IPNext187
NGN Hybrid IP-PBX System
High-performance Next Generation Hybrid IP-PBX System

Preliminary Product Overview

AddPac Technology
Sales and Marketing

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Contents

• Product Overview
• Hardware Specification
• Software Service
• Hybrid IP-PBX Service and Features
• RTP Proxy Service
• User Presence Service
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Product Overview

IPNext187 Next Generation Hybrid IP-PBX System

- IP based Advanced Hybrid IP-PBX Solution
- IPv4/IPv6 Multimedia Telephony Solution for Small Office
- PSTN Interface (FXO, FXS, E1/T1) 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
Product Highlights

IPNext187 Next Generation Hybrid IP-PBX System

- **IPv4/IPv6 Multimedia Telephony Service**
- **Presence Service Features for UC, Intelligent IP Phones**
- **APOS™ Technology Multimedia Network Protocol**
- **IP based Network Protocol & Voice Traffic QoS**
- **IP based Advanced Hybrid IP-PBX System**
- **RTP Proxy Service For Private IP, IPv6**
- **State-of-art Signaling H.323, SIP for Outbound Call**
- **Smart Multimedia Manager for System Management**
- **PSTN Interface (FXO, FXS, E1/T1) (24-Port, Three(3) Slots)**
- **Broadband IP Networking With Dual 10/100Mbps Ethernet**
- **Powerful Voice Mail & IVR**
- **Various Call Scenario Support**

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Hardware Specification
IPNext187 Next Generation Hybrid IP-PBX System

• **RISC Microprocessor Computing Power**

• **Main Chassis**
  – Network Interface
    • Two(2) 10/100Mbps Fast Ethernet
    • One(1) RS-232C Console (RJ45)
  – Three(3) VoIP Module Slots for FXS, FXO, E1/T1, etc

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Hardware Specification
IPNext187 Next Generation Hybrid IP-PBX System

IPNext187 Front Side

LAN1 (10/100Mbps)
LAN0 (10/100Mbps)
Console Port
### Hardware Specification
**IPNext187 Next Generation Hybrid IP-PBX System**

#### VoIP Interface Module

<table>
<thead>
<tr>
<th>Module</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP-N1-FXS8</td>
<td>8-Port FXS Voice Processing Module (8 x RJ11)</td>
</tr>
<tr>
<td>AP-N1-FXO8</td>
<td>8-Port FXO Voice Processing Module (8 x RJ11)</td>
</tr>
<tr>
<td>AP-N1-FXO4S4</td>
<td>4-Port FXO and 4-Port FXS Voice Processing Module (8 x RJ11)</td>
</tr>
<tr>
<td>AP-N1-E1T1</td>
<td>1-Port VoIP Digital E1/T1 Interface Module (1xRJ45)</td>
</tr>
</tbody>
</table>

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Hardware Specification
IPNext187 Next Generation Hybrid IP-PBX System

16-Port FXS+ 1-Port Digital E1/T1 Service Diagram

AP-N1-E1/T1
Digital E1/T1 Framer
DSP

AP-N1-FXS8
SLIC
DSP

AP-N1-FXS8
SLIC
DSP

System Board
RISC CPU
MAC
Internet

PBX
RJ45
RJ11
SLIC
RJ11
SLIC
RJ11
SLIC

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Software Service

IPNext187 Next Generation Hybrid IP-PBX System

• 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
IP-PBX Software Components
IPNext187 Next Generation Hybrid IP-PBX System
IP Telephony Service and Features

IPNext187 Next Generation 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
IP Telephony Service and Features

IPNext187 Next Generation 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
• **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

IPNext187 Next Generation 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

IPNext187 Next Generation Hybrid IP-PBX System

• Conference
  – G.711 (4-party Conference, 2 session) : basic
  – G.711/G.729/G.723 (4-party Conference, 2 session) 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
IPNext187 Next Generation Hybrid IP-PBX System

A

Hook Off
Push digit(B)

INVITE

Coloring

Coloring stop

200

RTP Connect

IPNext187

B

INVITE

Hook Off

200
RTP Proxy Service

IPNext187 Next Generation Hybrid IP-PBX System

- Located between public and private network
- IPNext187 (Call manager + RTP proxy) has public and private address
- IPNext187 determine that the call is internal or external

Public/Private RTP Proxy without NAT Router

IPNext187 (RTP Proxy Function)

Signaling Packet
RTP Packet

Private IP Network
- AP-IP230

Public IP Network
- AP-IP230

RTP Proxy
- Signaling
- RTP Packet

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RTP Proxy Service
IPNext187 Next Generation Hybrid IP-PBX System

Asymmetric/Symmetric NAT

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

Private IP Network

Public IP Network

Signaling

RTP

AP-IP100

NAT Router

IPNext187 (RTP Proxy Function)

RTP Proxy

AP-IP100
RTP Proxy Service
IPNext187 Next Generation Hybrid IP-PBX System

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
• IPNext187 (Call manager + RTP proxy) has IPv4 and IPv6 address
User Presence Service for UC
IPNext187 Next Generation Hybrid IP-PBX System

Smart Messenger

User Presence Information (Busy, Away, On-line, etc)
Network Service and Features
IPNext187 Next Generation 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 Private Dial-up Network : L2TP Server)
Network Service and Features
IPNext187 Next Generation Hybrid IP-PBX System

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
IPNext187 Next Generation 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
SNMP MIBs
- MIB-II
- RMON MIBs (Statistics, 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
User Terminals

IPNext187 Next Generation Hybrid IP-PBX System

- AP-VP500 Video Phone
- AP-VP350 MCU Video Phone
- AP-VP300 Video Phone
- AP-VP280 Video Phone
- AP-VP250 Video Phone
- AP-VP230 Video Phone
- AP-VP150 Video Phone
- AP-VP120 Video Phone
- AP-IP300 Premium IP Phone
- AP-IP230 IP Phone
- AP-IP160 IP Phone
- AP-IP120 IP Phone
- AP-IP90 IP Phone
- AP-WP100 WiFi Phone
- AP-SMP100 Soft Phone
## IP Video Phone Comparison Table

<table>
<thead>
<tr>
<th></th>
<th>AP-VP500</th>
<th>AP-VP350</th>
<th>AP-VP300N</th>
<th>AP-VP280</th>
<th>AP-VP250</th>
<th>AP-VP230</th>
<th>AP-VP150</th>
<th>AP-VP120</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCD Size</td>
<td>12.1 Inch Touch Screen</td>
<td>7Inch Touch Screen</td>
<td>7Inch Touch Screen</td>
<td>7Inch Touch Screen</td>
<td>4.3Inch Touch Screen</td>
<td>5Inch Touch Screen</td>
<td>4.3Inch Touch Screen</td>
<td>4.3Inch Touch Screen</td>
</tr>
<tr>
<td>Camera</td>
<td>CCD</td>
<td>CCD</td>
<td>CCD</td>
<td>CMOS</td>
<td>CMOS</td>
<td>CMOS</td>
<td>CCD</td>
<td>CMOS</td>
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<tr>
<td>Video MCU</td>
<td>N/A</td>
<td>4-Party Video MCU</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>Voice MCU</td>
<td>3-Party</td>
<td>3-Party</td>
<td>3-Party</td>
<td>3-Party</td>
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<td>LAN Port</td>
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<tr>
<td>PoE</td>
<td>N/A</td>
<td>N/A</td>
<td>Support</td>
<td>N/A</td>
<td>Support</td>
<td>Support</td>
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# IP Phone Comparison Table

<table>
<thead>
<tr>
<th></th>
<th>AP-IP300</th>
<th>AP-IP250</th>
<th>AP-IP230</th>
<th>AP-IP160</th>
<th>AP-IP120</th>
<th>AP-IP90</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LCD Size</strong></td>
<td>4.3 Inch Color LCD</td>
<td>4.3 Inch Color LCD</td>
<td>5 Inch Color LCD</td>
<td>4 Text Line Graphic LCD</td>
<td>4 Text Line Graphic LCD</td>
<td>4 Text Line Graphic LCD</td>
</tr>
<tr>
<td><strong>Touch Screen</strong></td>
<td>N/A</td>
<td>Support</td>
<td>Support</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Speed-Dial Keys</strong></td>
<td>25 Key with Presence LED</td>
<td>Touch Screen based 25 Keys</td>
<td>Touch Screen based 25 Keys</td>
<td>16 Key with Presence LED</td>
<td>12 Key with Presence LED</td>
<td>N/A</td>
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<tr>
<td><strong>Signaling</strong></td>
<td>H.323/SIP</td>
<td>H.323/SIP</td>
<td>H.323/SIP</td>
<td>H.323/SIP</td>
<td>H.323/SIP</td>
<td>H.323/SIP</td>
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<tr>
<td><strong>3-Party Conversation</strong></td>
<td>Support</td>
<td>Support</td>
<td>Support</td>
<td>Support</td>
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<td>Support</td>
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<tr>
<td><strong>LAN Port</strong></td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>PoE(Option)</strong></td>
<td>Support</td>
<td>Support</td>
<td>Support</td>
<td>Support</td>
<td>Support</td>
<td>Support</td>
</tr>
<tr>
<td><strong>FXO(Option)</strong></td>
<td>Support</td>
<td>Support</td>
<td>Support</td>
<td>Support</td>
<td>Support</td>
<td>Support</td>
</tr>
</tbody>
</table>
Smart Messenger for UC
IPNext187 Next Generation Hybrid IP-PBX System

- Smart Messenger Program
  - PC based MS-Window Program
  - Support Messenger Service
  - Support Various Address Book
  - Support User Presence Information (Busy, Away, On-line, etc)
  - 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

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Standard Hybrid IP-PBX System Application

IPNext187 Next Generation Hybrid IP-PBX System

PSTN

E1/T1, FXO

WAN Router

VoIP Gateway

EMS
Elementary Management System

Media Gateway

IP Network (WAN)

LAN 10/100M

AP-VP150

AP-VP300

AP-IP300

AP-IP230

AP-IP100

PBX

WAN Router

Conference

VoIP Gateway

LAN 10/100M

IPNext187 Hybrid IP-PBX System

LAN

WAN Router

LAN 10/100M

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Ordering Information

- **IPNext187 Next Generation Hybrid IP-PBX System**
  - IPNext187 Hybrid IP-PBX System Main Body
  - High-performance 64bit 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.
  - VoIP Interface Modules (Option)

- **Built-in APOS Internetworking Software for IPNext187**

- **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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