

# AP-ABS3000

## IP High Quality Audio Broadcasting Server

High Performance IP based Multichannel IP High Quality Audio Broadcasting Server



**AddPac**

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Sales and Marketing

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# Product Overview

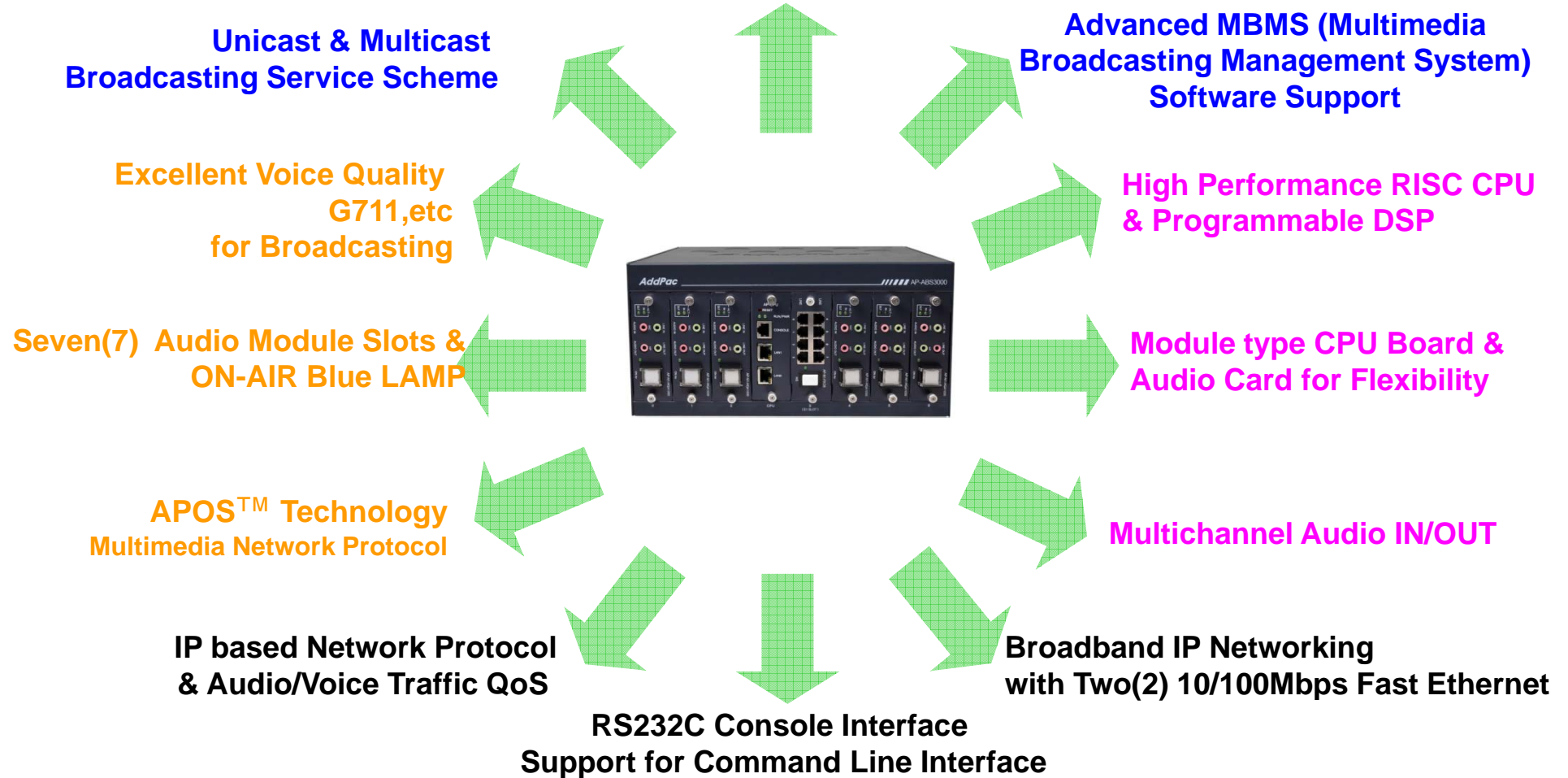
## AP-ABS3000 IP High Quality Audio Broadcasting Server

- IP based Audio Broadcasting Solution
- Hardware Architecture for Multichannel Audio Broadcasting Service
- Seven(7) Module Slots for Multichannel Audio Encoding Service
- High Quality Audio Codec Support (G.711, etc)
- **FXO PSTN Interface Support for Cellular based Broadcasting Service**
- 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
- Internal Power Supply

# Product Highlights

AP-ABS3000 IP High Quality Audio Broadcasting Server

## Multichannel IP Broadcasting Server



# Hardware Specification

AP-ABS3000 IP High Quality Audio Broadcasting Server



RISC  
CPU



High-end  
DSP

- RISC Microprocessor Computing Power
- High-end Programmable DSP Hardware Architecture
- Seven(7) Module Slots for Audio Broadcasting Codec Module, FXO VoIP Module, etc
- 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

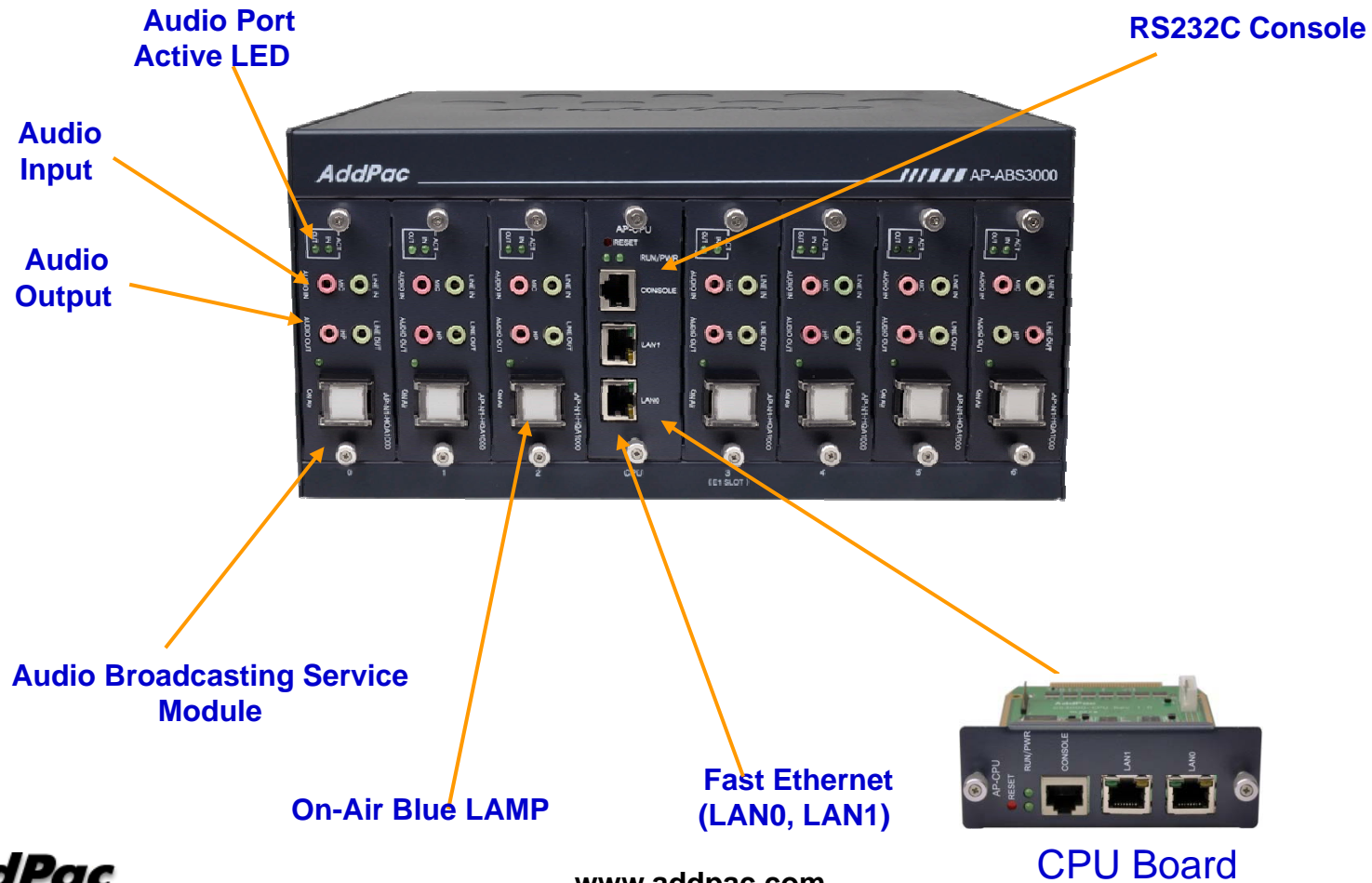
# Hardware Specification

AP-ABS3000 IP High Quality Audio Broadcasting Server

RISC  
CPU

High-end  
DSP

## AP-ABS3000 Front Side



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# Hardware Specification

AP-ABS3000 IP High Quality Audio Broadcasting Server

RISC  
CPU

High-end  
DSP

## AP-CPU Board



RS232C Console

Fast Ethernet  
(LAN0, LAN1)

## AP-N1-HQA1000 Board



Audio IN  
(MIC, Line IN)

Audio OUT  
(HP, Line OUT)

ON-AIR Blue LAMP

# Hardware Specification

AP-ABS3000 IP High Quality Audio Broadcasting Server

RISC  
CPU

High-end  
DSP

## AP-ABS3000 Back Side



Power ON/OFF  
Switch

Power Input




# Hardware Specification

AP-ABS3000 IP High Quality Audio Broadcasting Server

RISC  
CPU

High-end  
DSP

## AP-ABS5000 Audio Modules

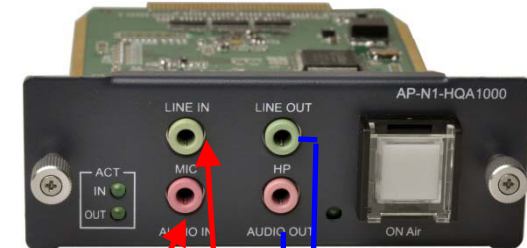
Audio Module Type (AP-N1-HQA1000)	Audio Module Features	Maximum Audio Channel in AP-ABS5000
 <p>The image shows the AP-N1-HQA1000 audio module, a black rectangular device with a green PCB on top. It features several ports: a 3.5mm stereo jack on the left, a green LINE IN port, a red MIC port, a green LINE OUT port, a red HP port, and a silver ON Air button on the right. Labels include 'ACT IN OUT', 'AUDIO IN', 'AUDIO OUT', 'ON Air', 'LINE IN', 'LINE OUT', 'MIC', 'HP', and 'AP-N1-HQA1000'.</p>	<p>1-Channel Audio In/Out Port</p> <p>Audio IN : MIC, Line IN Audio OUT : Headphone, Line OUT</p> <p>3.5mm Stereo JACK</p> <p>High Quality G.711, etc, Audio Codec</p>	<p>Up to 10 channel = 10 Module x 1 Channel</p>

# AP-HQA Module

AP-ABS3000 IP High Quality Audio Broadcasting Server

RISC  
CPU

High-end  
DSP



Connect with 1:2 Stereo Jack

Connect with 2:1 Stereo Jack

Direct MIC

- G.711, etc codec realizes high quality audio service
- Direct MIC-In/ Headphone In Port for monitoring
- Real time High Quality Audio Band Broadcasting



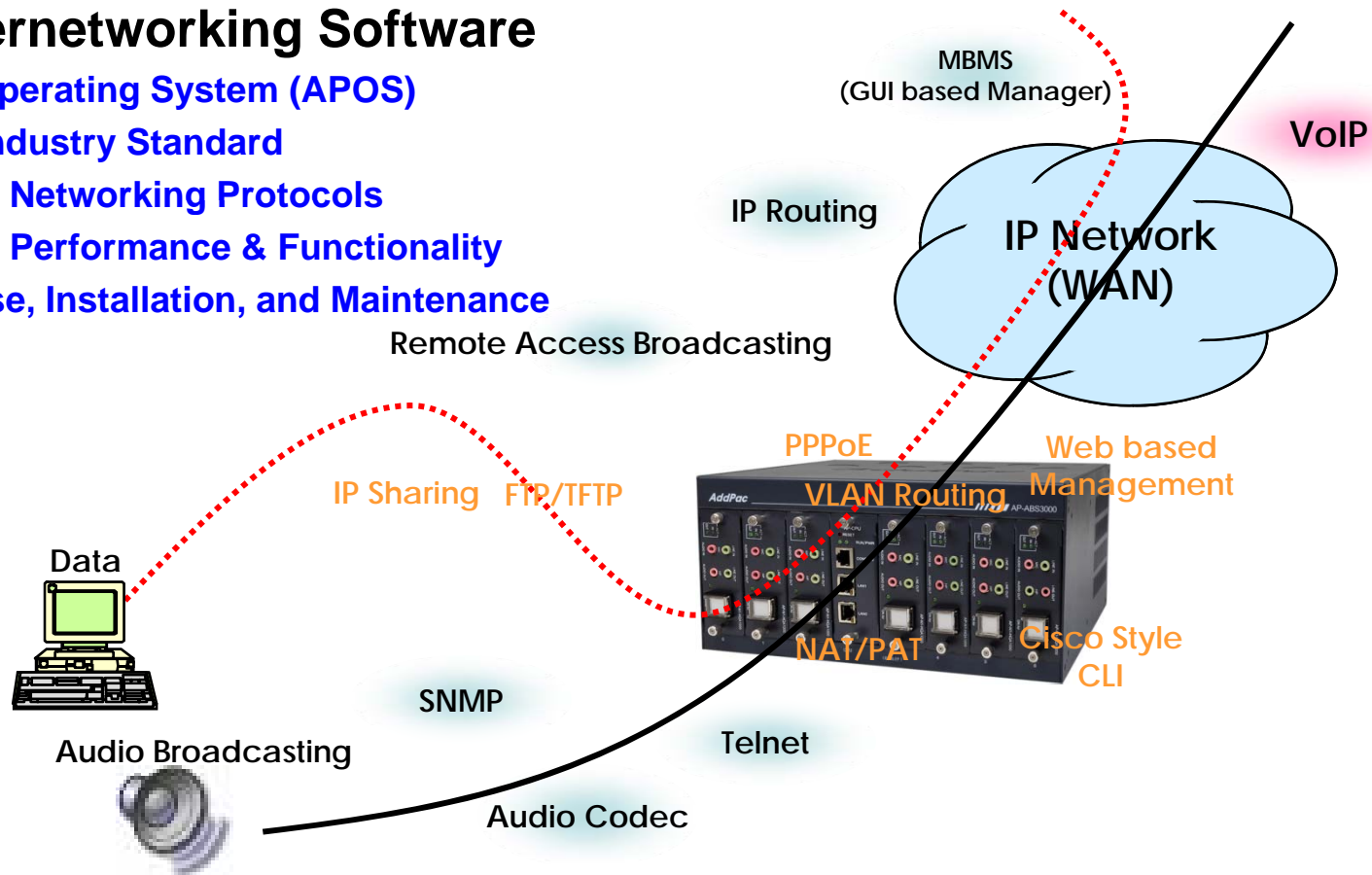
Headphone

# APOS™ Service Features

AP-ABS3000 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



# APOS™ Service Features

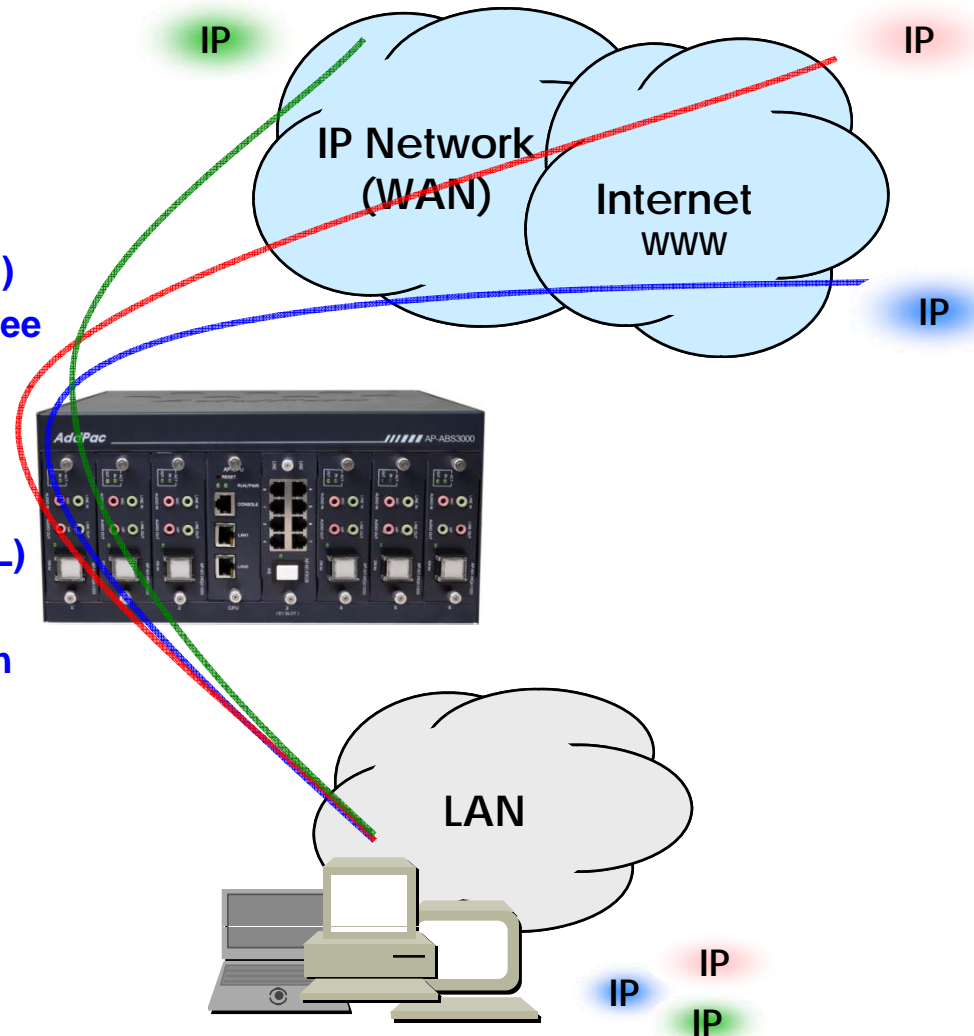
AP-ABS3000 IP High Quality Audio Broadcasting Server

- **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



# APOS™ Service Features

AP-ABS3000 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-ABS3000 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

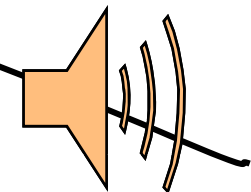
# APOS™ Service Features

AP-ABS3000 IP High Quality Audio Broadcasting Server

- Audio Codec for AP-HQA Module
  - OPUS (8,16,24,48KHz) (mono, stereo), OPUS is no license, no royalty
  - G.722, G.711, G.726 (mono)

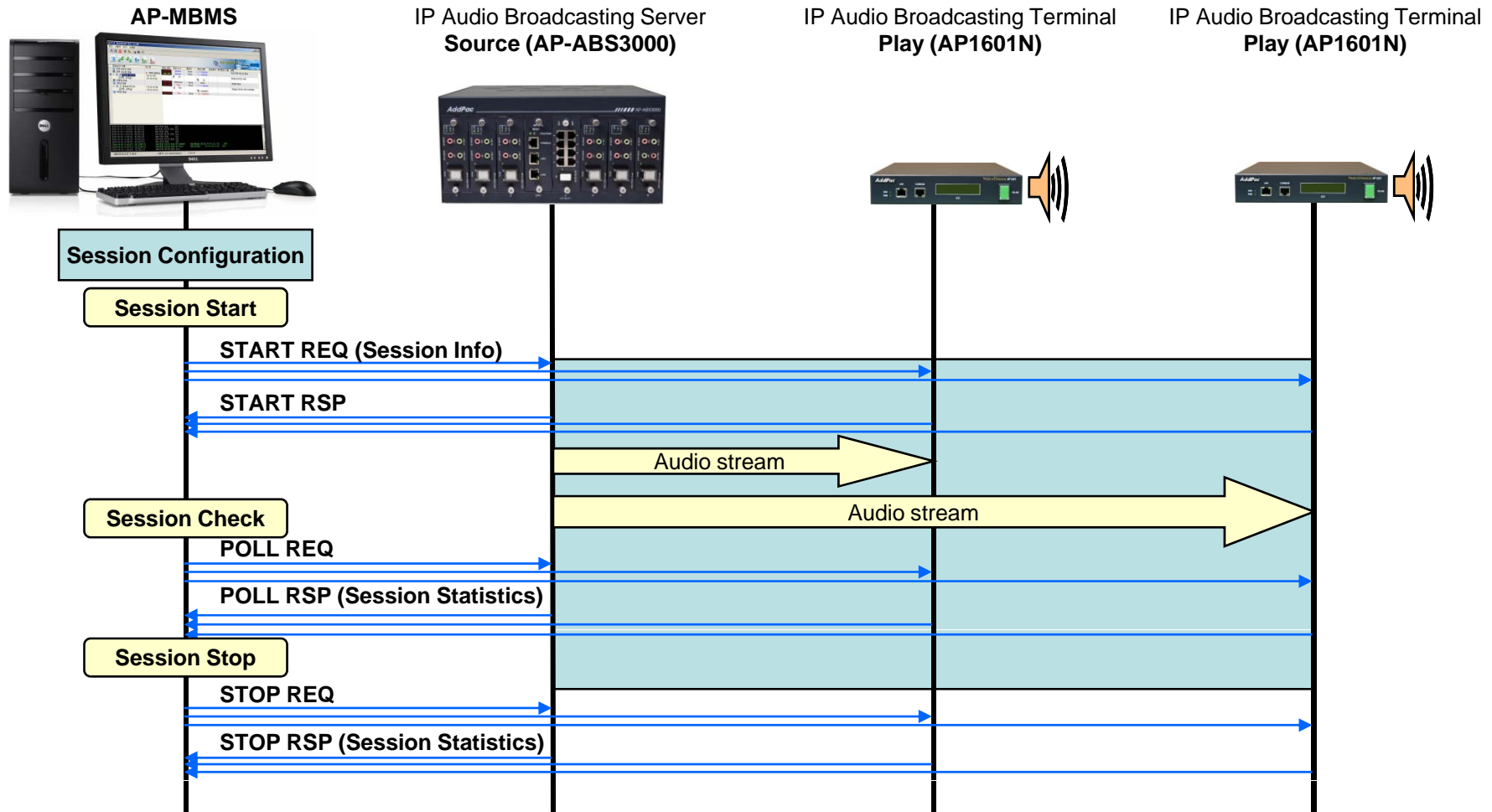
## IP Broadcasting

- 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



# IP Audio Broadcasting Signal Flow

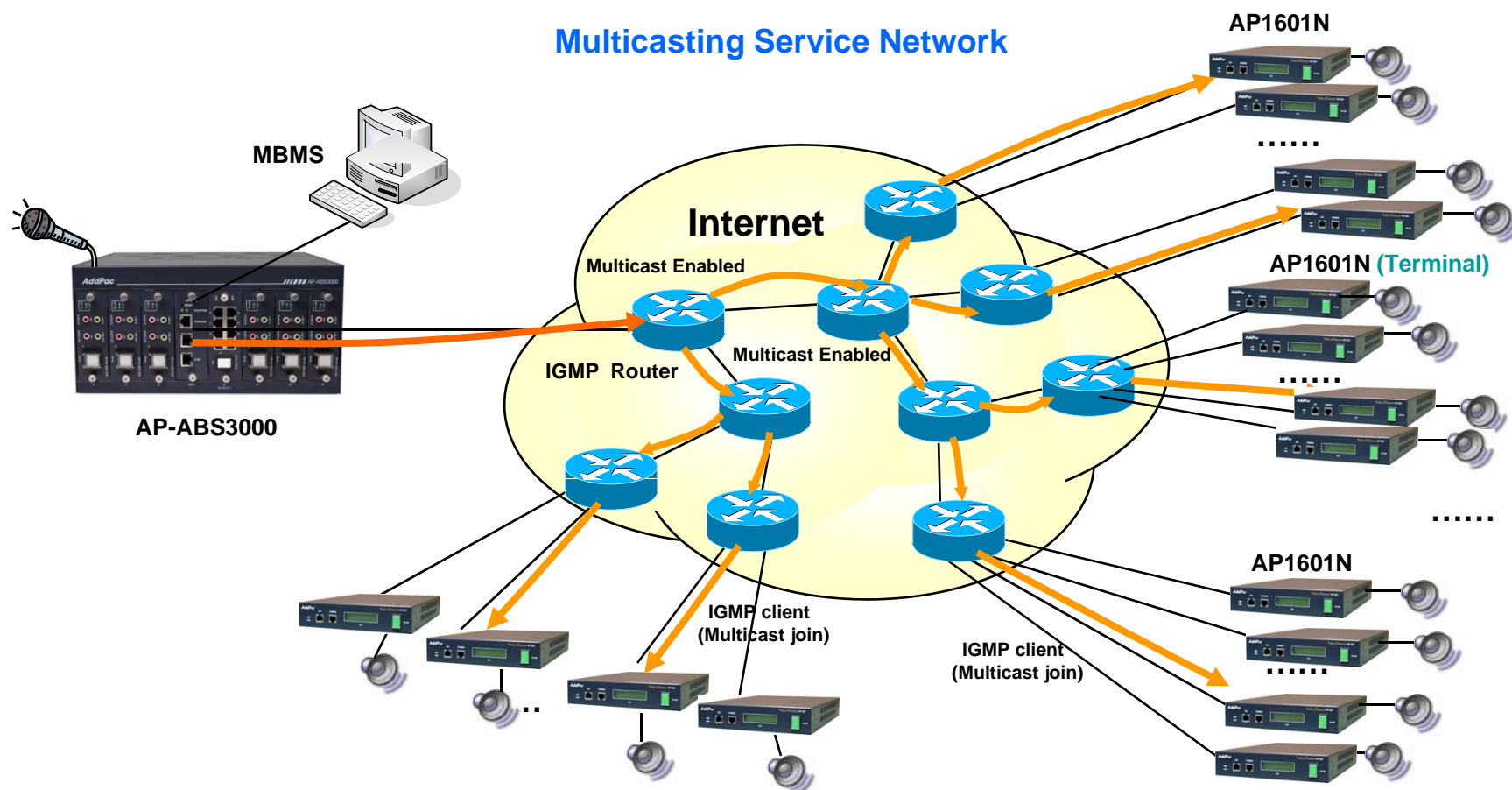
AP-ABS3000 IP High Quality Audio Broadcasting Server





# Multicast Service Network Diagram

AP-ABS3000 IP High Quality Audio Broadcasting Server

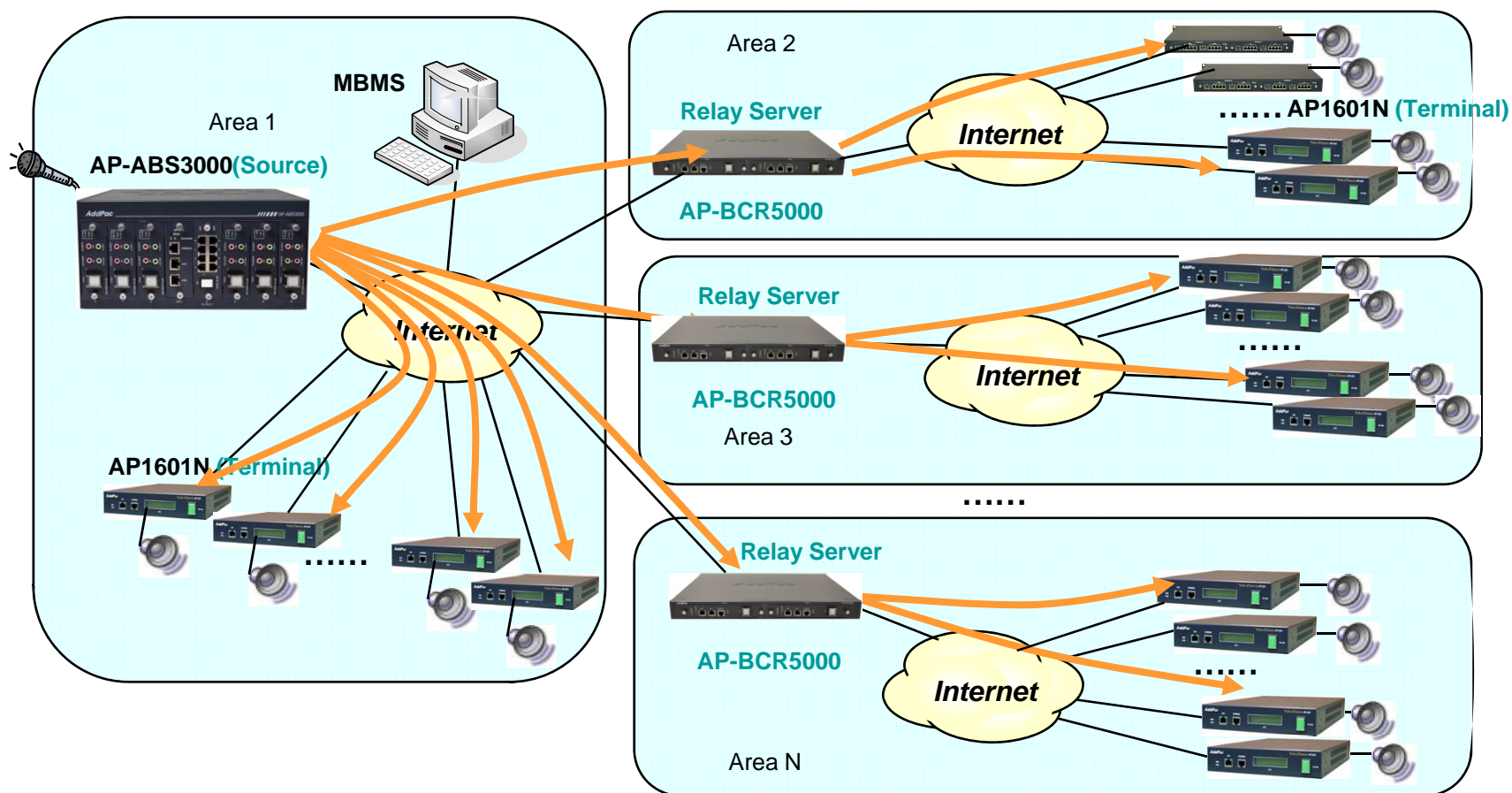


- Multicast protocol based such as **IGMP Protocol**
- Available to broadcast multi destination with single channel bandwidth

# Unicast Service Network Diagram

AP-ABS3000 IP High Quality Audio Broadcasting Server

## Unicasting Service Network



# MBMS 2.0 Software Features

- 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



# MBMS S/W Startup (Example)

학교 멀티미디어 방송 시스템

관리 사용자 보기 도움말

학교 멀티미디어 방송 시스템 AddPac

방송세션 이름	호스트	방송 상태	방송 소스	릴레이	방송 단말	방송예약	예약방송 이름	설명
전체 비디오 방송		ON-AIR	Normal	None	1 / 1 Normal			학교 전체 비디오 방송
전체 오디오 방송	화재긴급방송	ON-AIR	Normal	None	1 / 1 Normal			
▶ 방송실 오디오	172.16.7.55		Ok		Ok			방송실 오디오 서버
교무실1	172.16.19.101				Ok			
운동장 방송		ON-AIR	Unknown	None	None			운동장 방송
1학년 방송		ON-AIR	Fail	None	1 / 1 Normal			
▶ 방송실 비디오	172.16.19.102		Fail		NoSESS			방송실 비디오 서버 (AP5840)
교무실1	172.16.19.101				NoSESS			
2학년 방송		ON-AIR	Fail	None	0 / 1 Normal			

```

[2006-05-09 11:44:46] BC_POLL [5] SNA=1학년 방송 [Ok]
[2006-05-09 11:44:56] BC_POLL [1] SNA=전체 오디오 방송 [Ok]
[2006-05-09 11:45:06] BC_POLL [5] SNA=1학년 방송 [Ok]
[2006-05-09 11:45:16] BC_POLL [1] SNA=전체 오디오 방송 [Ok]
[2006-05-09 11:45:26] BC_POLL [5] SNA=1학년 방송 [Ok]
[2006-05-09 11:45:37] BC_POLL [1] SNA=전체 오디오 방송 [Ok]
[2006-05-09 11:45:46] BC_POLL [5] SNA=1학년 방송 [Ok]
[2006-05-09 11:45:51] BC_START [1] SNA=전체 오디오 방송 NTY=SOURCE ENA=방송실 오디오 IP=172.16.7.55 [Ok]
[2006-05-09 11:45:51] BC_START [1] SNA=전체 오디오 방송 NTY=PLAY ENA=교무실1 IP=172.16.19.101 [Ok]
[2006-05-09 11:45:56] BC_POLL [1] SNA=전체 오디오 방송 [Ok]
    
```

2006-05-09 오전 11:46:01 사용자: root (administrator) 1,0,0,14

# Broadcasting Equipment Management (Example)

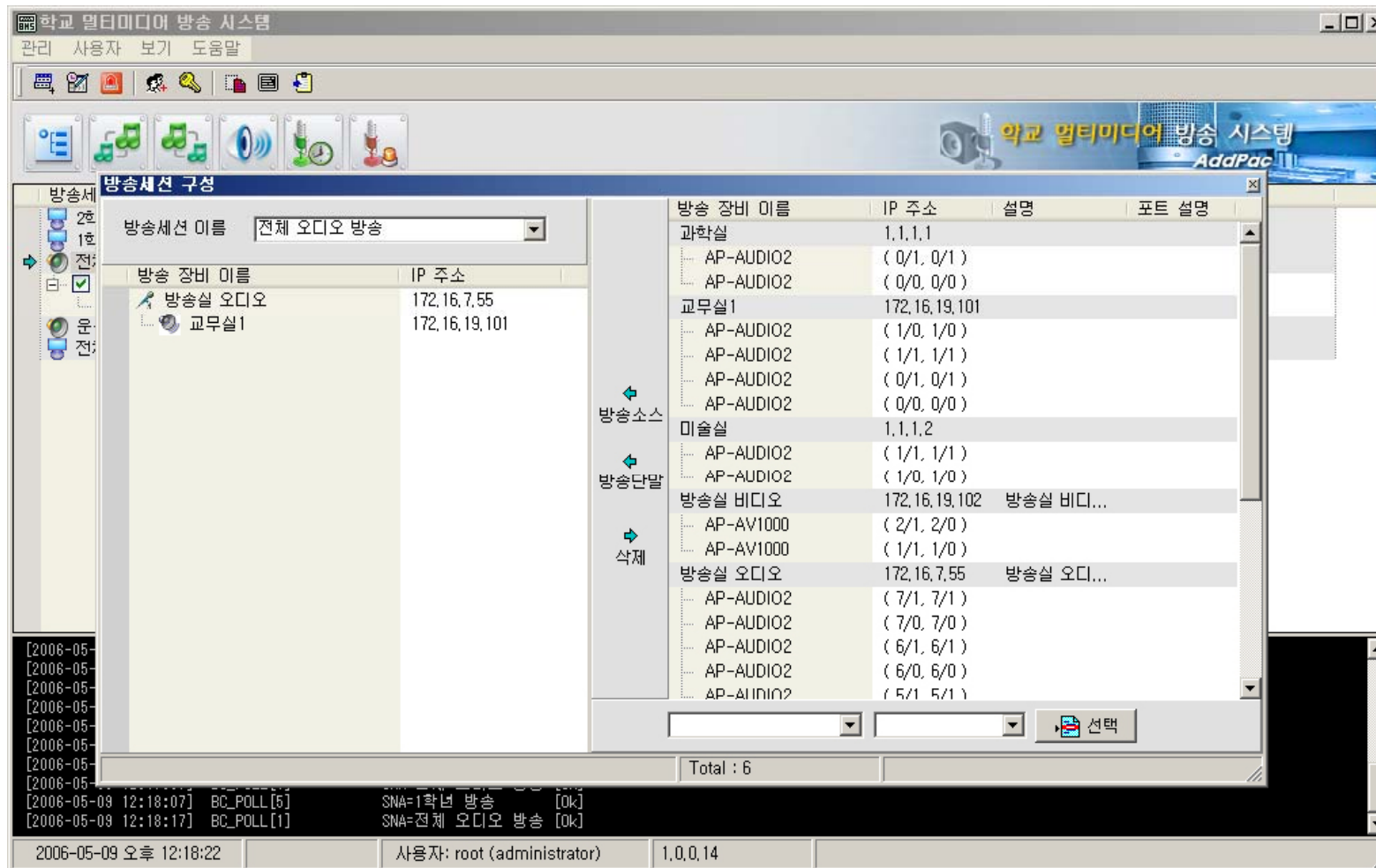
**방송 장비 관리**

방송장비 이름 (방송 이름)	호스트 주소 (ON...	장비 모델명	입력포트	출력 포트	설명	포트 이름
과학실	1.1.1.1	AP1601				
교무실 1	172.16.19.101	AP2520				
1학년 방송			1-1	1-1		
2학년 방송			0-1	0-1		
전체 오디오 방송			1-1	1-1		
미술실	1.1.1.2	AP2120				
방송실 비디오	172.16.19.102	AP5840			방송실 비디오...	
1학년 방송			2-1	2-0		
2학년 방송			1-1	1-0		
전체 비디오 방송			1-1	1-0	학교 전체 비...	
방송실 오디오	172.16.7.55	AP3150			방송실 오디오...	
전체 오디오 방송			7-1	7-1		
비디오 단말	172.16.39.24	AP-VP300			vp200 단말	
전체 비디오 방송			0-1	0-0	학교 전체 비...	

Total : 6 Selected count : 1

2006-05-09 오후 12:00:43 사용자: root (administrator) 1.0.0.14

# Broadcasting Configuration (Example)



# Broadcasting Scheduling (Example)

The screenshot shows the '예약 방송 관리' (Broadcast Scheduling Management) window. The main area contains a table with the following data:

방송세션 이름	예약 방송 이름	예약 방송 종류	요일	시작 시간	종료 시간	설명
전체 오디오 방송	2교시 종료	월요일-금요일		10:50:00	10:50:15	
전체 오디오 방송	2교시 시작	월요일-금요일		10:00:00	10:00:15	
전체 오디오 방송	1교시 종료	월요일-금요일		09:50:00	09:50:15	
전체 오디오 방송	1교시 시작	월요일-금요일		09:00:00	09:00:15	
전체 오디오 방송	점심 방송	월요일-금요일		12:00:00	13:00:00	
전체 오디오 방송	아침 방송	월요일-금요일		07:30:00	08:30:00	
전체 오디오 방송	3교시 종료	월요일-금요일		11:50:00	11:50:15	
전체 오디오 방송	3교시 시작	월요일-금요일		11:00:00	11:00:15	

At the bottom of the window, there is a log showing system events:

```

[2006-05-09 12:05:00]
[2006-05-09 12:05:10]
[2006-05-09 12:05:20]
[2006-05-09 12:05:25]
[2006-05-09 12:05:30]
[2006-05-09 12:05:40]
[2006-05-09 12:05:50]
[2006-05-09 12:05:57] NewSchedule[8] SMA=3교시 종료 [Ok]
[2006-05-09 12:06:06] BC_POLL[5] SMA=1학년 방송 [Ok]
[2006-05-09 12:06:17] BC_POLL[1] SMA=전체 오디오 방송 [Ok]
    
```

The status bar at the bottom indicates the date and time as '2006-05-09 오후 12:06:20', the user as '사용자: root (administrator)', and the version as '1.0.0.14'.



# Event Log (Example)

학교 멀티미디어 방송 시스템

관리 사용자 보기 도움말

이벤트 이력 조회

일자&시간: 2006-05-08 오후 12:16:21 ~ 2006-05-09 오후 12:16:21

일자&시간	이벤트	동작	방송종류	방송이름	장비종류	장비이름	IP주소	장비상태	예약방송이름
2006-05-08 14:43:33	Request	STOP	UNICAST	테스트 오디오 방송					
2006-05-08 14:43:05	Request	START	UNICAST	테스트 오디오 방송					
2006-05-08 14:43:03	Request	START	UNICAST	테스트 오디오 방송					
2006-05-08 14:42:56	Request	STOP	UNICAST	테스트 오디오 방송					
2006-05-08 14:42:49	Request	START	UNICAST	테스트 오디오 방송					
2006-05-08 14:42:48	Request	START	UNICAST	테스트 오디오 방송					
2006-05-08 14:42:48	Request	START	UNICAST	테스트 오디오 방송					
2006-05-08 14:42:48	Request	START	UNICAST	테스트 오디오 방송					
2006-05-08 14:42:47	Request	STOP	UNICAST	테스트 오디오 방송					
2006-05-08 14:42:46	Request	START	UNICAST	테스트 오디오 방송					
2006-05-08 14:42:46	Request	STOP	UNICAST	테스트 오디오 방송					
2006-05-08 14:07:19	Request	START	UNICAST	테스트 비디오 방송					
2006-05-08 14:07:17	Response	STOP	UNICAST	테스트 오디오 방송	PLAY	교실	172.16.19.1...	Not Response	
2006-05-08 14:07:17	Response	STOP	UNICAST	테스트 오디오 방송	SOURCE	방송실	172.16.7.55	Not Response	
2006-05-08 14:07:16	Request	STOP	UNICAST	테스트 오디오 방송					
2006-05-08 14:07:07	Response	START	UNICAST	테스트 오디오 방송	PLAY	교실	172.16.19.1...	Not Response	
2006-05-08 14:07:07	Response	START	UNICAST	테스트 오디오 방송	SOURCE	방송실	172.16.7.55	Not Response	
2006-05-08 14:07:06	Request	START	UNICAST	테스트 오디오 방송					
2006-05-08 14:05:09	Request	STOP	UNICAST	테스트 비디오 방송					
2006-05-08 13:57:05	Request	START	UNICAST	테스트 비디오 방송					

2006-05-09 12:16:57] BC\_POLL [1] SNA=전체 오디오 방송 [Ok]

2006-05-09 오후 12:16:56 사용자: root (administrator) 1,0,0,14

# 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
				
<p>Window based Audio Broadcasting Management Software.</p>	<p>Embeded Hardware based Audio Codec. Ten(10) HQ Audio Codec Module. G.711,etc Audio Codec.</p>	<p>1:N Audio Broadcasting Router. Gigabit Ethernet Support</p>	<p>Embeded Hardware based Audio Terminal One(1) HQ Audio Codec Module. G.711, etc, Audio Codec.</p>	<p>AMP. Power ON/OFF Switch Box. Background Noise Remove at OFF-AIR</p>

# Ordering Information

- **AP-ABS3000 IP High Quality Audio Broadcasting Server Hardware**
  - AP-ABS3000 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 to 7 slot)
  - Including Network Cable Set & Internal Power Supply, etc.
- **Built-in APOS Internetworking Software for AP-ABS3000**
- **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](http://www.addpac.com)



# Thank you!

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