IP Telephony Solution for AIR Traffic Control Center
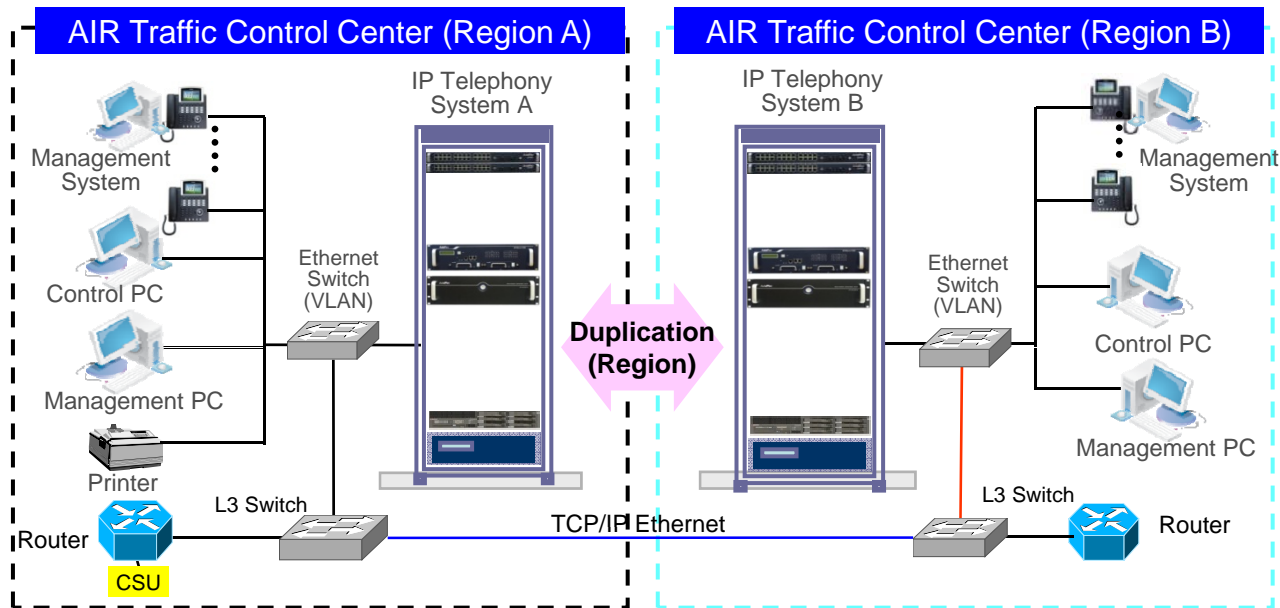

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Sales and Marketing

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Contents

- IP Telephony Network Diagram for AIR Traffic Control Center

- IP Telephony Solution Components (Example)
  - IPNext600 Call Manager
  - AP-NR1500 IP Voice Recording Server
  - AP-MC1500 Voice MCU
  - AP-IP300 IP Phone
  - AP-SAC Smart Attendant Console
  - AP-SNMS Smart IP Telephony NMS

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IP Telephony Network Diagram

AIR Traffic Control Center (Region A)

Management System

Control PC

Management PC

Printer

Router

CSU

Ethernet Switch (VLAN)

IP Telephony System A

L3 Switch

Duplication (Region)

TCP/IP Ethernet

IP Telephony System B

Ethernet Switch (VLAN)

AIR Traffic Control Center (Region B)

Management System

Control PC

Management PC

L3 Switch

Router

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IP Telephony Solution Components

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IPNext600
Call Manager

Product Overview

IPNext600 Next Generation IP-PBX System

- SIP Application Server, Proxy, Registrar and Location Server
- Multiple ITSP Trunk with SIP & H.323 Accounts Support
- Dual System Redundancy Architecture
  - Two(2) Fast Ethernet Interface / System
- High Performance RISC Architecture
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- IPv4/IPv6 Dual Stack
- RTP Proxy Function Embedded for Private IP and IPv6 Address Interworking
- User Presence Service Features for Smart Multimedia Messenger and Smart IP Phone
- IVR Scenario Editor, Voice Mail, Media Service (Coloring), Conference
- Firmware Upgradeable Architecture
- Smart Multimedia Manager for IP-PBX Management
- Smart Messenger Service (click to dial) for Unified Communication
- VPMS (VoIP Plug&Play Management System) & Smart NMS for Large Scale Deployment
- Advanced Voice QoS Mechanism
- Dual Redundancy Power Module

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Hardware Specification

IPNext600 Next Generation IP-PBX System
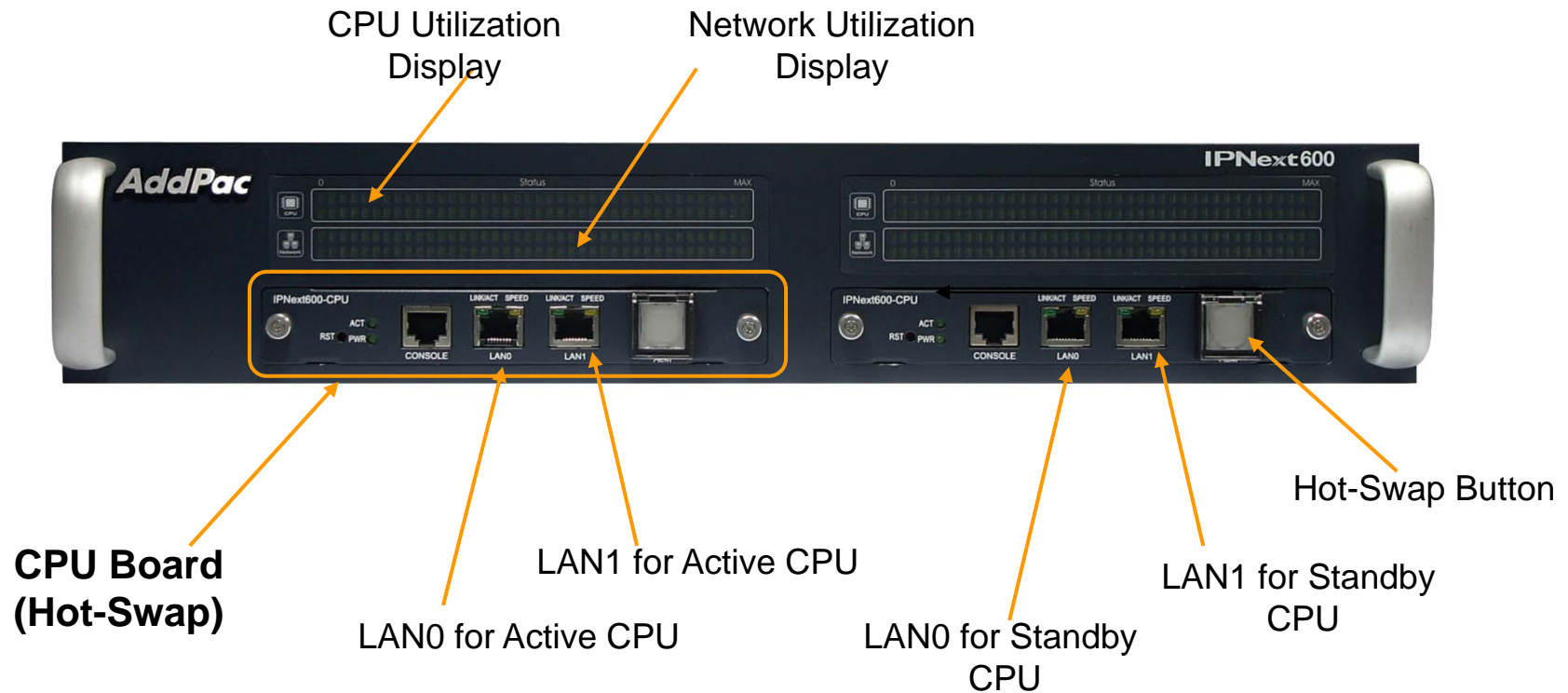
RISC CPU

- High-End Microprocessor Computing Power
- Main Chassis
  - Dual Redundancy CPU Boards for System Fault Tolerant
    - Two(2) 10/100Mbps Gigabit Ethernet
    - One(1) RS-232C Console (RJ45)
  - Dual Redundancy Power Supply Module
  - Hot-Swap Features

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Hardware Specification

IPNext600 Next Generation IP-PBX System

IPNext 600 Front Side

CPU Utilization Display

Network Utilization Display

Hot-Swap Button

CPU Board (Hot-Swap)

LAN1 for Active CPU

LAN0 for Active CPU

LAN0 for Standby CPU

LAN1 for Standby CPU

Hardware Specification

RISC CPU

IPNext 600 Back Side

Dual Power Supply Modules (Hot-Swap)

PSU Module A

PSU Module B

Power On/Off Switch for System

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System Redundancy Features

IPNext600 Next Generation IP-PBX System

IPNext600 System Block Diagram

IP Network
(WAN)

LAN0   LAN1   LAN0   LAN1

CPU Board
(ACTIVE)

Keep Alive
Channel

CPU Board
(StandBy)
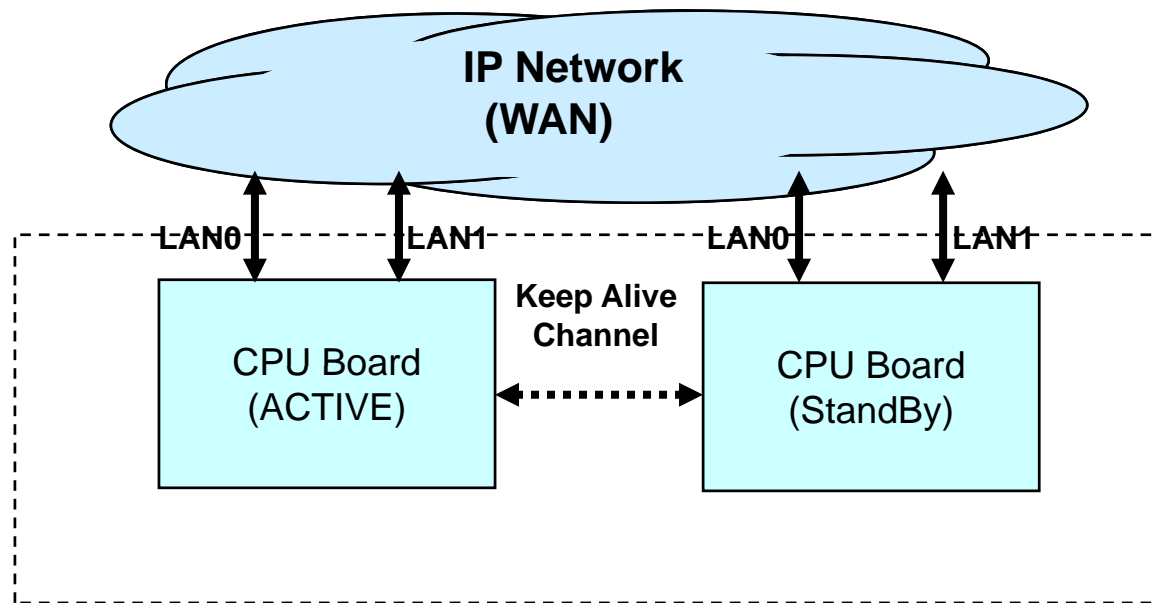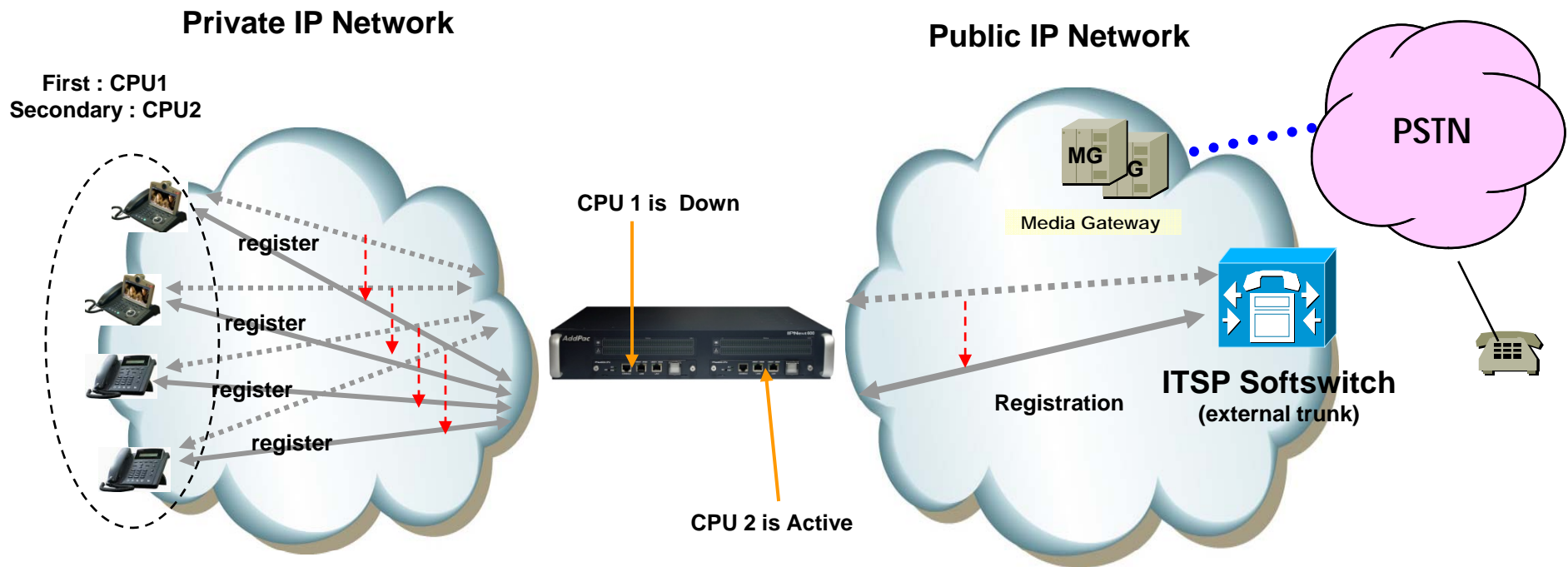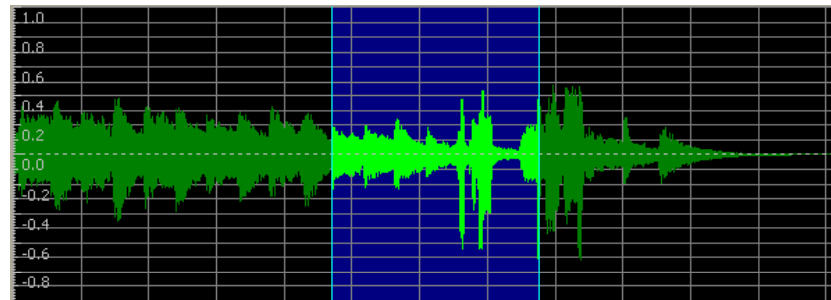
System Redundancy Features

IPNext600 Next Generation IP-PBX System

- Active– Active Duplication Scheme
- Active – Standby Duplication Scheme
- VRRP based Duplication Scheme

Private IP Network

First : CPU1
Secondary : CPU2

register
register
register
register

CPU 1 is Down

CPU 2 is Active

Public IP Network

MG G
Media Gateway

Registration

ITSP Softswitch
(external trunk)

PSTN

Active – Standby Duplication Scheme (example)

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AP-NR1500
IP Voice Recording Server

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Product Overview

- IP based Network Voice Call Recording Server
- Linux Operating System
- Powerful Management and User Friendly Features
- High-performance Voice Recording Service
- External AddPac IP Terminal (Ex: IP Phone, IP Intercom, IP Emergency Phone) Interworking Support
- Firmware Upgradeable Architecture
- One(1) 10/100/1000Mbps Gigabit Ethernet Interface
- Up to Two(2) 3.5Inch SATA Hard Disk Interface Support
- Two(2) USB Interface Support
- One(1) RS232C Console Interface

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Hardware Specification

- High Performance Computing Power

- Network Interface

  - One(1) 10/100/1000Mbps Gigabit Ethernet Port

- Two(2) USB 2.0 Interfaces for Mouse, Secondary Storage, etc

- One(1) RS232C Console Interface (RJ45)

- Up Two(2) SATA type Hard Disk (4~8 Tera HDD Capacity)

- Power On/Off Soft Switch with LED Indication Lamp (Front Side)

Hardware Specification

AP-NR1500 IP Voice Call Recording Server
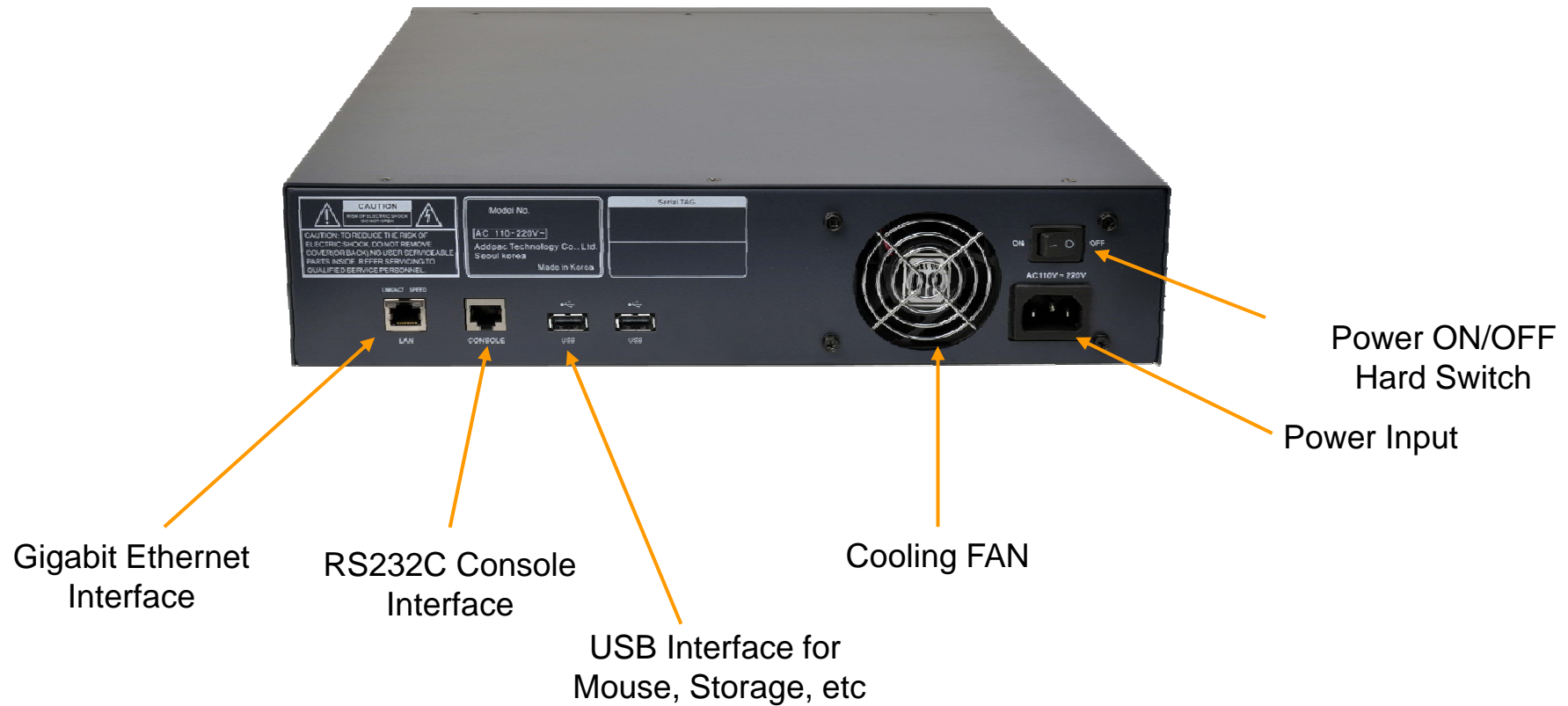
AP-NR1500 Front Side

Power On/Off Switch with LED Indication LAMP

Hardware Specification
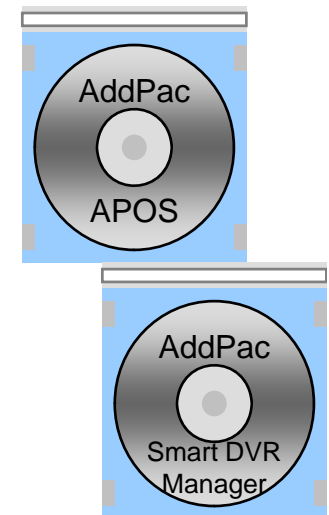
AP-NR1500 IP Voice Call Recording Server

AP-NR1500 Back Side

Power ON/OFF
Hard Switch

Power Input

Gigabit Ethernet
Interface

RS232C Console
Interface

Cooling FAN

USB Interface for
Mouse, Storage, etc

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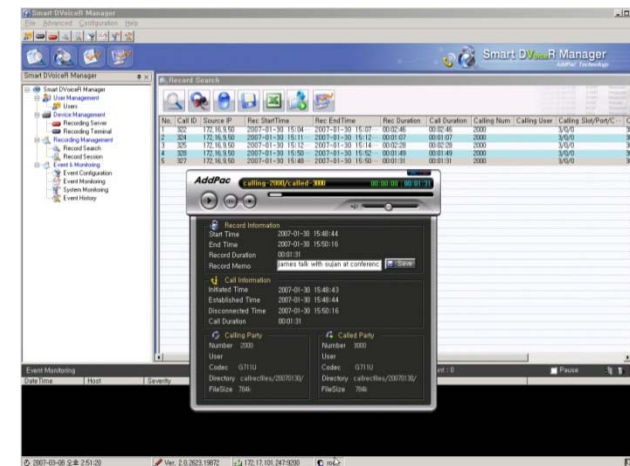
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Software Service

- Built-in AddPac Internetworking Software
  - Scalability, Functionality, and Stability Features
  - Advanced Network $DV_{oice}R$ Recording & Live Streaming Features
  - QoS Control Features
- Firmware Upgradeable Architecture
- Industry Standard Network Protocol Features
- Highly User Friendly Management Features
  - PC based Window Program
  - Smart $DV_{oice}R$ Manager

AddPac
APOS

AddPac
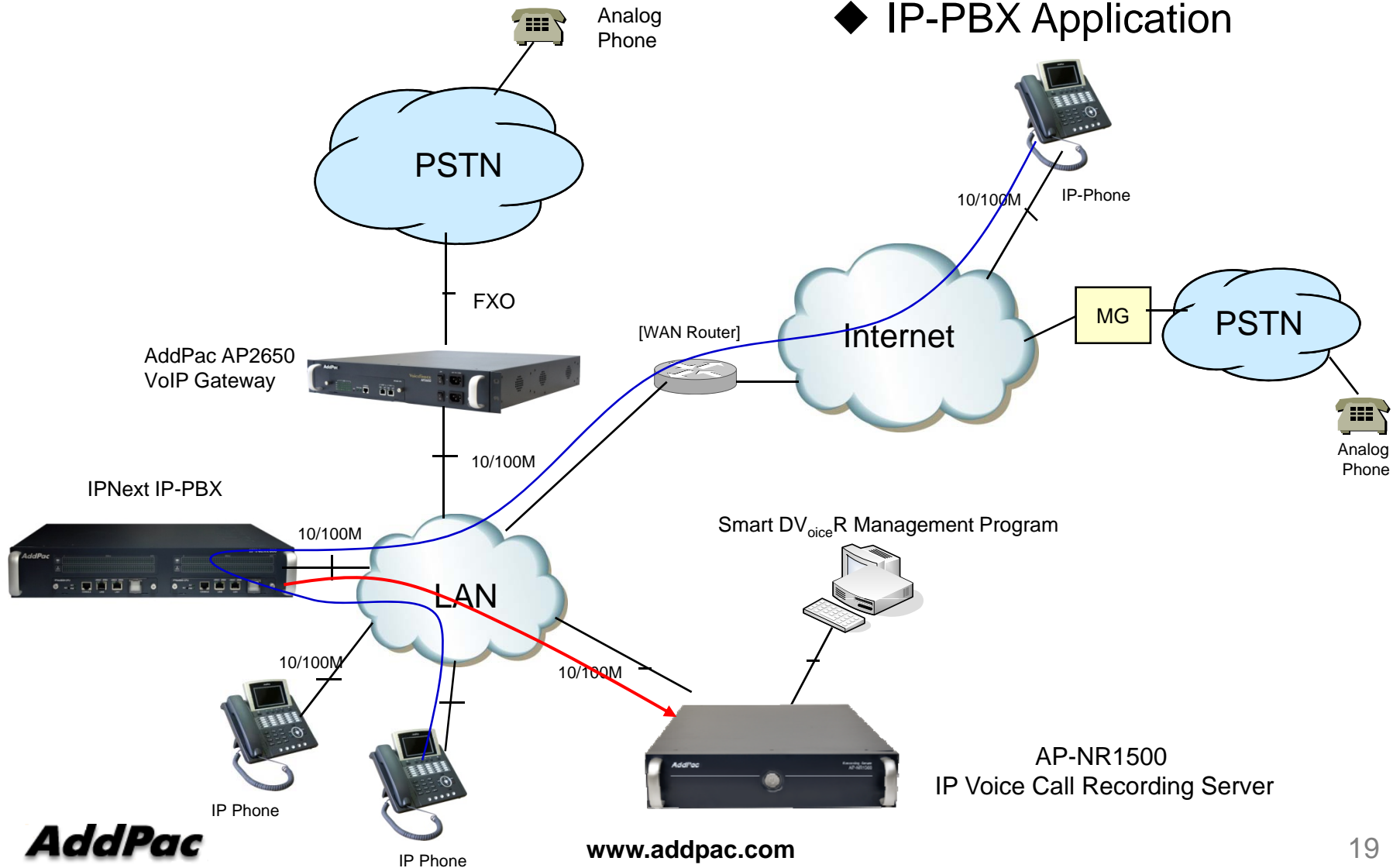Smart DVR Manager

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Smart DV$_{oice}$R Management Program

- Call History Management (search/modify/delete/save)
- Media Play Management (Play/Stop/Seek/Pause)
- Live Call List Management, Live Call Monitoring
- Local Backup (File Manager Support, PC HDD, DVD) and Local Play
- User Management (registration/modify/delete/search)
- Server Status (CPU/Memory/HDD) & Event Monitoring
- Waveform Analyzing Function
- Recording Source Management (VoIP Gateway, IP Phone, etc)
- Live Recording Board

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Voice Recording App.for All IP Environment

Analog Phone

◆ **IP-PBX Application**

PSTN

10/100M   IP-Phone

FXO

[WAN Router]   Internet   MG   PSTN

AddPac AP2650
VoIP Gateway

Analog Phone

10/100M

IPNext IP-PBX

10/100M

Smart DV$_{oice}$R Management Program

LAN

10/100M

10/100M

AP-NR1500
IP Voice Call Recording Server

IP Phone

IP Phone

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AP-MC1500
Audio MCU

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Main Features

AP-MC1500 Voice MCU

- IP based Hardware Audio Mixing Solution
- Two(2) DSP Module Slots for Audio Mixing
- 64Ch, 128ch Audio Mixing DSP Modules
- Compact PCI Style Hot-Swap Support
- Support Various Conference System Model
- Scalability and Flexibility
- High-performance Voice Mixing Service
- SIP and H.323 VoIP Signaling Support
- Various Voice Codec Support (G.711,G.729, G.723, etc)
- Two(2) 10/100Mbps Fast Ethernet Interface
- Firmware Upgradeable Architecture
- Audio Solution with Outstanding Network Service Capability

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Hardware Specification
AP-MC1500 Audio MCU

PowerPC
CPU

High-end
DSP

- High Performance RISC Microprocessor Computing Power

- Built-in High-end Programmable DSP Hardware Architecture

- Main Chassis

  - Network Interface

    - Two(2) 10/100Mbps Fast Ethernet
    - One(1) RS-232C Console (RJ45)

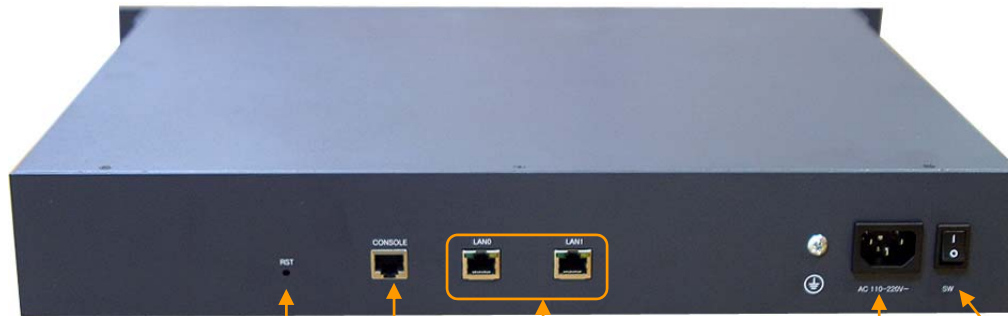**AddPac**

Hardware Specification
AP-MC1500 Audio MCU

DSP Module   Hot-Swap Ejector

Reset   Console Port   Two(2) LAN Port   Power Inlet   Power Switch

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Hardware Specification

AP-MC1500 Audio MCU

- MCU Module (HIM-AMCU128)
  - High quality Audio Mixing
  - 128Channel Audio Mixing
  - Compact PCI Style Hot-Swap Function
  - High-End Programmable DSPs
  - Parallel DSP Processing for High Quality Audio Mixing
  - Concurrent Different Audio Codec Support

- MCU Module (HIM-AMCU64)
  - High quality Audio Mixing
  - 64 Channel Audio Mixing
  - Compact PCI Style Hot-Swap Function
  - High-End Programmable DSPs
  - Parallel DSP Processing for High Quality Audio Mixing
  - Concurrent Different Audio Codec Support
  - Cascade Support

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AP-IP300 IP Phone

Main Features

- 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)

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Hardware Specification

AP-IP300 IP Phone

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IP Extend Key Pack Comparison Table

Model / Service Features	AP-PT100	AP-PT50	AP-PT20
Key Type	7 inch LCD Touch Screen	Push Button with User Presence Indication LAMP	Push Button with User Presence Indication LAMP
Key Number	Default : 9(row) x 4(column) = 36	60 Key	40 Key
User Presence Indication	Support	LED on, LED off, LED Blink	LED on, LED off, LED Blink
Multiple Cascading	Support	Support	Support
Speaker	Support	Support	Support
LAN Port	2	2	2
PoE(Option)	Support	Support	Support
Application	IP Phone or Video Phone Extend Key Pack	IP Phone or Video Phone Extend Key Pack	IP Phone or Video Phone Extend Key Pack

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Main Features

- Speed Dialing Terminal with User Presence Indication LAMP

- 60 (3 Column x 20 Row) Speed-Dial Key Buttons

- Inter-working with IP Terminal, Presence Server, Call Manager

- Multiple Terminal Cascading Feature

- User Presence Indication LED (on, off, blink)

- User Presence Group Feature

- Firmware Upgradeable Architecture

- PoE (Power over Ethernet) Function

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Hardware Specification

RISC
CPU

- RISC+DSP Microprocessor Computing Power

- 60 Speed Dial Key with User Presence LAMP

- Optional PoE (Power over Ethernet) Interface

- Network Interface

  – Two(2) 10/100Mbps Fast Ethernet

- Power Supply

  – Power over Ethernet (Option)

  – External Power Adaptor (5V, 2A)
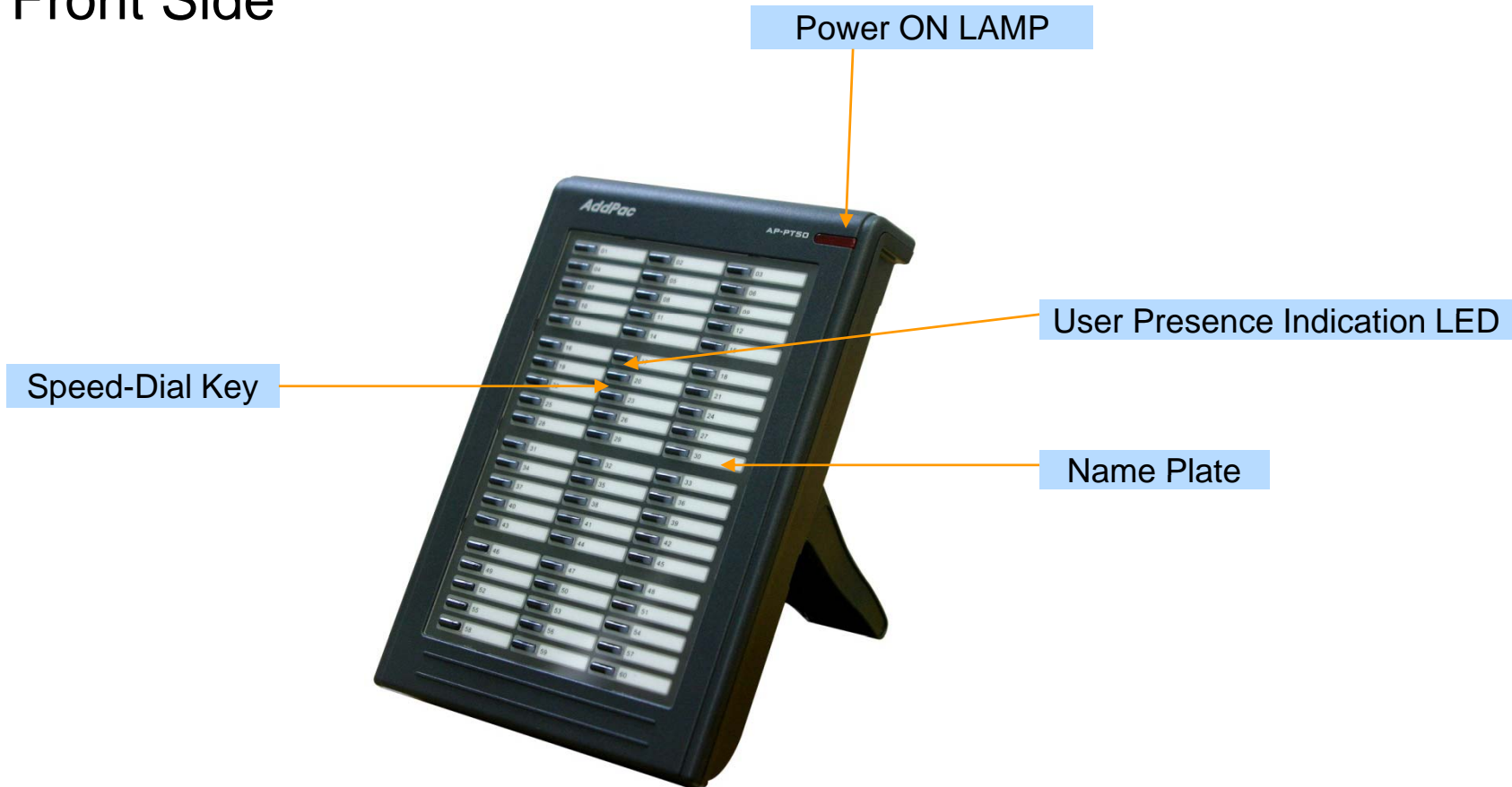
  – Power Switch

- Connector for Cascading

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Hardware Specification

RISC
CPU

Front Side

Power ON LAMP

User Presence Indication LED

Speed-Dial Key

Name Plate

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Hardware Specification

AP-PT50 IP Extend Key Pack

RISC
CPU

Back Side

USB Port

Speaker

Power Switch

External Power Adaptor

LAN0

LAN1

RS232C
Console Port
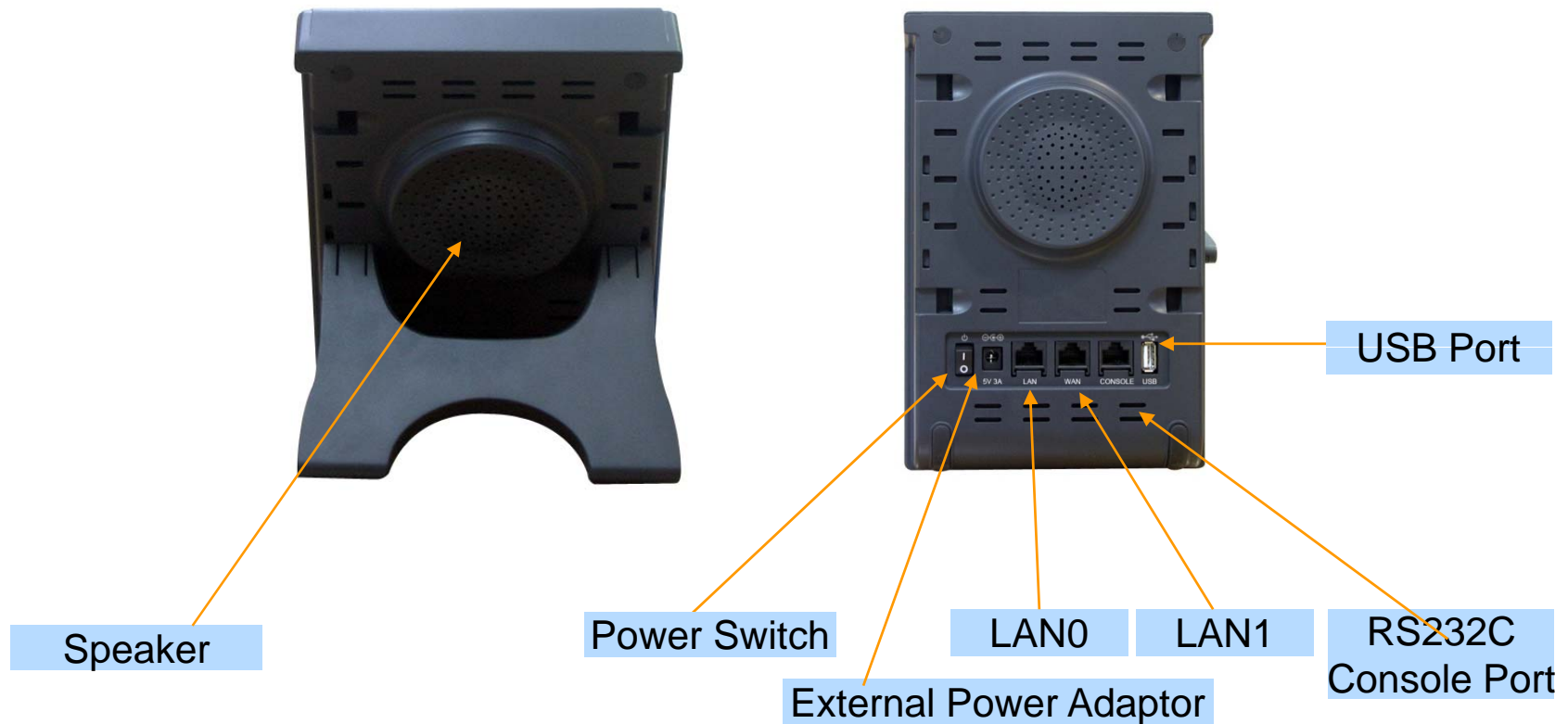
AP-SAC Smart Attendant Console
(Touch Screen Version)

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Contents

- Overview
- Touch Screen based Attendant Console System Diagram
- Touch Screen based Attendant Console Feature
- Touch Screen based Attendant Console UI
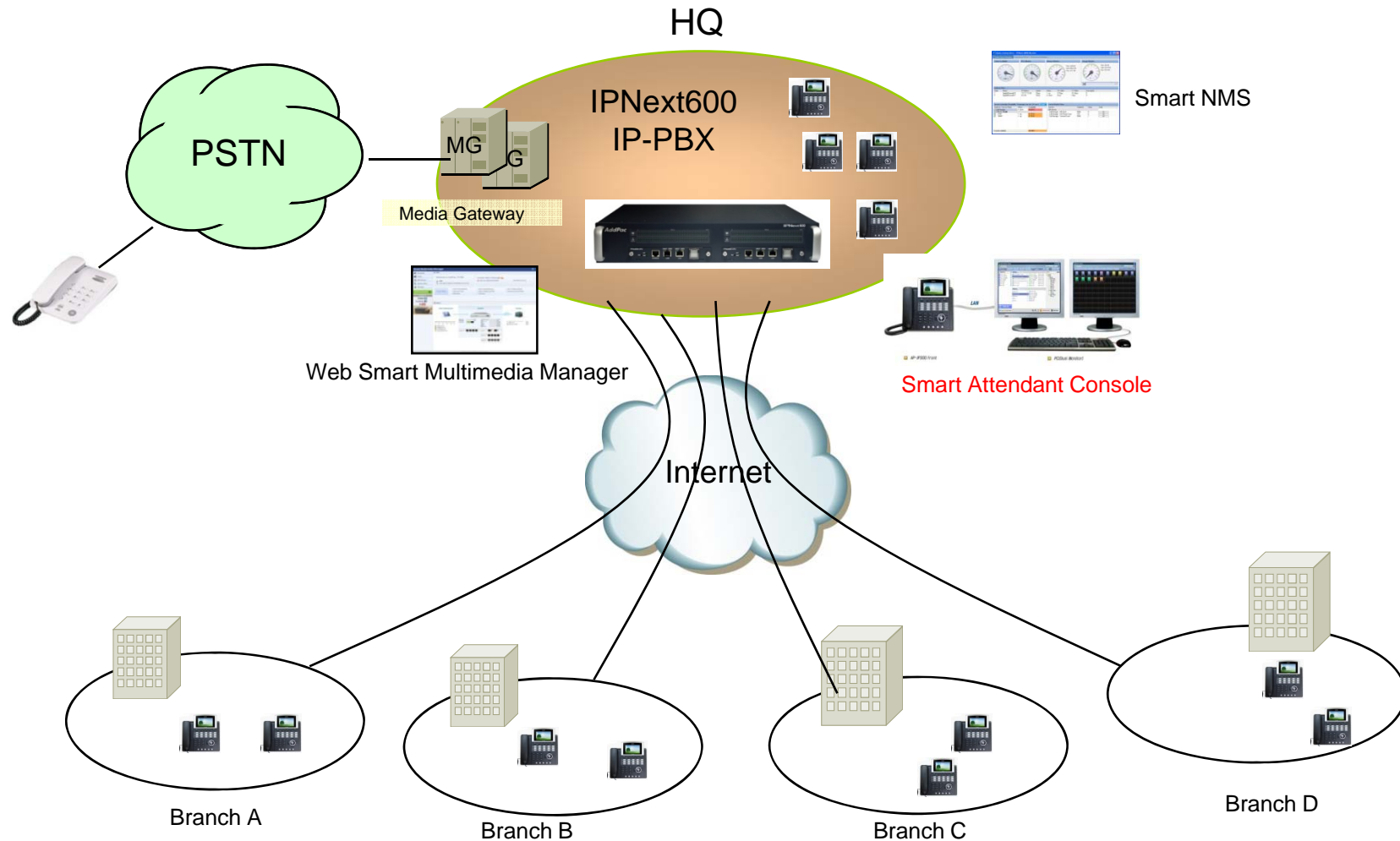 - Login Feature
  - Main Screen Feature

Overview

Support Efficiently Call Routing and Smart Presence
Service

- Touch Screen based Attendant Console Function
  - Support Call Routing Service
  - Support User Presence Information
  - Support Phone Number Presence Information
  - Support Attendant Phone Call Control
  - Support Call Status Display
  - Support Group Call(Conference)
  - Support Various Monitoring Group

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Touch Screen based Attendant Console System Diagram

HQ

PSTN

MG
G

Media Gateway

IPNext600
IP-PBX

Smart NMS

Web Smart Multimedia Manager

Smart Attendant Console

Internet

Branch A

Branch B

Branch C

Branch D

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Touch Screen based Attendant Console Feature

- **User Login Service**
  - User Login and Logout Feature

- **Monitoring and Group Management Service**
  - Support Various Group
    - Attendant and Direct Phone Group
    - Office Phone Group
    - Conference Call Group
  - Support Group Management Feature
    - Add Group, Rename Group, Delete Group
    - Add User, Delete User
   - Add Conference Room, Delete Conference Room

Touch Screen based Attendant Console Feature

- **Monitoring and Group Management Service**
  - Presence Feature
    - Phone Presence Status
      - Online, Working, Away, Absence
      - Be In Conference, Call Busy
    - User Presence Status
      - PC Online, Phone Online, PC-Phone Online
      - Working, Away, Absence
      - Be In Conference, Call Busy
    - Display Call Status
      - Display Call Status Icon for Talking Time
  - Call Control Feature
    - Interoperate with Monitoring Phone Information
    - Manual Call Dial
    - Drag and Drop Call Transfer and Manual Call Transfer

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# Touch Screen based Attendant Console Feature

- **Attendant Phone Call Control Service**
  - Display Phone Call Status
    - Display Call Status Icon for Call Stat
    - Display Talking Call Status Icon for Talking Time
    - Support Multi-Call
  - Phone Call Control Feature
    - Dial to Monitoring Phone and Conference
    - Incoming Call Answer
    - Active Call Hold and UnHold
    - Call Transfer
    - Call Disconnect
    - Interoperate with Monitoring Phone Information
      - Drag and Drop Call Transfer and Manual Call Transfer

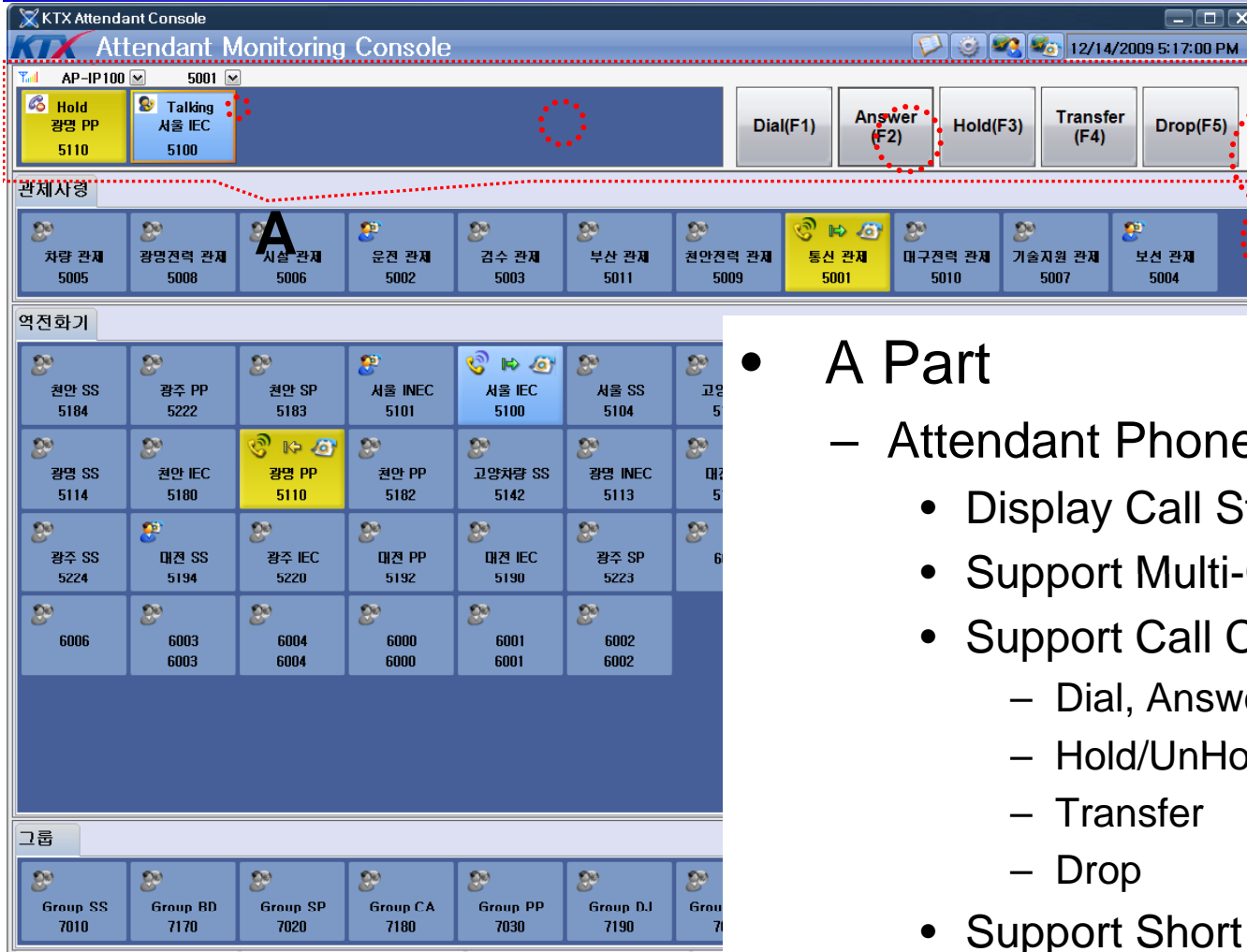# Touch Screen based Attendant Console User Login

[Figure 1]

A B C

[Figure 2]

E

[Figure 3]

D
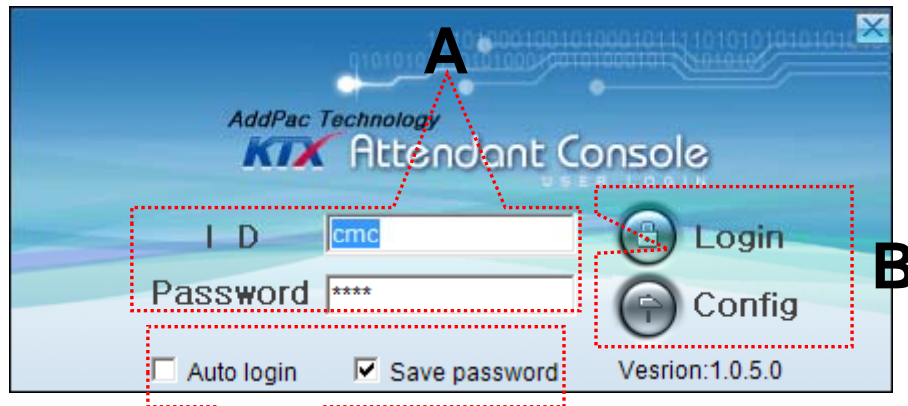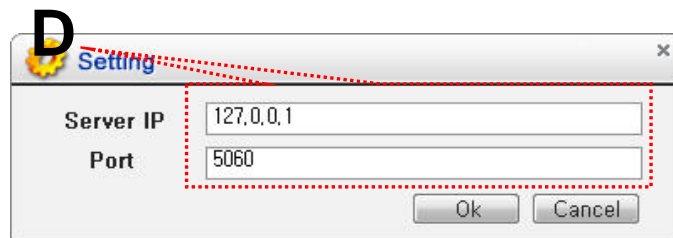
- Attendant Console Login
  - [Figure 1] shows the login picture of KTX Attendant Console program. "E" of [Figure3] is Icon of KTX Attendant Console Program.

  - When program is started initially, user should set the network configuration parameter such as IP address, Port number of Presence Server.[Figure2]

  - After inputting ID and Password, press the login button

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Touch Screen based Attendant Console Main Screen –Call Control

- **A Part**
  - Attendant Phone Call Control Part
    - Display Call Status
    - Support Multi-Call Display
    - Support Call Control Feature
      - Dial, Answer
      - Hold/UnHold
      - Transfer
      - Drop
    - Support Short Key Call Control

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Touch Screen based Attendant Console Main Screen –Monitoring


- **B Part**
  - Monitoring Group Part
    - Support Various Group
      - Attendant and Direct Phone Group
      - Office Phone Group
    - Support Group Management Feature
      - Add Group, Rename Group, Delete Group
      - Add User, Delete User
      - Provide Various User Presence Status
        » PC Online, PC-Phone Online, Phone Online
        » Offline, Away, Absence
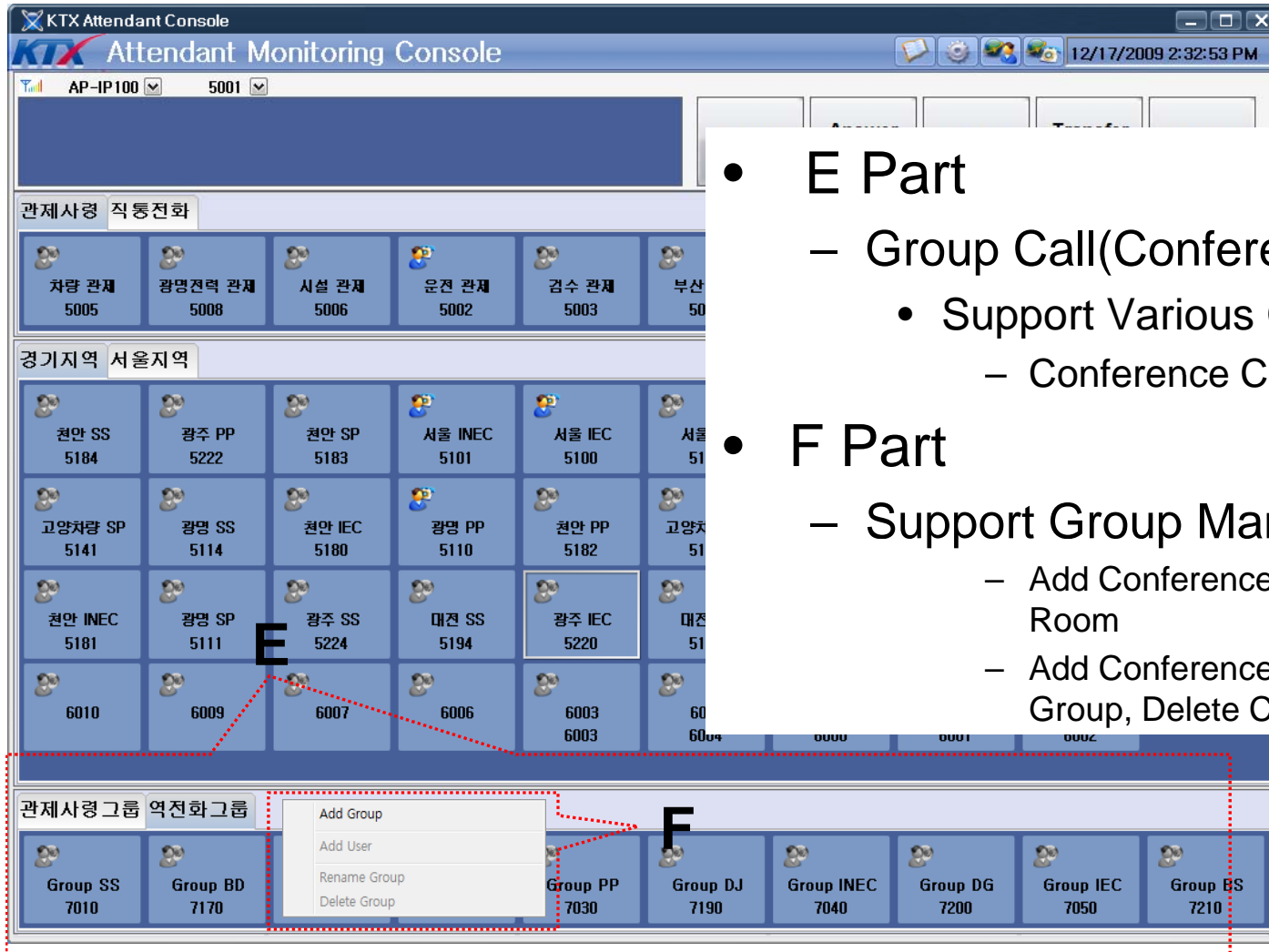   » Be in Conference, Call Busy
  - Display Call Status

Touch Screen based Attendant Console Main Screen –Monitoring Group
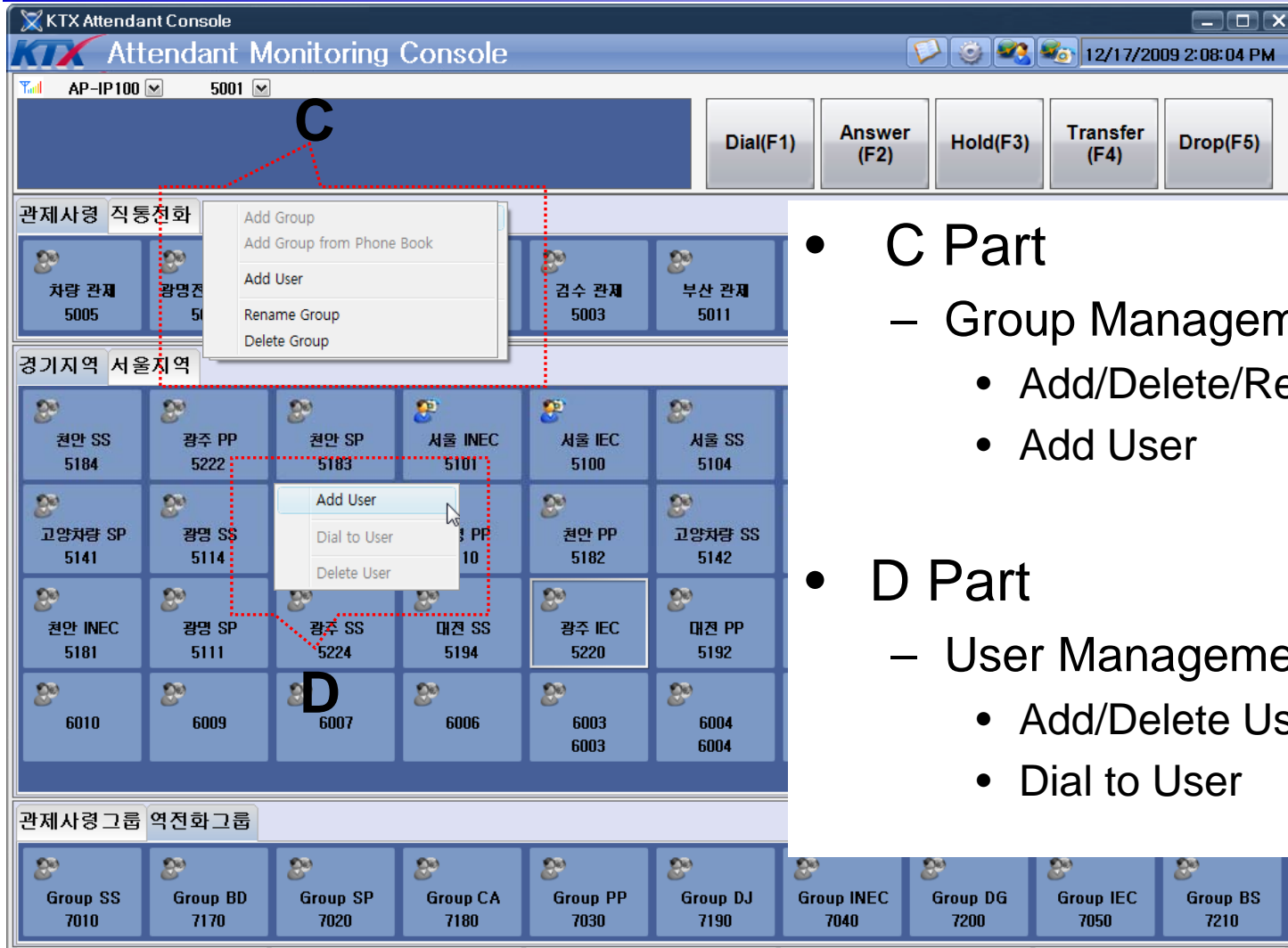
- **C Part**
  - Group Management Feature
    - Add/Delete/Rename Group
    - Add User

- **D Part**
  - User Management Feature
    - Add/Delete User
    - Dial to User

Touch Screen based Attendant Console
Main Screen – Group Call

- **E Part**
  - Group Call(Conference) Part
    - Support Various Group
      - Conference Call Group
- **F Part**
  - Support Group Management Feature
    - Add Conference Room, Delete Conference Room
    - Add Conference Group, Rename Conference Group, Delete Conference Group

Smart NMS

Smart Network Management System

Main Features

- 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!

AddPac Technology Co., Ltd.
Sales and Marketing

Phone +82.2.568.3848 (KOREA)
FAX +82.2.568.3847 (KOREA)
E-mail sales@addpac.com

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