# AP-ABS5000

## IP High Quality Audio Broadcasting Server

High Performance IP based Multichannel IP High Quality Audio Broadcasting Server

**AddPac Technology**

2010, Sales and Marketing

www.addpac.com

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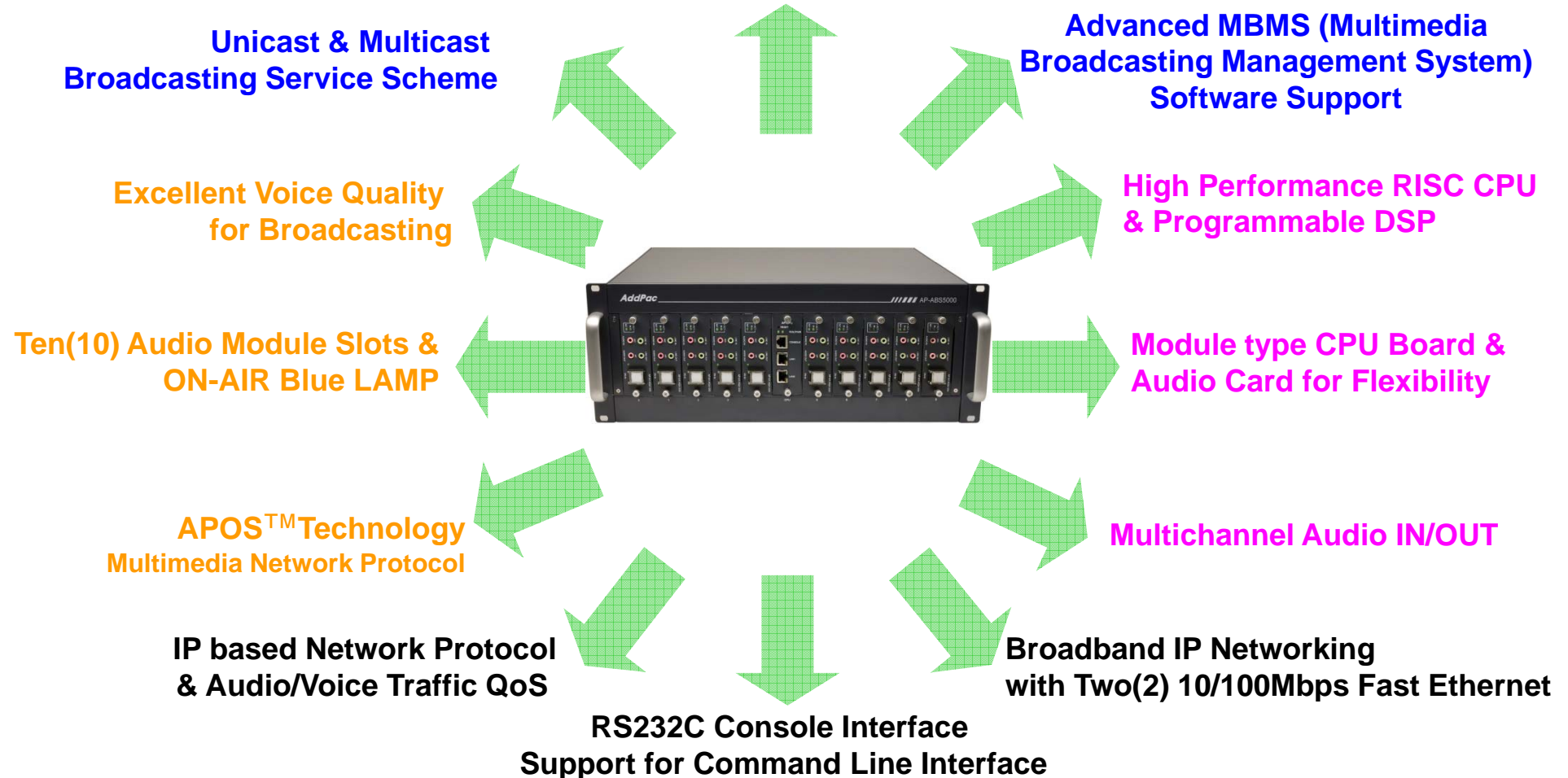- Ordering Information

# Product Overview

- IP based Audio Broadcasting Solution
- Hardware Architecture for Multichannel Audio Broadcasting Service
- Ten(10) Module Slots for Multichannel Audio Encoding Service
- High Quality Audio Codec Support
- Unicast and Multicast Broadcasting Scheme
- Enhanced MBMS (Multimedia Broadcasting Management System) Support
- Multichannel Audio IN/OUT Port
- High-Quality Audio/Voice Service
- Firmware Upgradeable Architecture
- Broadcasting Solution with Outstanding Network Service Capability
- Module based Power Supply
- Dual Power Supply for Power Duplication

# Product Highlights

## AP-ABS5000 IP High Quality Audio Broadcasting Server

**Multichannel IP Broadcasting Server**

**Unicast & Multicast Broadcasting Service Scheme**

**Advanced MBMS (Multimedia Broadcasting Management System) Software Support**

**Excellent Voice Quality for Broadcasting**

**High Performance RISC CPU & Programmable DSP**

**Ten(10) Audio Module Slots & ON-AIR Blue LAMP**

**Module type CPU Board & Audio Card for Flexibility**

**APOS™Technology Multimedia Network Protocol**

**Multichannel Audio IN/OUT**

**IP based Network Protocol & Audio/Voice Traffic QoS**

**Broadband IP Networking with Two(2) 10/100Mbps Fast Ethernet**

**RS232C Console Interface Support for Command Line Interface**

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# Hardware Specification

**RISC
CPU**

**High-end
DSP**

- RISC Microprocessor Computing Power

- High-end Programmable DSP Hardware Architecture

- Ten(10) Module Slots for Audio Broadcasting Codec Module

- Module Type Dual Power Supply

- High quality Audio and Voice Interface

  - Stereo Audio Input Connector

  - Stereo Audio Output Connector

- Network Interface

  - Two(2) 10/100Mbps Fast Ethernet (RJ45)
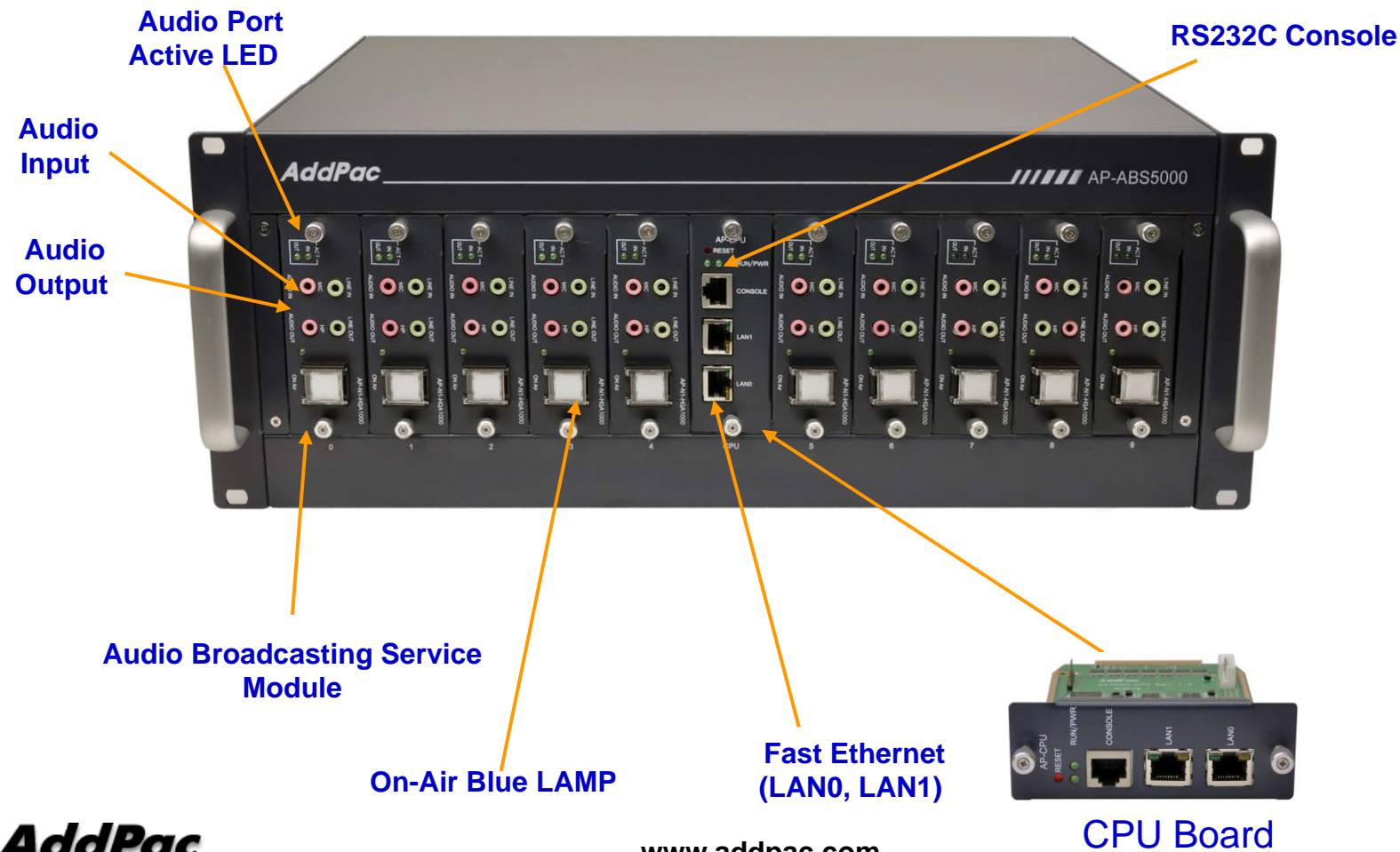
  - One(1) RS-232C Interface (RJ45) for Command Line Interface

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# Hardware Specification

## AP-ABS5000 IP High Quality Audio Broadcasting Server

**RISC CPU**

**High-end DSP**

## AP-ABS5000 Front Side

**Audio Port Active LED**

**Audio Input**

**Audio Output**

**RS232C Console**

AddPac    AP-ABS5000

**Audio Broadcasting Service Module**

**On-Air Blue LAMP**

**Fast Ethernet (LAN0, LAN1)**

**CPU Board**

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AP-ABS5000 IP High Quality Audio Broadcasting Server

**RISC CPU**

**High-end DSP**

## AP-CPU Board

## AP-N1-HQA1000 Board



**RS232C Console**

**Fast Ethernet (LAN0, LAN1)**

**Audio IN (MIC, Line IN)**

**ON-AIR Blue LAMP**

**Audio OUT (HP, Line OUT)**

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# Hardware Specification

## AP-ABS5000 IP High Quality Audio Broadcasting Server

**RISC CPU**

**High-end DSP**

## AP-ABS5000 Back Side



**Power ON/OFF Switch**

**Power Input**

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# Hardware Specification

AP-ABS5000 IP High Quality Audio Broadcasting Server

**RISC CPU**

**High-end DSP**

## AP-ABS5000 Audio Modules

| Audio Module Type (AP-N1-HQA1000) | Audio Module Features | Maximum Audio Channel in AP-ABS5000 |
|---|---|---|
|  | 1-Channel Audio In/Out Port | Up to 10 channel = 10 Module x 1 Channel |
| | Audio IN : MIC, Line IN Audio OUT : Headphone, Line OUT 3.5mm Stereo JACK | |
| | High Quality Audio Codec | |

# AP-HQA Module

## AP-ABS5000 IP High Quality Audio Broadcasting Server
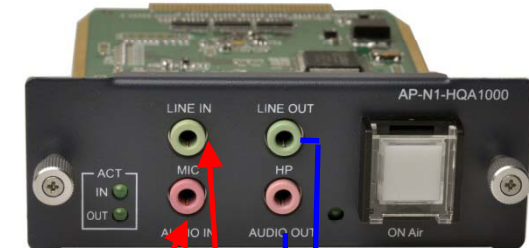
**Connect with 1:2 Stereo Jack**

**Direct MIC**

**Connect with 2:1 Stereo Jack**

- High Quality codec realizes high quality audio service
- Direct MIC-In/ Headphone In Port for monitoring
- Real time High Quality Audio Band Broadcasting

Headphone

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# APOS™ Service Features

## AP-ABS5000 IP High Quality Audio Broadcasting Server

- **APOS Internetworking Software**
  - **AddPac Operating System (APOS)**
  - **Support Industry Standard**
  - **Integrated Networking Protocols**
  - **Optimized Performance & Functionality**
  - **Easy to use, Installation, and Maintenance**

MBMS
(GUI based Manager)

VoIP

IP Routing

IP Network
(WAN)

Remote Access Broadcasting

PPPoE

Web based Management

IP Sharing    FTP/TFTP

VLAN Routing

AP-ABS5000

Data

NAT/PAT

Cisco Style CLI

SNMP

Telnet

Audio Broadcasting

Audio Codec

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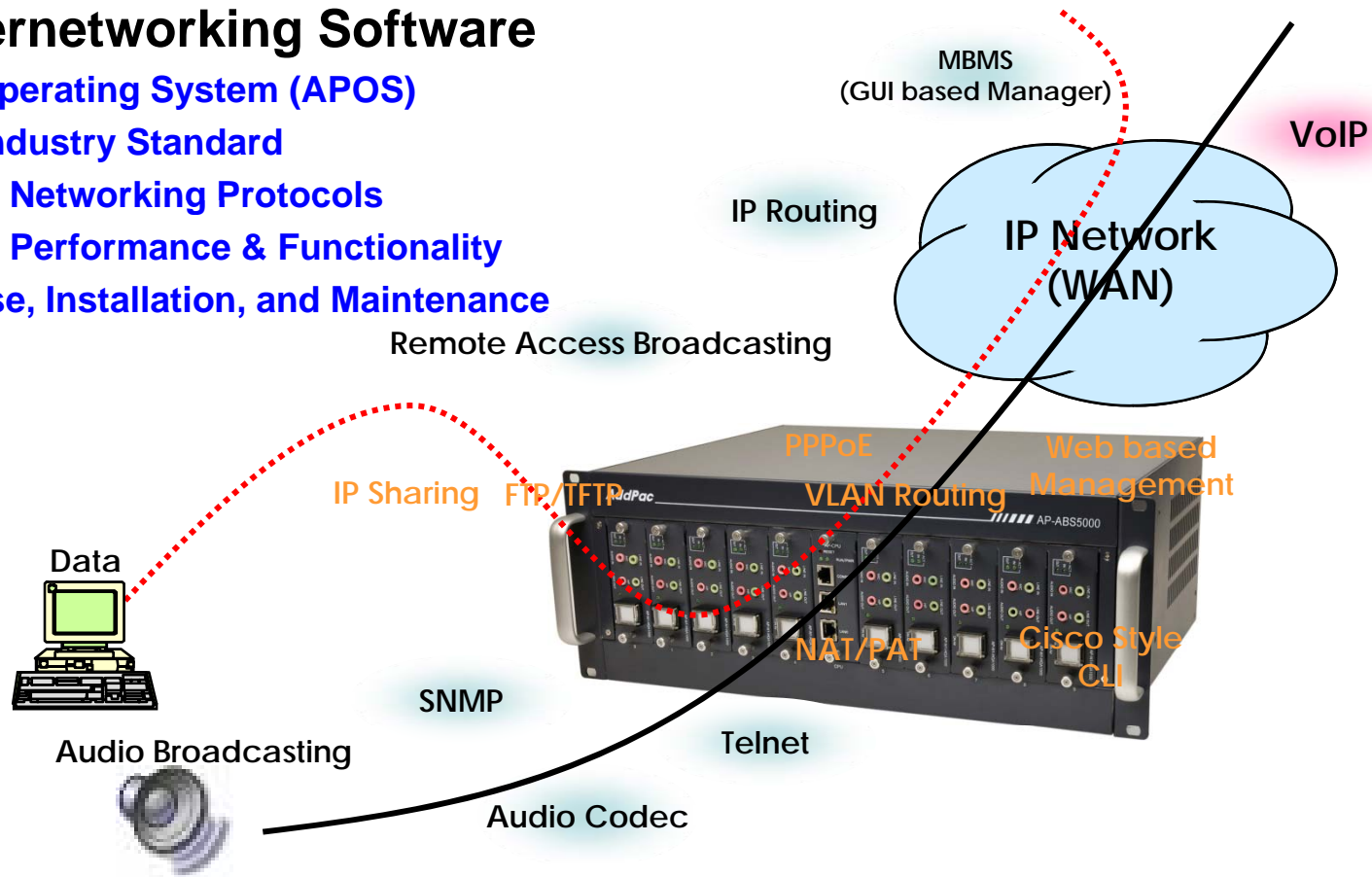
# APOS™ Service Features

## AP-ABS5000 IP High Quality Audio Broadcasting Server

- **IP Routing Protocols**
    - **Multi-protocol Internetworking Services**
    - **Static & Default IP routing**
    - **RIP v1/v2 (opt.)**
    - **OSPF v2 routing protocols support (opt.)**
    - **Transparent Bridging (IEEE Spanning Tree Protocol)**

- **WAN Protocols**
    - **Point-to-Point Protocol (PPPoE for ADSL)**
    - **IEEE 802.3 Ethernet**
    - **PPTP support for secure communication**

IP

IP

IP Network
(WAN)

Internet
WWW

IP

IP

AP-ABS5000

LAN

IP

IP

IP

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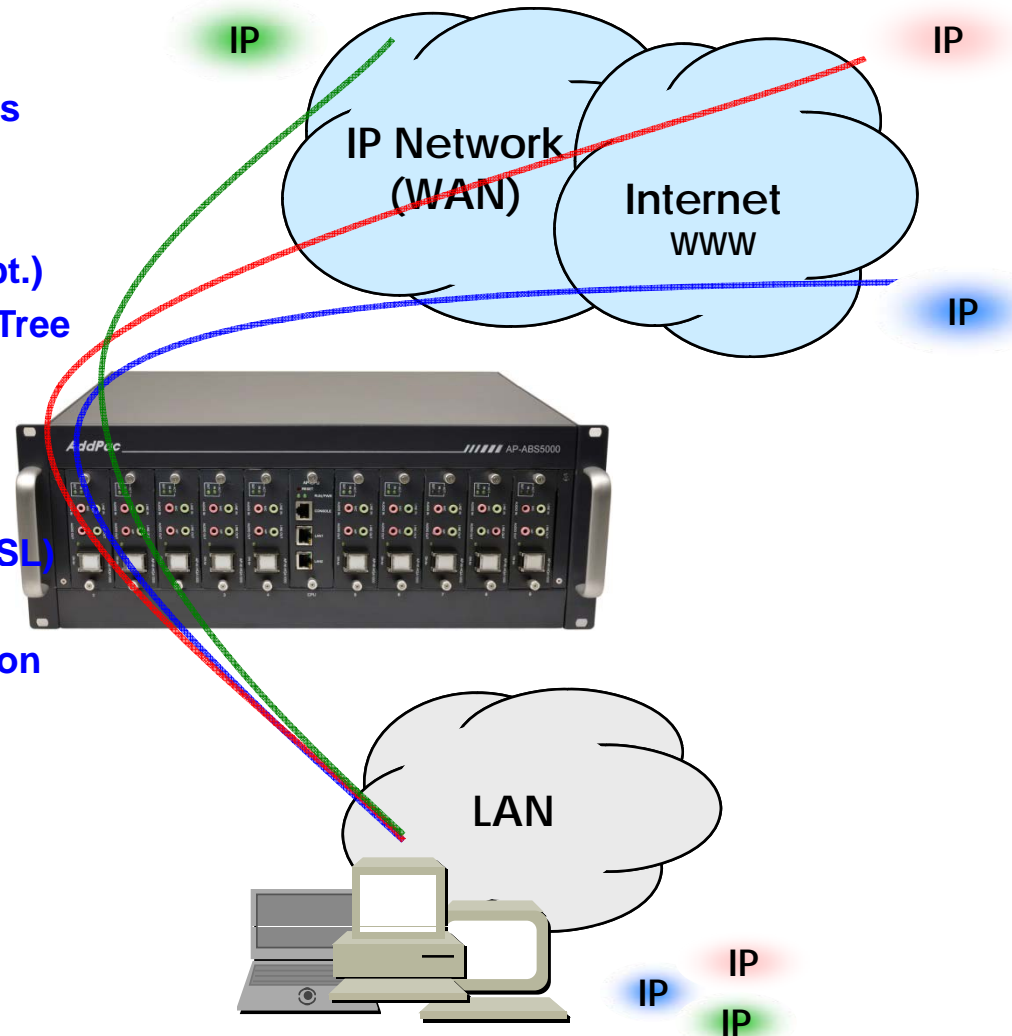
# APOS™ Service Features

## AP-ABS5000 IP High Quality Audio Broadcasting Server

- **Network Managements**
  - Standard SNMP Agent (MIB v2) Support
  - Remote Management using Console, Telnet
  - Web based Management using HTTP Server Interface

- **Security Functions**
  - Standard & Extended IP Access List
  - Enable/Disable for Specific Network Protocols
  - Multi-level User Account Management
  - Auto-disconnect for Telnet/Console Sessions
  - PPP User Authentication Supports (PAP & CHAP)

- **Operation & Managements**
  - System Performance Analysis for Process, CPU, Connection Interface
  - Debugging, System Auditing, and Diagnostics Support
  - System Booting and Auto-rebooting with Watchdog Feature
  - System Managements with Data Logging
  - IP Traffic Statistics with Accounting

# APOS™ Service Features

## AP-ABS5000 IP High Quality Audio Broadcasting Server

- **Network Protocols**
  - DHCP Server & Relay Functions
  - Network Address Translation (NAT) Function
  - Port Address Translation (PAT) Function
  - Transparent Bridging (IEEE Standard) Function
    - Spanning Tree Bridging Protocol Support
    - Remote Bridging Support
    - Concurrent Routing and Bridging Support
  - Cisco Style Command Line Interface (CLI)
  - Network time Protocol (NTP) Support

- **MBMS (Multimedia Broadcast Management System)**
  - MS Windows Graphical User Interface (GUI) based Audio Broadcasting Management
  - Service Group Configuration
  - Scheduled Broadcasting
  - Status Monitoring
  - Report Service
  - Embedded Media file Manager

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# APOS™ Service Features

## AP-ABS5000 IP High Quality Audio Broadcasting Server

- Audio Codec for AP-HQA Module
  - MP3(MPEG2 Layer3) Audio Codec
  - G.711 Audio Codec

**IP Broadcasting**

- RTP Protocols
  - Redundant RTP packet transmission in case of severe packet loss
  - Dynamic jitter buffer management and RPT 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



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# IP Audio Broadcasting Signal Flow

## AP-ABS5000 IP High Quality Audio Broadcasting Server



**AP-MBMS**

IP Audio Broadcasting Server
**Source (AP-ABS5000)**

IP Audio Broadcasting Terminal
**Play (AP1601N)**

IP Audio Broadcasting Terminal
**Play (AP1601N)**

Session Configuration

Session Start

START REQ (Session Info)

START RSP

Audio stream

Session Check

Audio stream

POLL REQ

POLL RSP (Session Statistics)

Session Stop

STOP REQ

STOP RSP (Session Statistics)
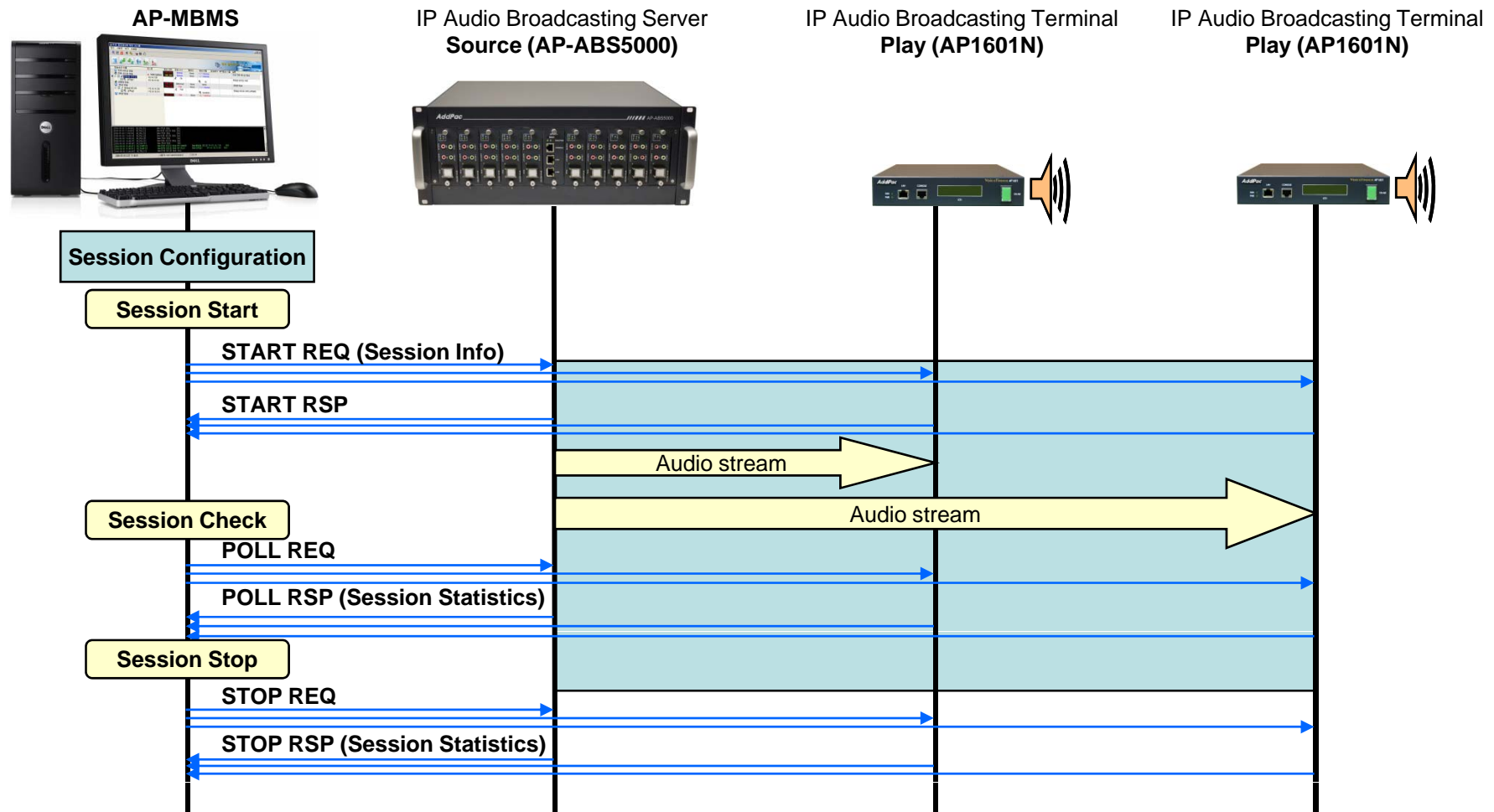
# Multicast Service Network Diagram

## AP-ABS5000 IP High Quality Audio Broadcasting Server



**Multicasting Service Network**

AP1601N

MBMS

**Internet**

Multicast Enabled

AP-ABS5000

IGMP  Router

Multicast Enabled

AP1601N **(Terminal)**

……

……

IGMP client
(Multicast join)

IGMP client
(Multicast join)

AP1601N

……

- – **Multicast protocol based such as IGMP Protocol**
- – **Available to broadcast multi destination with single channel bandwidth**

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# Unicast Service Network Diagram

## AP-ABS5000 IP High Quality Audio Broadcasting Server

**Unicasting Service Network**



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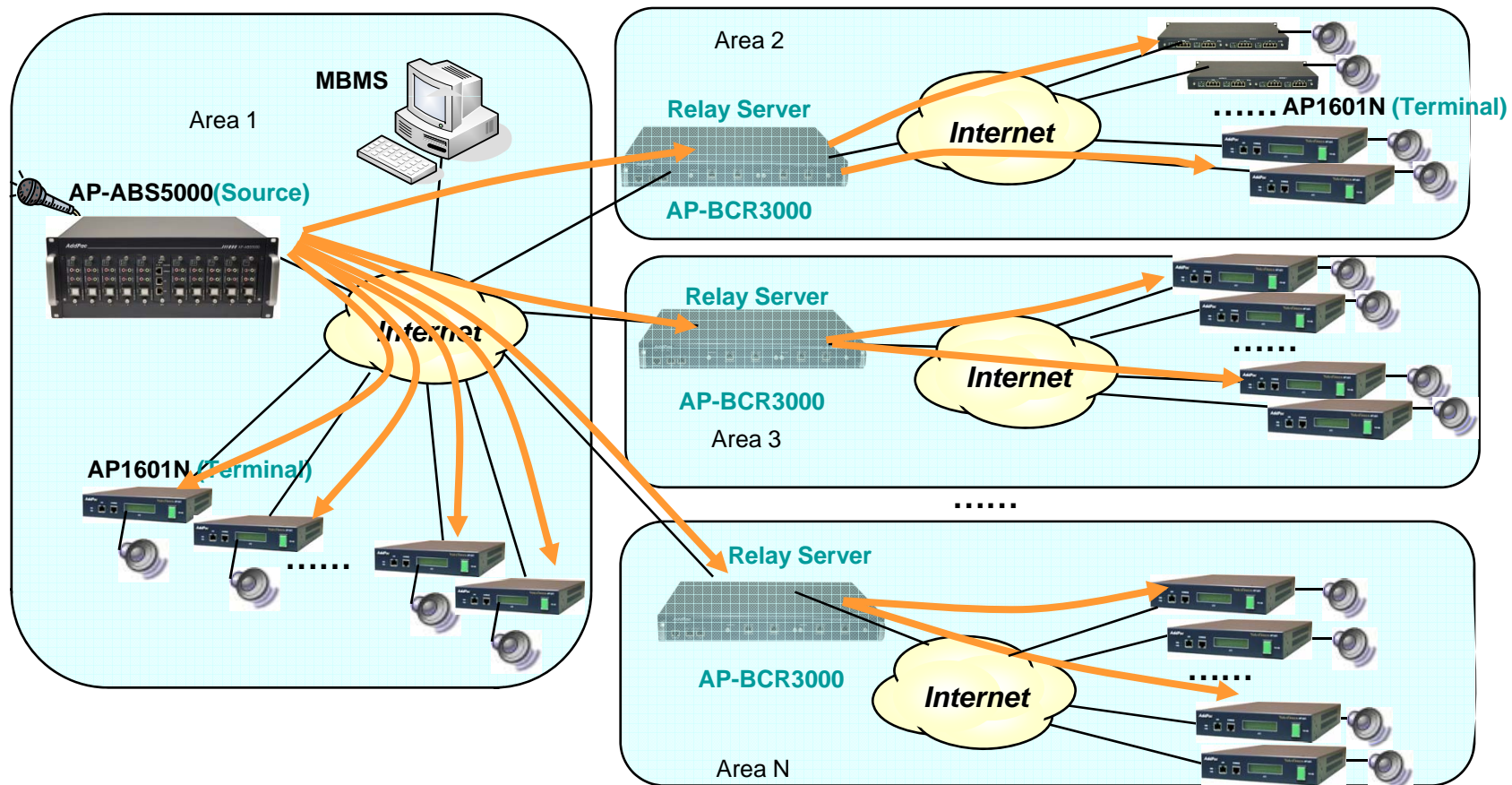
# MBMS 2.0 Software Features

AP-ABS5000 IP High Quality Audio Broadcasting Server

- User Registration Management
- User Access Restriction
- Broadcasting System Management
- Broadcasting Session Management
- Scheduling Broadcasting and On-time Broadcasting
- Emergency Broadcasting Management
- Scheduling Stop Management
- Event Log Management
- MBMS System Redundancy & Auto Data Backup

# MBMS 2.0 Software Features

## AP-ABS5000 IP High Quality Audio Broadcasting Server

# MBMS S/W Startup (Example)

## AP-ABS5000 IP High Quality Audio Broadcasting Server

# Broadcasting Equipment Management (Example)
### AP-ABS5000 IP High Quality Audio Broadcasting Server

# Broadcasting Configuration (Example)

## AP-ABS5000 IP High Quality Audio Broadcasting Server
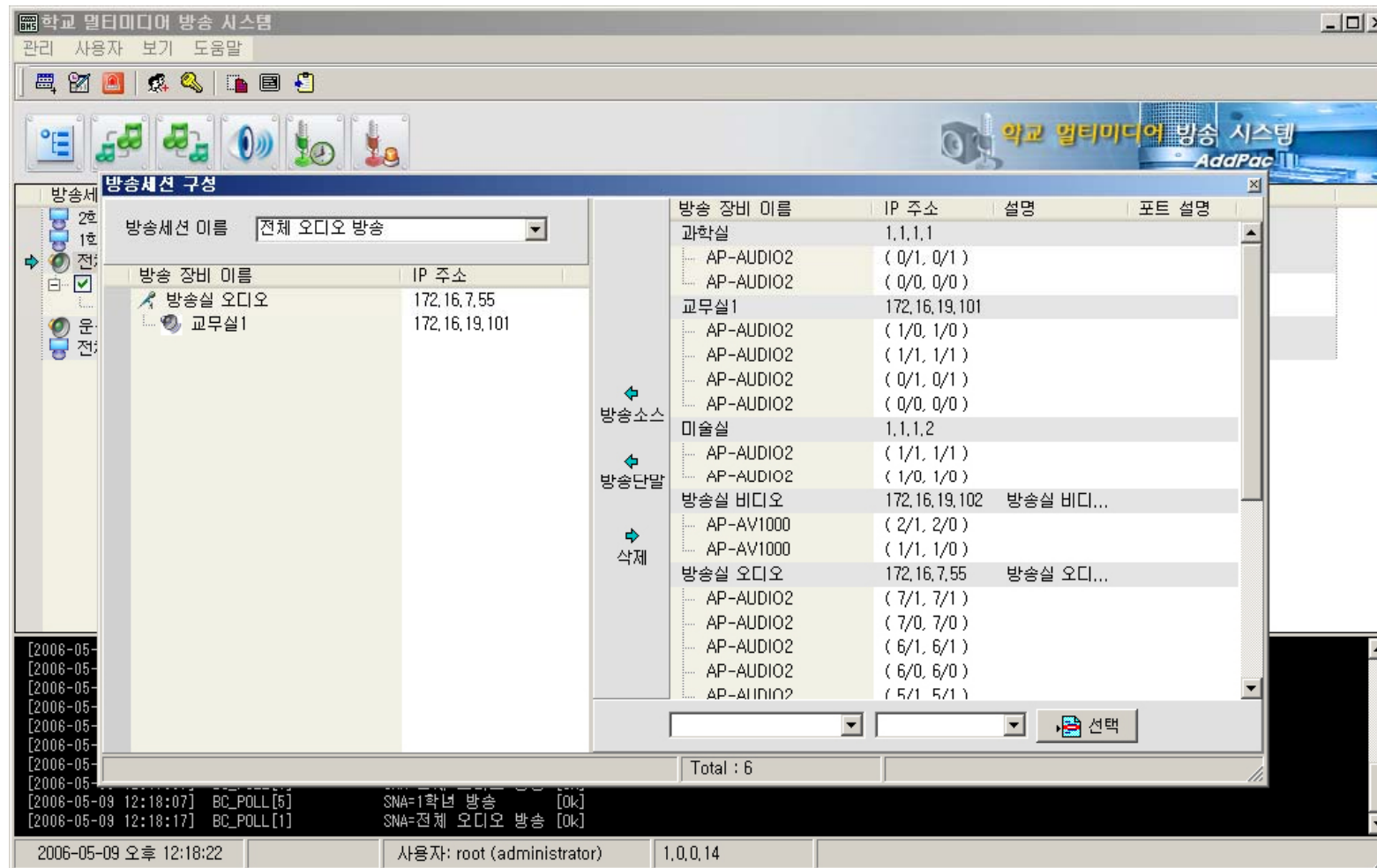
# Broadcasting Scheduling (Example)

## AP-ABS5000 IP High Quality Audio Broadcasting Server

# Event Log (Example)

## AP-ABS5000 IP High Quality Audio Broadcasting Server

# IP HQ Audio Broadcasting Solution

| Audio Broadcasting Manager S/W | HQ Audio Broadcasting Server AP-ABS5000 | Audio Broadcasting Router (Relay Server) | HQ Audio Broadcasting Terminal AP1601N | AMP. On/Off Power Switch Box AP-PSB |
|---|---|---|---|---|
| | | | | |
| Window based Audio Broadcasting Management Software. | Embedded Hardware based Audio Codec. Ten(10) HQ Audio Codec Module. | 1:N Audio Broadcasting Router. Gigabit Ethernet Support | Embeded Hardware based Audio Terminal One(1) HQ Audio Codec Module. High Quality Codec,G.711 Audio Codec. | AMP. Power ON/OFF Switch Box. Background Noise Remove at OFF-AIR |
| | | | | |

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# Application Service



**Headquarter**
**Branch 1**
AP-ABS5000
LAN
AP1601N
LAN

**IP Network
(Cable/ ADSL)**

ADSL/Cable Modem

Analog Voice Interface
Data Network
IP Broadcasting Network

AP1601N
**Branch 2**

AP1601N
LAN
**Branch n**
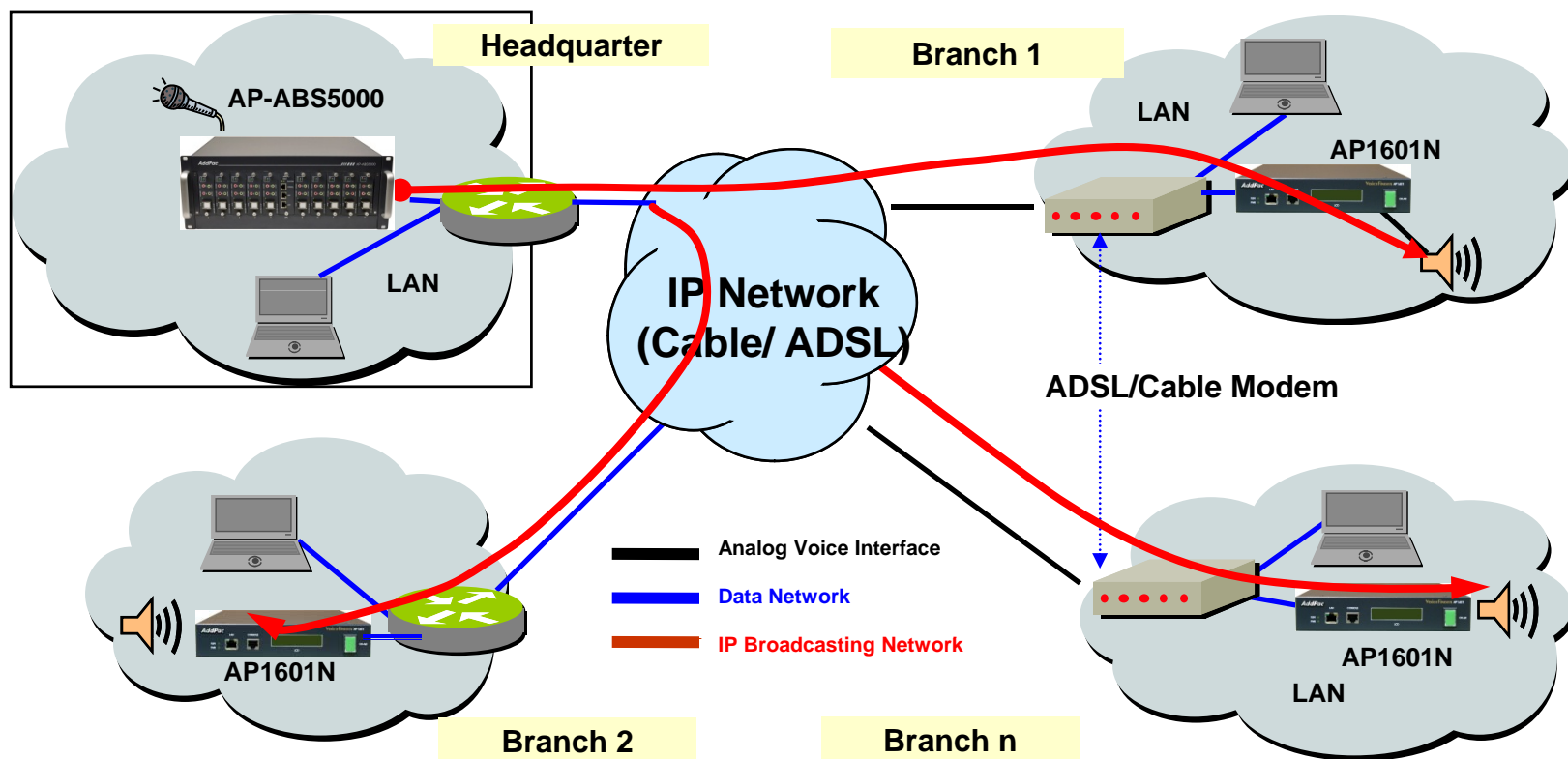
# Ordering Information

- **AP-ABS5000 IP High Quality Audio Broadcasting Server Hardware**
  - AP-ABS5000 Main Body
  - RISC Microprocessor with High-end Programmable DSP Architecture
  - 2-ports 10/100Mbps Fast Ethernet and 1-port RJ45 RS-232C Console
  - AP-N1-HQA1000 Module (Up to10 slot)
  - Including Network Cable Set & Power Supply, etc.
- **Built-in APOS Internetworking Software for AP-ABS5000**
- **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

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# Thank you!

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