PTT (Push-to-Talk) over IP Solution

Preliminary Product Overview

(Without notice, following described technical spec. can be changed)

AP-PTS3000
PTT Server





AP-IP300 PTT
IP Phone



IPNext3000
IP-PBX



AP-WP100P
Wi-FI PTT Phone

AddPac Technology

2010, Sales and Marketing

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  - AP-PTS3000 PTT Server
  - AP-WP100P Wi-Fi Phone for PTT Service
  - AP-IP300 IP Phone for PTT Service
  - Network Management System

IP based PTT Service Features

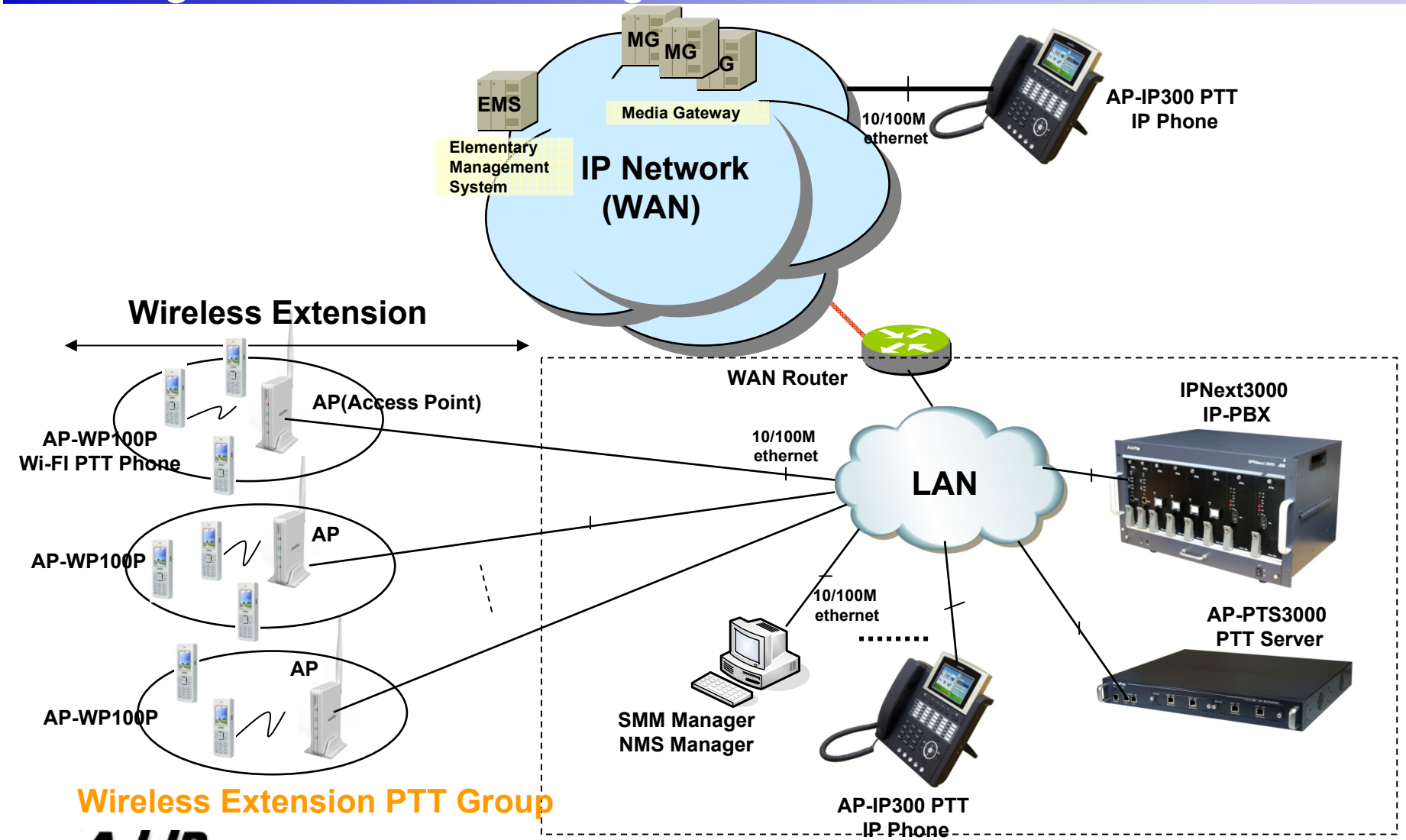
- Various VoIP & PTT Call Mode Support
  - VoIP Call & PTT Call Support
  - Call Waiting Support and Incoming Call Indication
  - VoIP Call and PTT Call Mode Change
  - Various PTT Call Mode Support
    - Point-to-Point PTT Call, Group PTT Call, Emergency PTT Call
  - PTT Call Connection using Send/PTT Button
- Status Display & Indication Function
  - Various Call Status Display using ICON
    - Call, SMS, Wi-Fi Antenna, PTT Call Status
  - Status Indication using LED
    - Absent Call, Emergency Call
  - Status Indication using Sound
    - PTT Call Start/Incoming Call, Wi-Fi connection and release

IP based PTT Service Features

- PTT Group List Display Function
  - PTT Member List Display
    - Overall, Personal, Group, Emergency List Display
  - Group Presence Status Display
  - PTT Group Presence Status Display (Option : Presence Server Required)
    - Automatic Presence Status Display
    - Manual Presence Status Display
- VoIP Call List Display
  - Outbound/Incoming/Absent Call List
  - VoIP Call Phone Book
  - VoIP Call List Delete and Redialing Support

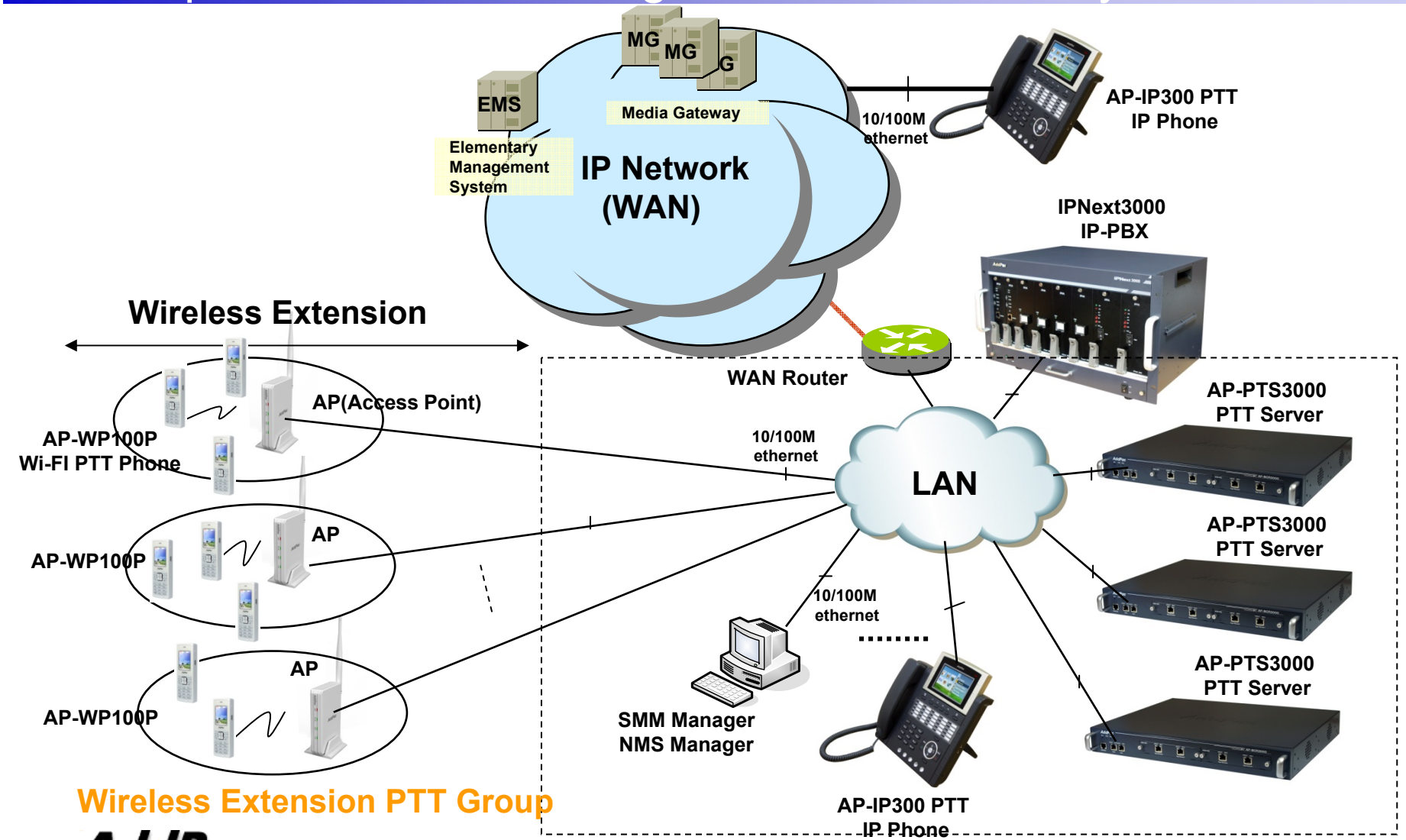
IP based PTT Network Diagram

Single PTT Server Configuration



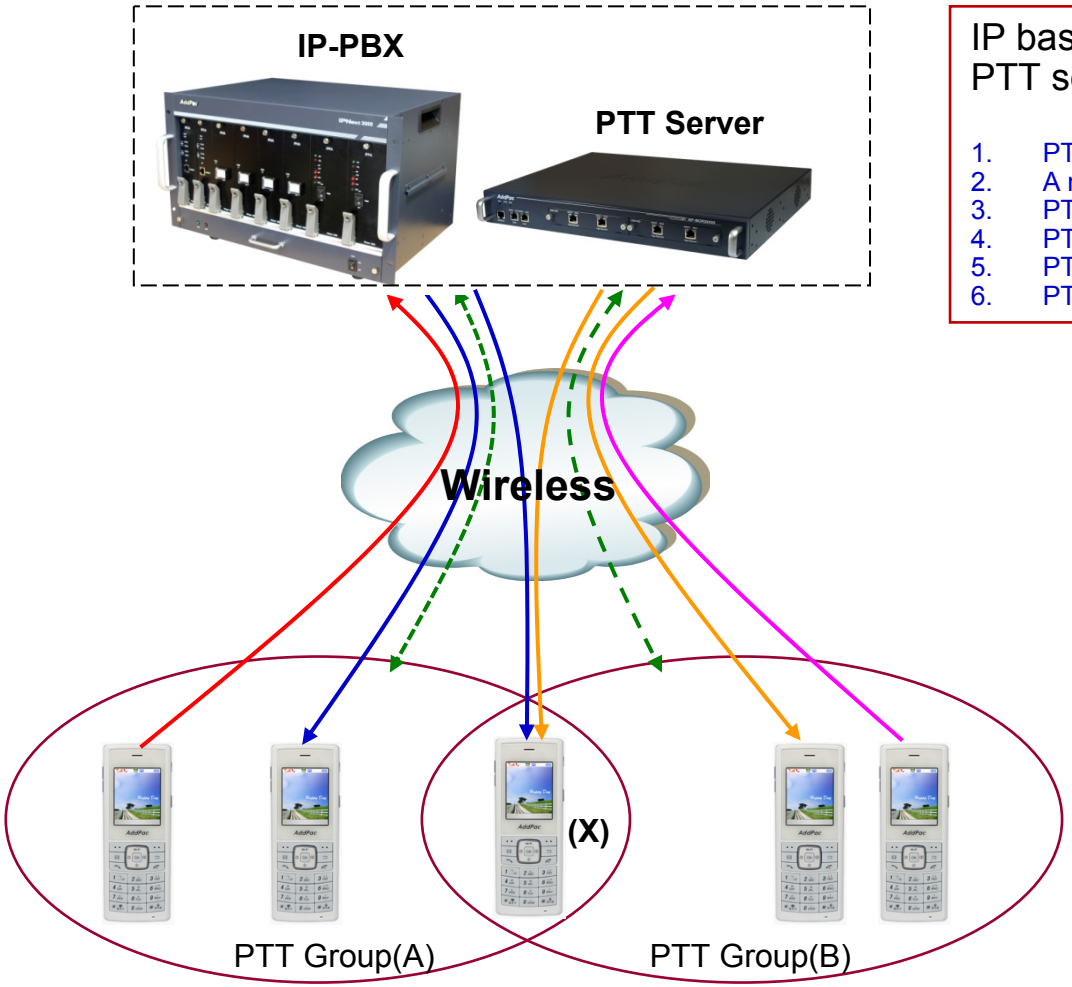
IP based PTT Network Diagram

Multiple PTT Server Configuration for Scalability &Redundancy



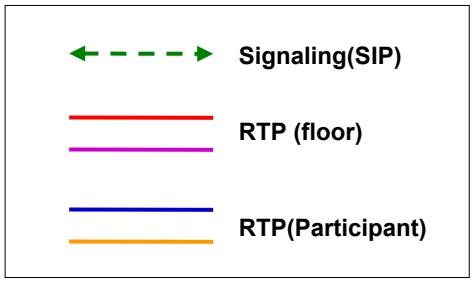
IP based PTT Call Service Examples(1/3)

Multi PTT Group Support



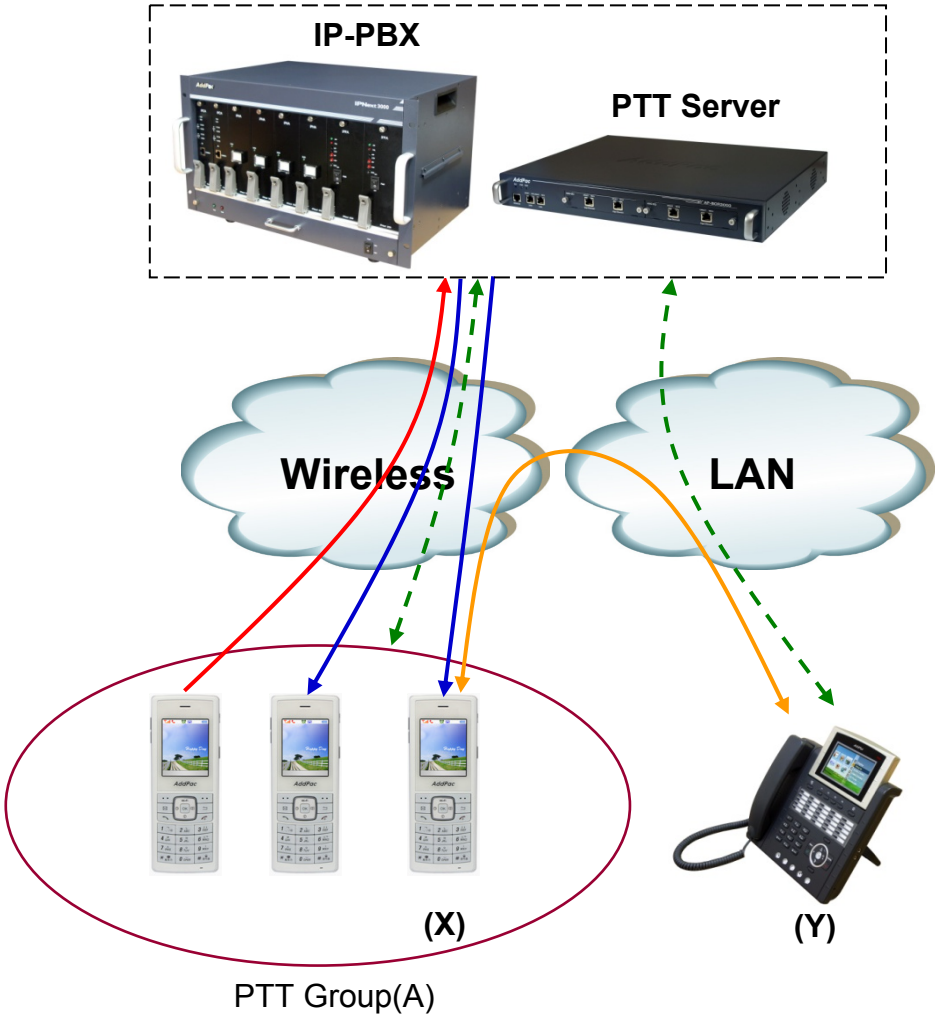
IP based WiFi PTT terminal supports two PTT sessions concurrently.

1. PTT terminal(X) is joined in PTT group(A).
2. A new PTT service is requested from PTT group (B).
3. PTT terminal(X) holds PTT group (A)
4. PTT terminal(X) joins to PTT group (B).
5. PTT terminal(X) terminates PTT group (B).
6. PTT terminal(X) resumes PTT group (A).



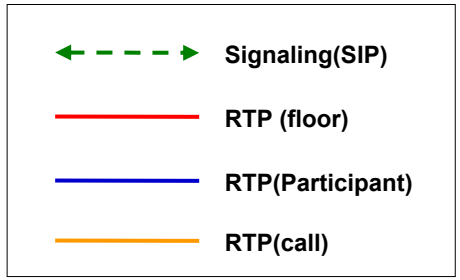
IP based PTT Call Service Examples(2/3)

Simultaneous PTT and VoIP Call



IP based WiFi PTT terminal supports PTT and VoIP call session simultaneously.

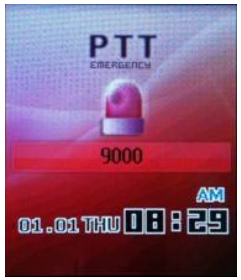
1. PTT terminal(X) is joined in PTT group (A).
2. A new generic call is requested from terminal(Y).
3. PTT terminal(X) holds PTT group(A)
4. PTT terminal(X) receives the new call.
5. PTT terminal(X) terminates the call.
6. PTT terminal(X) resumes PTT group (A).



IP based PTT Call Service Examples(3/3)

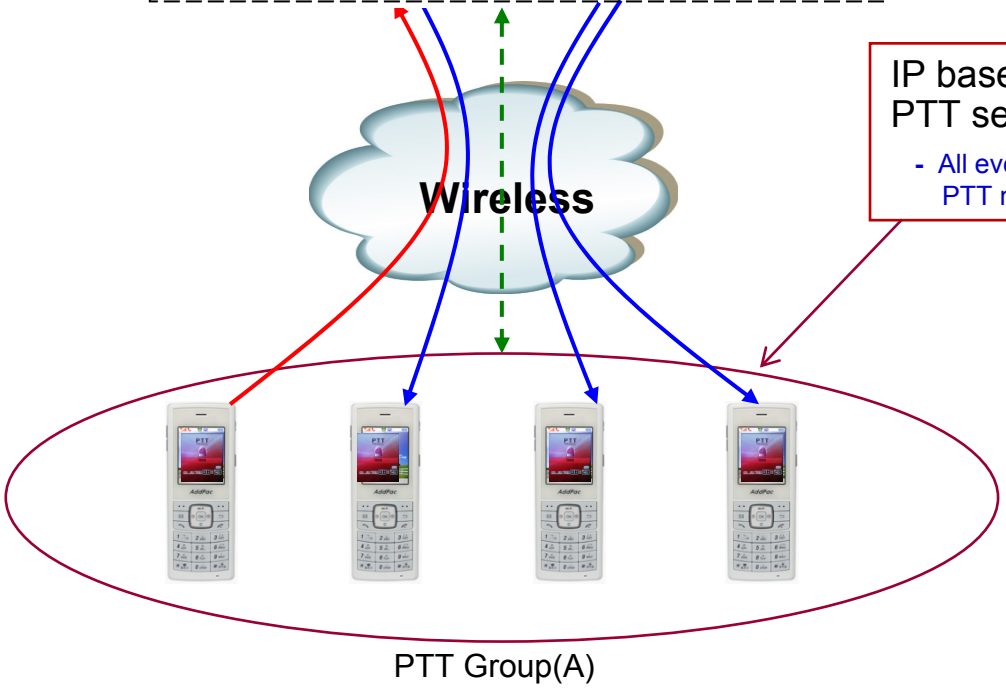
Emergency PTT

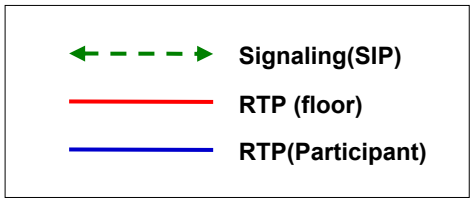




IP based WiFi PTT terminal supports emergency PTT service.

- All events (call or other PTT invitation) are ignored in emergency PTT mode.





IP based PTT Call Scenario (1/3)

Hot key usage



⇦ **PTT key**

– Move to push to talk List menu (PTT list menu)

1. **Press PTT key**

– Join

1. Move to PTT list menu
2. Select a PTT group.
3. Press Menu key and select ‘Default’ and ok key

< figure – 1>

4. So, If **press and hold PTT key**, Join to your ‘Default’ PTT group In Idle state



< figure – 1>

IP based PTT Call Scenario (2/3)

Common Usage

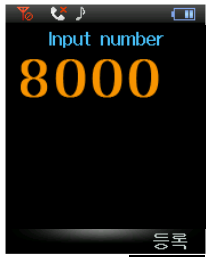
Phase	Originator	Participant
Join	1. Input Phone Number or Group Number 2. Press right side key(PTT key)	3. Notify Join w/ effect sound
Communication	Press and hold ‘PTT key’ and then speak to MIC	
Exit	Explicit exit : ‘End key’ Implicit exit : Automatic exit by server	



IP based PTT Call Scenario(3/3)

Emergency PTT with Alarm Notification

Phase	Originator	Participant
Join	1. Input Phone Number or Group Number 2. Press right function key(siren) *< figure – 1>* 4. Request emergency PTT service to server	3. Notify Alarm w/ siren sound *< figure – 2>* 5. Notify Join w/ effect sound
Communication	Press and hold 'PTT key' and then speak to MIC *< figure – 3>* *(Ignore any other PTT and call events)*	
Exit	Explicit exit : 'End key' Implicit exit : Automatic exit by server	



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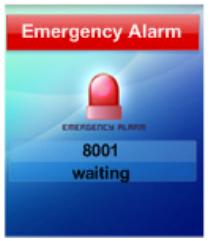

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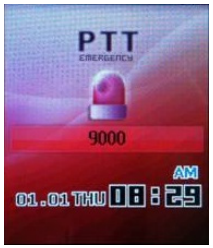

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IP based PTT Solution Components

IPNext3000 Next Generation IP-PBX



Main Features

IPNext3000 Next Generation IP-PBX

- Advanced IP-PBX Solution
- IPv4/IPv6 based Dual Network Protocol Support
- Internal/External RTP Proxy Function Support
  - External RTP Proxy Server for Private Address : AP-RS2000
- Internal/External Presence Function Support with Smart Messenger
  - External Presence Server : AP-PS2000
- Powerful Management and User Friendly Features
- Fault Tolerant and Scalability Architecture
- Firmware Upgradeable Architecture
- Dual System Redundancy Architecture
  - Two(2) 3.5 Inch Hard Disk (RAID 1) / System
  - Two(2) Gigabit Ethernet Interface / System
- Dual Redundancy Power Module
- Smart Multimedia Manager Software

Hardware Specification

IPNext3000 Next Generation IP-PBX

RISC CPU

IPNext3000 Front Side



Power On/Off Switch for System

CPU Board (Hot-Swap)

Dual Power Supply Modules (Hot-Swap)

Dual 3.5 Inch HDD Disks(RAID1) : Hot-Swap

FAN Tray for Air Cooling

Power On/Off Switch for FAN Tray

Hardware Specification

IPNext3000 Next Generation IP-PBX

RISC CPU

IPNext3000 Back Side



LAN0 for Active CPU

LAN1 for Active CPU

LAN0 for Standby CPU

LAN1 for Standby CPU

Plug for PSU Module B

Plug for PSU Module A

AP-PTS3000 PTT Server



Main Features

AP-PTS3000 PTT Server

- Two(2) Module Slots for PTT Broadcasting Service
- Two(2) Gigabit Ethernet Interface Module
- IP based PTT Service Support
- Dial-Out based PTT Service Support
  - Multi-Session , Multi-Group
  - PtMP(Point-to-Multipoint) Service
  - PtP (Point-to-Point) Service
- Meet-me based PTT Service Support(Option)
- IP-PBX Interworking Service
- IP Terminal Interworking Service (Wi-Fi Phone, IP Phones)
- Advanced Networking Protocols
- Firmware Upgradeable Architecture
- PTT Solution with Outstanding Network Service Capability

Network Service and Features

AP-PTS3000 PTT Server

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

AP-PTS3000 PTT Server

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

AP-PTS3000 PTT Server

Miscellaneous

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

Network Service and Features

AP-PTS3000 PTT Server

SNMP MIBs

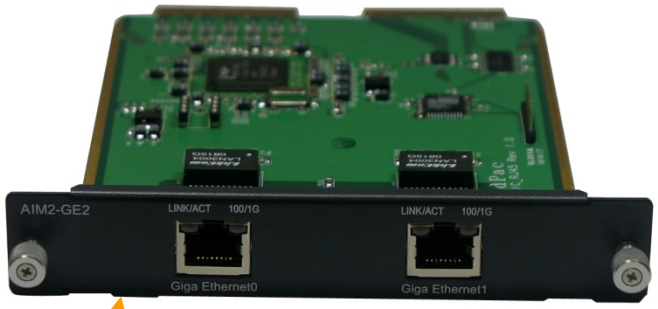
- MIB-II
- RMON MIBs (Statistsics, History, Alarm, Hosts Group)
- RFC2465 Management Information Base for IP Version 6: Textual Conventions and General Group
- RFC2466 Management Information Base for IP Version 6: ICMPv6 Group
- RFC2452 IP Version 6 Management Information Base for the Transmission Control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

Hardware Specification

AP-PTS3000 PTT Server

64bit CPU

- Network Module (AP-AIM2-GE2)
  - Two(2) Port Gigabit Ethernet Module





One(1) RS232C Port for CLI

Two(2) Fast Ethernet for management

Two(2) Gigabit Ethernet for PTT Service

AP-WP100P Wi-Fi Phone for PTT Service



Main Features

AP-WP100 Wi-Fi IP Phone

- Wi-Fi IP Phone Solution
- Various Call Scenario Support (IP-PBX)
- State-of-art SIP Signaling
- PTT Service over IP (PTT Button Support)
- IEEE802.11b/g up to 54Mbps
- WPA(Wifi Protected Access), 802.11i Security Standard
- Wi-Fi IP Audio Broadcasting Terminal Solution
- External Audio In/Out Port for Headset
- Firmware Upgradeable Architecture
- VoIP Solution with Outstanding Network Service Capability
- Audio Privacy Protection

Hardware Specification

AP-WP100 Wi-Fi IP Phone

- **Microprocessor**
  - RISC processor
- **Memory**
  - NAND FLASH : 32Mbyte
  - mSDRAM : 32MByte
- **Wireless**
  - IEEE802.11b/g Support
  - Operating Frequency : 2.4GHz
  - 802.11g: 54, 48, 36, 24, 18, 12, 9, 6Mbps, auto rate
  - 802.11b: 11, 5.5, 2, 1Mbps, auto rate
  - Operating Channels : IEEE Channels 1–14
- **Audio Interface**
  - 2 x MIC-IN, Receiver OUT, Speaker OUT , Head Phone OUT
  - Interface : I2S (Chip Set : CS42L52)
- **Display**
  - LCD : 220 X 176 260K Color 2” TFT LCD (16bit data bus)



Hardware Specification

AP-WP100 Wi-Fi IP Phone

- **IO PORT**
  - Ear-phone jack 2.5mm, 4 Contact
  - 24PIN Data Connector
    - USB Device, RS232 TTL, Battery Charge 4.2V or 5V(USB)
  - 3PIN Battery Charge Connector(4.2V)
- **Other**
  - 23 Keys (Front) + 4 Keys (Side) , 8 Back Light LEDs
  - Vibration Motor
  - Battery : 3.7V, 1330mAh Lithium Polymer Battery (Inner Pack Type)

Hardware Specification

AP-WP100 Wi-Fi IP Phone



AP-IP300 IP Phone for PTT Service



Main Features

AP-IP300 IP Phone

- 4.3 Inch Color LCD Display
- External I/O Interface
  - Audio In/Out
  - Two(2) Fast Ethernet Interface
  - PSTN FXO Interface (optional)
- PoE (Power over Ethernet) Support
- 25 Speed Dial button with Presence Indication Lamp
- Audio Broadcasting Controller & Terminal
- Providing Powerful Push-to-Talk Service
- Powerful Color GUI
- IPv4/IPv6 Address Support
- SIP, H.323 Signaling Support
- High-end Error Resilient Against Various Packet Error

Hardware Specification

AP-IP300 IP Phone

- RISC+DSP Microprocessor Computing Power
  (Dual Processor Architecture)
- High Quality 4.3 Inch Color LCD Panel
- 25 Speed Dial Key & User Presence Indication LED
- Optional PSTN Backup Interface
  - FXO Interface
- High quality Audio and Voice Interface
  - Stereo Audio Input Connector
  - Stereo Audio Output Connector
- Network Interface
  - Two(2) 10/100Mbps Fast Ethernet
- USB Host Mode Interface
  - USB Memory(Flash, HDD), etc
- Power Supply
  - Power over Ethernet
  - External Power Adaptor (5V, 3A)

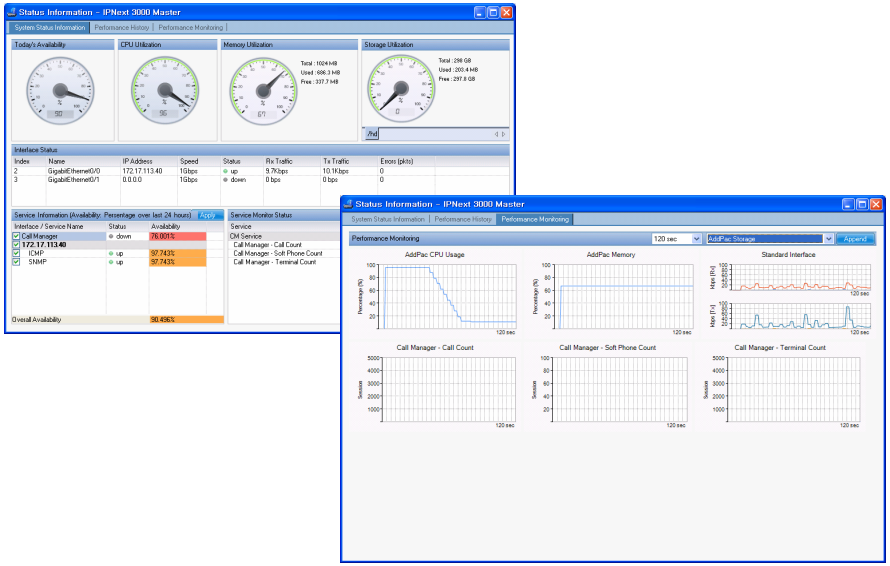


Hardware Specification

AP-IP300 IP Phone



NMS System for PTT Solution



System Requirement

Network Management System for PTT Server

NMS Server

- OS : RHEL (Redhat Enterprise Linux) 5.0 or higher
- CPU : Quad-Core 2.0 GHz / 1333MHz FSB 2x4 MB cache
- Physical Memory : 4 GB
- HDD : 300 G
- JRE (Java Runtime Environment) 1.5.1 or Higher
- Database : PostgreSQL 8.1.11

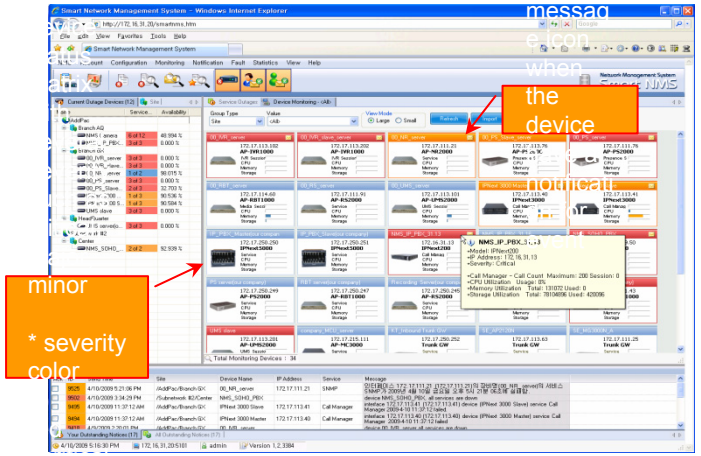
NMS Client

- Windows XP, Vista, Windows Server 2000/2003
- Microsoft Internet Explorer 6.0 or higher

Main Features

Network Management System for PTT Server

- Server & Client Architecture
- Web-based Management
- Network Resource Management
- Device Fault Management
- Device Fault History Management
- Device Status Information
- Notification Management
- Fault Statistics
- Model & Service Management



Thank you!

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