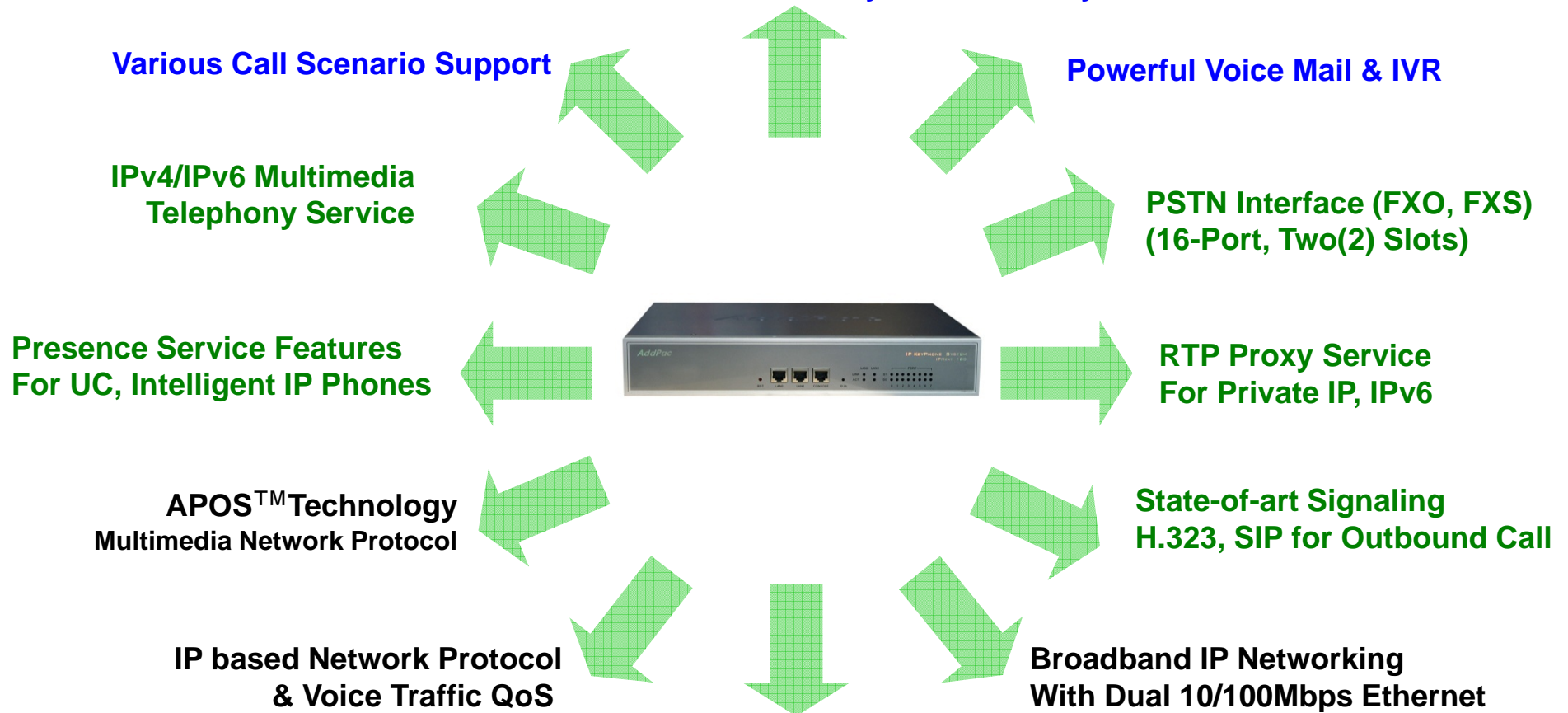- User Terminals

- Application Area

- Ordering Information

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Product Overview

- IP based Advanced Hybrid IP-PBX Solution
- High Performance PTT Server Solution
- IPv4/IPv6 Multimedia Telephony Solution for Small & Medium Office
- PSTN Interface (FXO, FXS) Support
- Powerful Management and User Friendly Features
- Fault Tolerant and Scalability Architecture
- High-performance Video, Audio, and Voice Service
- Firmware Upgradeable Architecture
- IVR Service with Scenario Editor
- Voice Mailing Service
- Presence Service for High-End IP Key Phone, UC
- RTP Proxy Service for Private IP service
- SIP, H.323 Signaling for Outbound Calls
- Various Call Scenario (Call Pickup, Call Park, Call Transfer, etc)
- Various IP Terminal Support

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Product Highlights

IP based Advanced PTT Hybrid IP-PBX System

Various Call Scenario Support

Powerful Voice Mail & IVR

IPv4/IPv6 Multimedia Telephony Service

PSTN Interface (FXO, FXS) (16-Port, Two(2) Slots)

Presence Service Features For UC, Intelligent IP Phones

RTP Proxy Service For Private IP, IPv6

APOS™Technology Multimedia Network Protocol

State-of-art Signaling H.323, SIP for Outbound Call

IP based Network Protocol & Voice Traffic QoS

Broadband IP Networking With Dual 10/100Mbps Ethernet

Smart Multimedia Manager for System Management

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Hardware Specification

IPNext180 PTT Hybrid IP-PBX System

64bit
CPU

- **RISC Microprocessor Computing Power**

- **Main Chassis**
  - **Fixed Network Interface**
    - Two(2) 10/100Mbps Fast Ethernet
    - One(1) RS-232C Console (RJ45)
  - **Two(2) VoIP Module Slots for FXS, FXO etc**

Hardware Specification

IPNext180 PTT Hybrid IP-PBX System

64bit
CPU

DSP

Front Side

LAN1 (10/100Mbps)

LAN0(10/100Mbps)

Console Port

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Hardware Specification

IPNext180 PTT Hybrid IP-PBX System

64bit CPU

DSP

Back Side

PSTN Interface Module

Power Inlet

Power Switch

Hot-Swap Switch & LAMP Indication

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Hardware Specification

64bit
CPU

Audio Codec

- **VoIP Interface Module**

AP-N1-FXS8		8-Port FXS Voice Processing Module (8 x RJ11)
AP-N1-FXO8		8-Port FXO Voice Processing Module (8 x RJ11)
AP-N1-FXO4S4		4-Port FXO and 4-Port FXS Voice Processing Module (8 x RJ11)
AP-N1-E1T1		1-Port VoIP Digital E1/T1 Interface Module(1xRJ45)

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Software Service

- **Built-in AddPac APOS Internetworking Software**
  - Scalability, Functionality, and Stability Features
  - Advanced Call Manager Features
  - Media Gateway Features
  - QoS Control Features

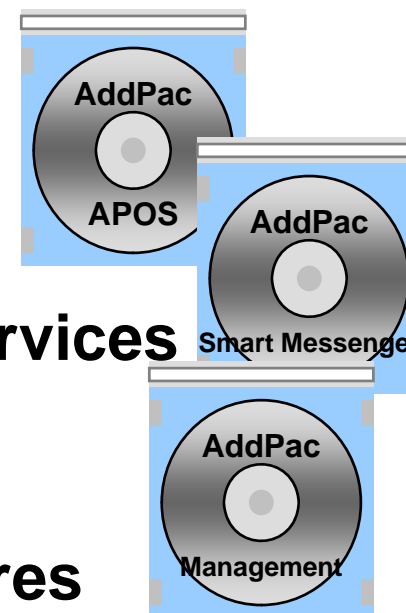- **Programmable Video, Audio, and Voice Services**
  - Audio, and Voice Codec

- **Firmware Upgradeable Architecture**

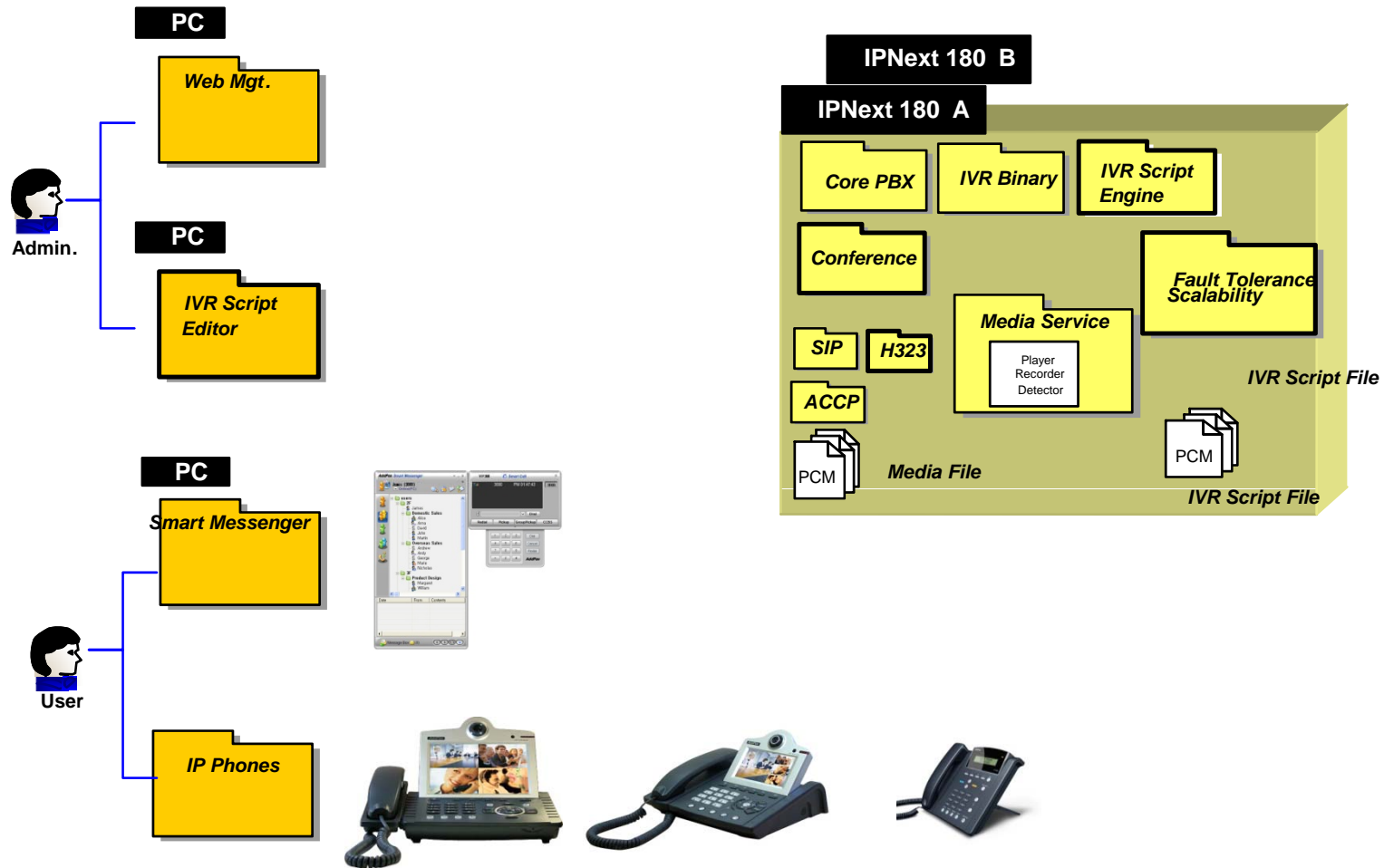- **Industry Standard Network Protocol Features**

- **Highly User Friendly Management Features**
  - Smart Messenger for UC
  - Smart Multimedia Manager

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IP-PBX Software Components

IPNext180 PTT Hybrid IP-PBX System

PC

Web Mgt.

Admin.

PC

IVR Script Editor

PC

Smart Messenger

User

IP Phones

IPNext 180 B

IPNext 180 A

Core PBX

IVR Binary

IVR Script Engine

Conference

Fault Tolerance Scalability

SIP

H323

Media Service

Player
Recorder
Detector

IVR Script File

ACCP

PCM

Media File

PCM

IVR Script File

IVR Script File

IP Telephony Service and Features

IPNext180 PTT Hybrid IP-PBX System

- **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

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IP Telephony Service and Features

IPNext180 PTT Hybrid IP-PBX System

- **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 Swaping
  - Call Hold

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IP Telephony Service and Features

IPNext180 PTT Hybrid IP-PBX System

- **IP-PBX Advanced Features with AddPac IP 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 Swaping by Softkey
    - Call Hold by SoftKey
    - Conference Control

IP Telephony Service and Features

IPNext180 PTT Hybrid IP-PBX System

- **User & Device Management**
  - LDAP (Light weight 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
  - Personal Directory
  - Downloadable Ring
  - Do not Disturb

IP Telephony Service and Features

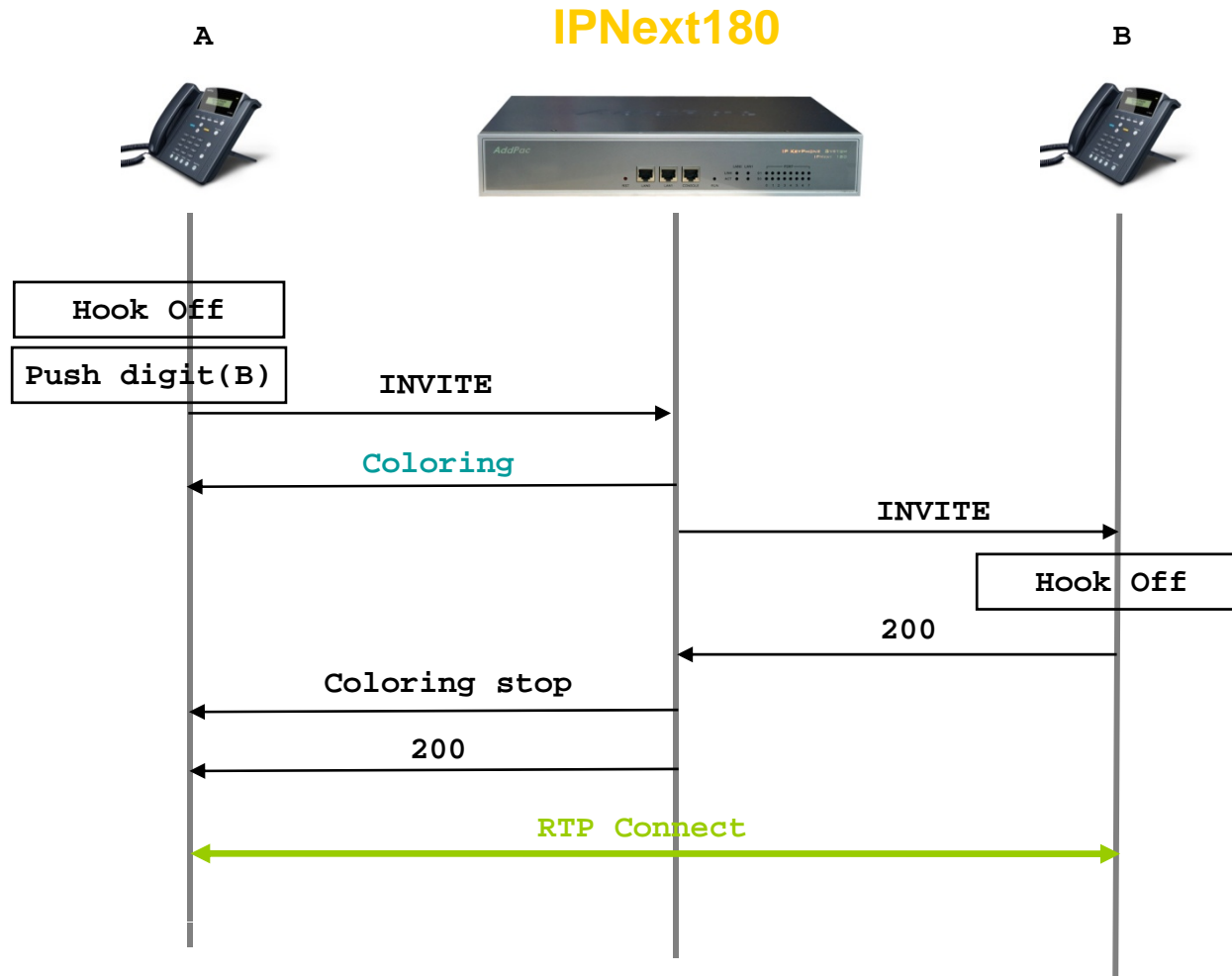## IPNext180 PTT Hybrid IP-PBX System

- **Conference**
  - G.711 (4-party Conference, 2 session) : Basic
  - G.711/G.729/G.723 (4-party Conference, 2session) Internal MCU Module : Option
  - 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
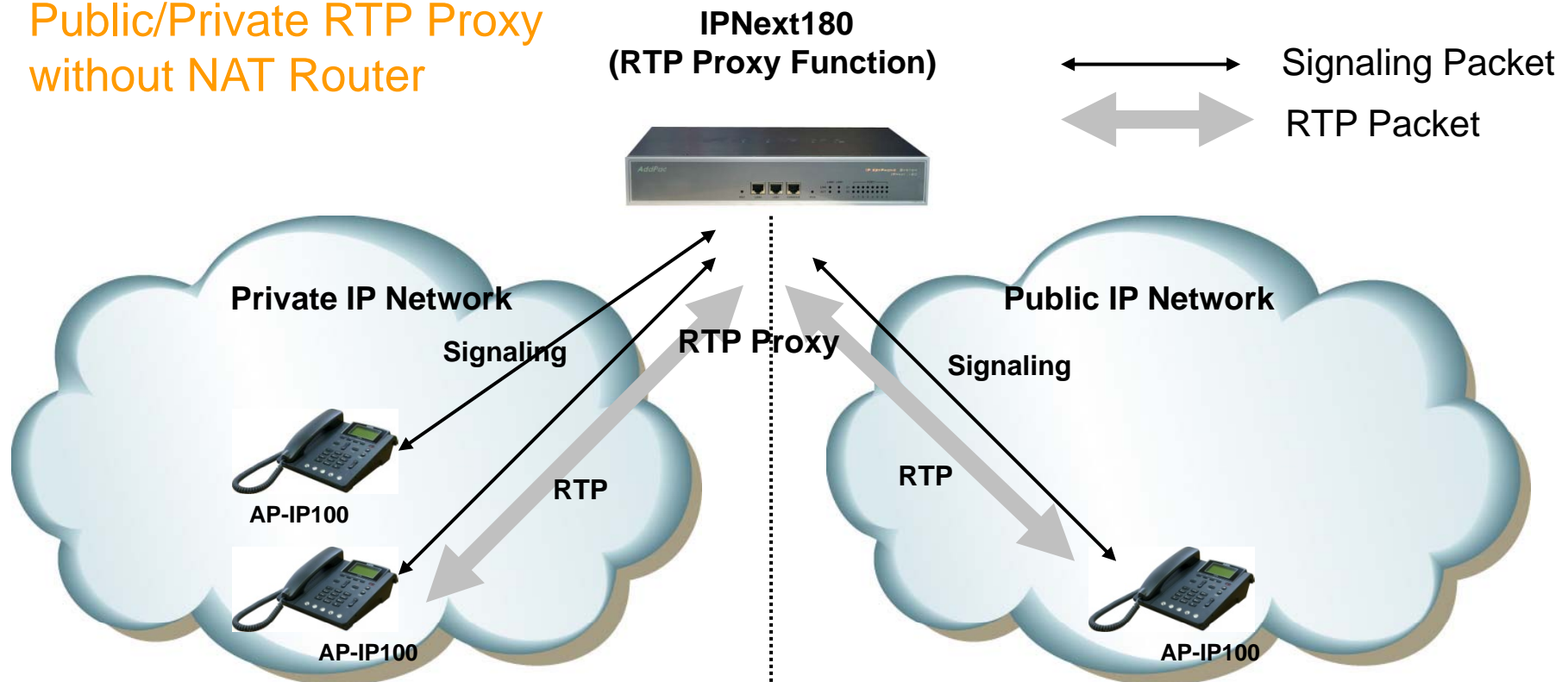
SIP based Basic Call Scenario

IPNext180 PTT Hybrid IP-PBX System

A　　　　　　　**IPNext180**　　　　　　　**B**

Hook Off

Push digit(B) → INVITE →

← Coloring

INVITE →

Hook Off

← 200

← Coloring stop

← 200

← RTP Connect →

RTP Proxy Service

IPNext180 PTT Hybrid IP-PBX System

Public/Private RTP Proxy without NAT Router

IPNext180 (RTP Proxy Function)

Signaling Packet

RTP Packet

Private IP Network

Signaling

RTP Proxy

Public IP Network

Signaling

RTP
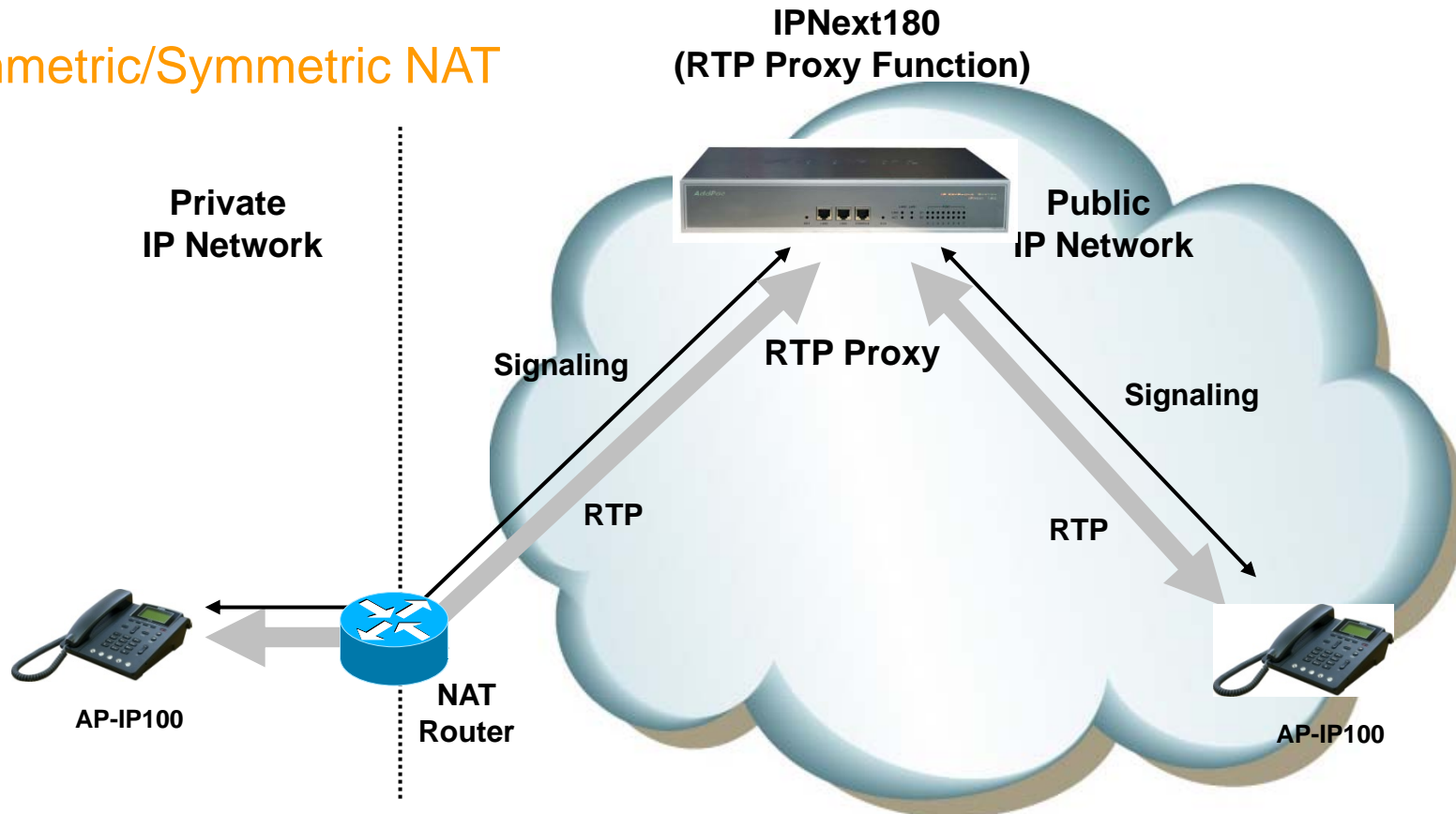
AP-IP100

RTP

AP-IP100

AP-IP100

- Located between public and private network
- IPNext180(Call manager + RTP proxy) has public and private address
- IPNext180 determine that the call is internal or external

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RTP Proxy Service

IPNext180 PTT Hybrid IP-PBX System

Asymmetric/Symmetric NAT

**IPNext180
(RTP Proxy Function)**

**Private
IP Network**

**Public
IP Network**

Signaling

RTP Proxy

Signaling

RTP

RTP
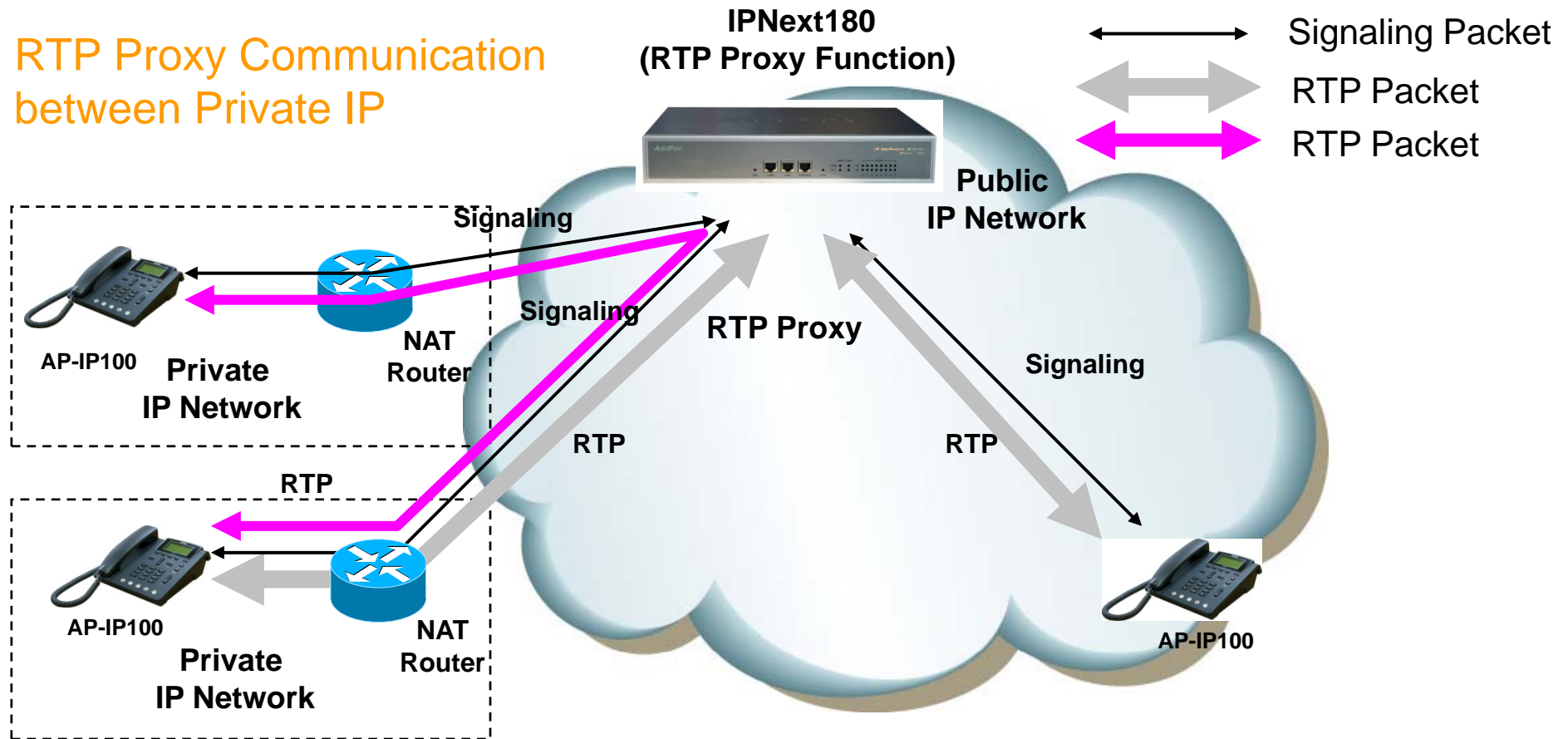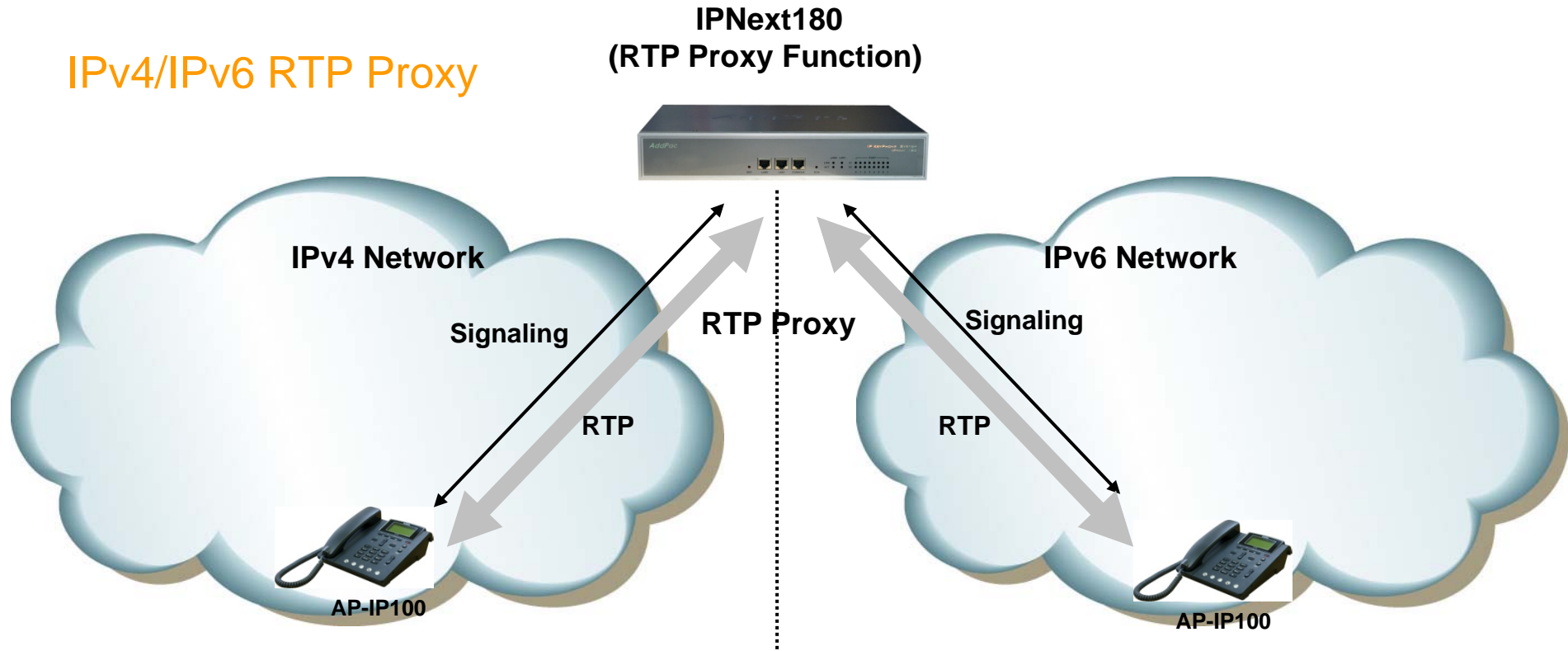
AP-IP100

**NAT
Router**

AP-IP100

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

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RTP Proxy Service

IPNext180 PTT Hybrid IP-PBX System

RTP Proxy Communication between Private IP

**IPNext180
(RTP Proxy Function)**

Signaling Packet
RTP Packet
RTP Packet

**Public
IP Network**

Signaling

Signaling

RTP Proxy

Signaling

AP-IP100 **Private
IP Network**

NAT
Router

RTP

RTP

RTP

AP-IP100 **Private
IP Network**

NAT
Router

AP-IP100

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

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RTP Proxy Service

IPNext180 PTT Hybrid IP-PBX System

**IPNext180
(RTP Proxy Function)**

IPv4/IPv6 RTP Proxy

IPv4 Network

IPv6 Network

Signaling

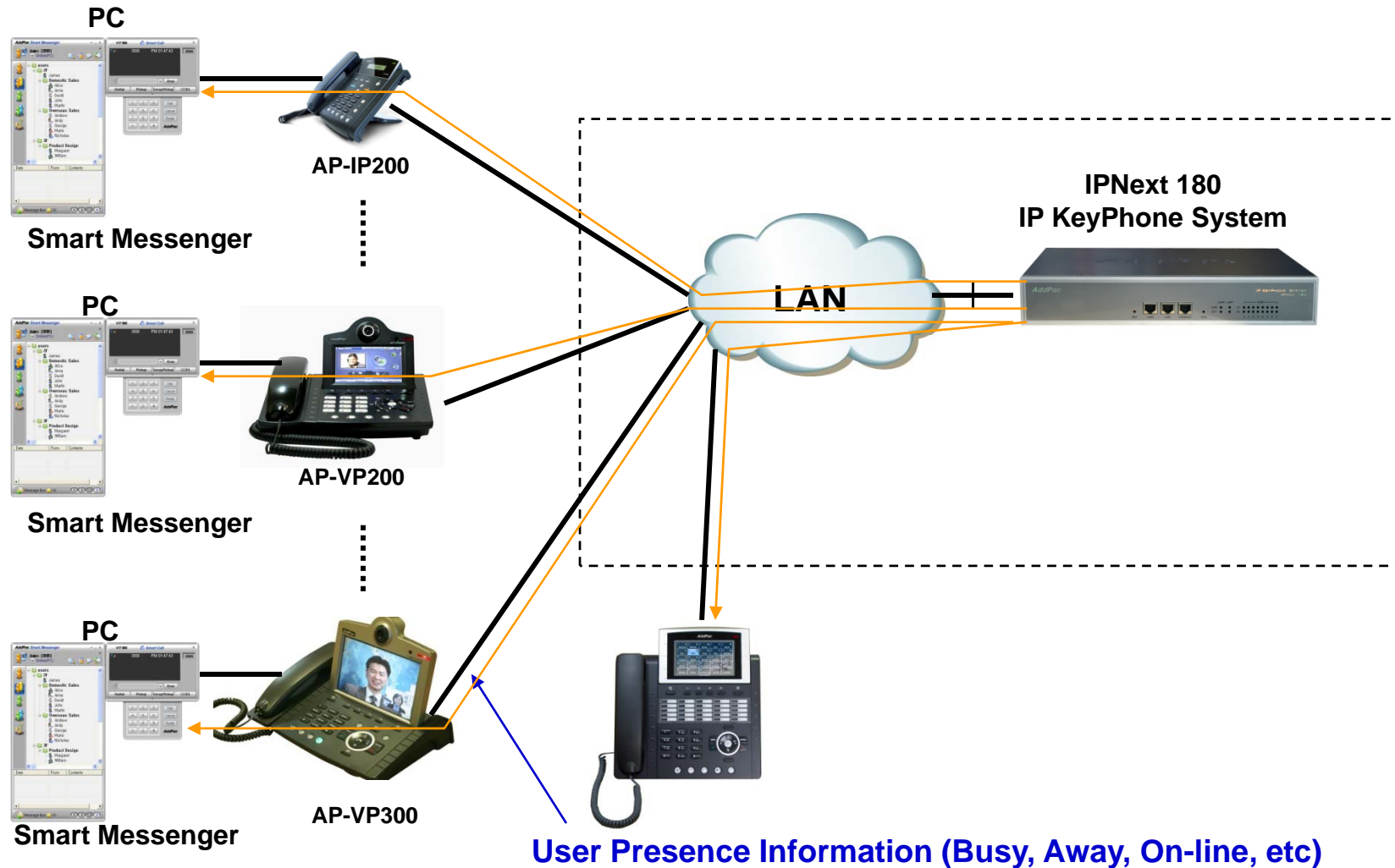**RTP Proxy**

Signaling

RTP

RTP

AP-IP100

AP-IP100

- IPNext180(Call manager + RTP proxy) has IPv4 and IPv6 address

User Presence Service for UC

IPNext180 PTT Hybrid IP-PBX System

PC

Smart Messenger

AP-IP200

PC

Smart Messenger

AP-VP200

PC

Smart Messenger

AP-VP300

LAN

IPNext 180
IP KeyPhone System

User Presence Information (Busy, Away, On-line, etc)

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Network Service and Features

IPNext180 PTT Hybrid IP-PBX System

Basic Network Protocols
 - ARP, IP, IPv6, TCP, UDP, ICMP, ICMPv6, 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 Provate Dial-up Network : L2TP Server)

Network Service and Features

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)

Network Service and Features

IPNext180 PTT Hybrid IP-PBX System

Miscellaneous

- Cisco Style CLI
- Standard & Extended IPv4/IPv6 Access List
- Multi-level User Account Management
- IP accounting
- fsh (Embedded file system shell)
- STUN Client

Network Service and Features

SNMP MIBs

- MIB-II
- RMON MIBs (Statistsics, History, Alarm, Hosts Group)
- RFC2465 Management Information Base for IP Version 6:
  Textual Conventions and General Group
- RFC2466 Management Information Base for IP Version 6:
  ICMPv6 Group
- RFC2452 IP Version 6 Management Information Base for the
  Transmission Control Protocol
- RFC2454 IP Version 6 Management Information Base for the
  User Datagram Protocol
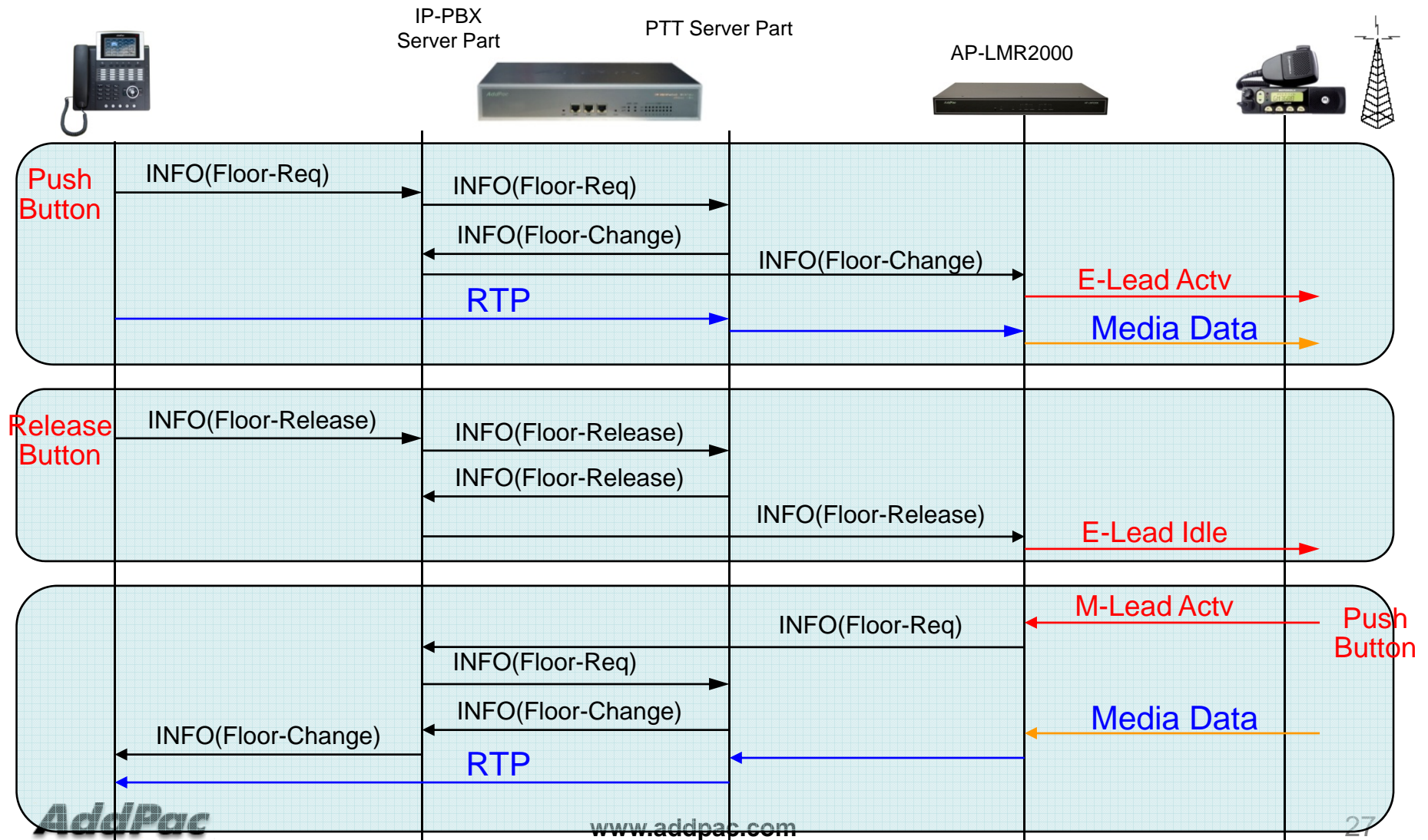- AddPac Enterprise MIBs
- etc

PTT Service

- IP based PTT Service Support
- Dial-Out based PTT Service Support
    - Multi-Session, Multi-Group
    - PtP (Point-to-Point) Service
- Advanced PTT Server Features
    - 1:1 PTT
    - Group PTT
    - Emergency PTT with Alarm Notification
- Emergency PTT Service Support
- IP-PBX Interworking Service
- IP Terminal Interworking Service (Wi-Fi Phone, IP Phones, Soft Phone, Smart Phone Application)
- PTT Solution with Outstanding Network Service Capability

RoIP System Message Flow
(IP-PBX + PTT Server Integrated Server Model)
SIP Message Flow (Floor Control : Push To Talk)

IP-PBX Server Part

PTT Server Part

AP-LMR2000

Push Button
INFO(Floor-Req)
INFO(Floor-Req)
INFO(Floor-Change)
INFO(Floor-Change)
E-Lead Actv
RTP
Media Data

Release Button
INFO(Floor-Release)
INFO(Floor-Release)
INFO(Floor-Release)
INFO(Floor-Release)
E-Lead Idle

M-Lead Actv
INFO(Floor-Req)
INFO(Floor-Req)
INFO(Floor-Change)
Media Data
INFO(Floor-Change)
RTP
Push Button

AddPac IP Phone Comparison Table

IPNext180 PTT Hybrid IP-PBX System

	AP-IP300	AP-IP250	AP-IP230	AP-IP160	AP-IP120	AP-IP90
LCD Size	4.3 Inch Color LCD	4.3 Inch Color LCD	5 Inch Color LCD	4 Text Line Graphic LCD	4 Text Line Graphic LCD	4 Text Line Graphic LCD
Touch Screen	N/A	Support	Support	N/A	N/A	N/A
Speed-Dial Keys	25 Key with Presence LED	Touch Screen based 25 Keys	Touch Screen based 25 Keys	16 Key with Presence LED	12 Key with Presence LED	N/A
Voice Codec	G.711/G.726/ G.729/G.723	G.711/G.726/ G.729/G.723	G.711/G.726/ G.729/G.723	G.711/G.726/ G.729/G.723	G.711/G.726/ G.729/G.723	G.711/G.726/ G.729/G.723
Signaling	H.323/SIP	H.323/SIP	H.323/SIP	H.323/SIP	H.323/SIP	H.323/SIP
3-Party Conversation	Support	Support	Support	Support	Support	Support
LAN Port	2	2	2	2	2	2
PoE(Option)	Support	Support	Support	Support	Support	Support
FXO(Option)	Support	Support	Support	Support	Support	Support

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IPNext180 PTT IP-PBX System

Ordering Information

- **IPNext180 PTT Hybrid IP-PBX System**
  - IPNext180 PTT IP-PBX System Main Body
  - High-performance RISC CPU
  - 2-ports 10/100Mbps Fast Ethernet and 1-port RS-232C Console
  - Internal Power Supply
  - Including Network Cable Set & Power Supply Cable, etc.
  - PSTN Interface Modules (Option)
- **Built-in APOS Internetworking Software for IPNext180 PTT**
- **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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Sales and Marketing

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