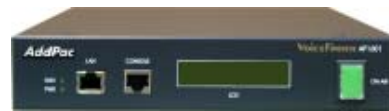


# AP3110

## IP Voice Broadcasting Server

High Performance IP based Multichannel IP High Quality Voice Broadcasting Server



**AddPac**

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Sales and Marketing

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# Contents

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- Product Highlight
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- APOS™ Service Features
- IP Voice Broadcasting Signal Flow
- Unicast & Multicast Service Feature
- MBMS v2.0 Software Features
- IP Voice Broadcasting Solution
- Application Area
- Ordering Information

# Product Overview

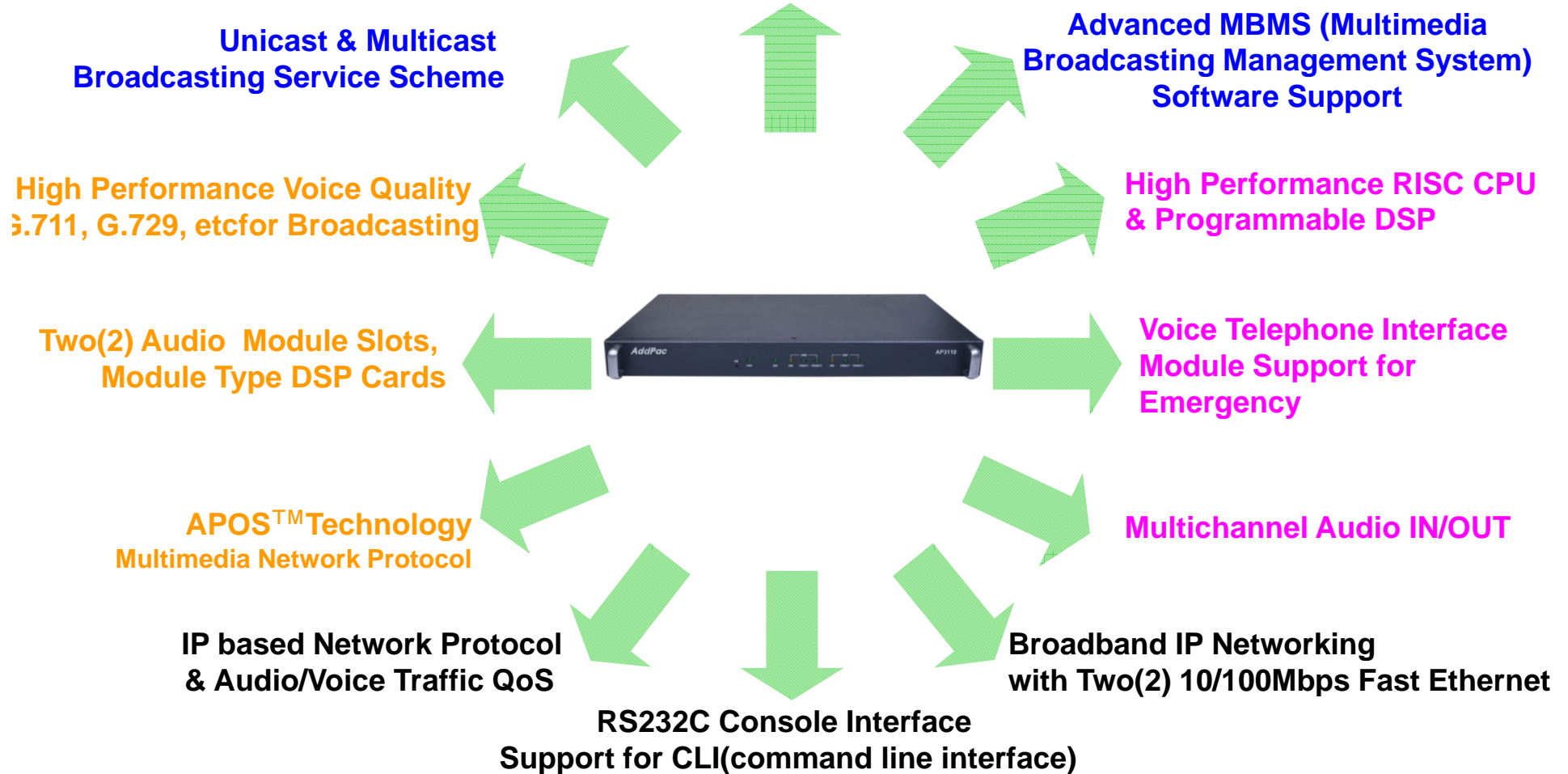
## AP3110 IP Voice Broadcasting Server

- IP based Voice Broadcasting Solution
- IP Voice Broadcasting Server for Small Enterprise (4~8 terminal)
- Hardware Architecture for Multichannel Voice Broadcasting Service
- Two(2) Module Slots for Multichannel Voice Encoding Service
- High Performance DSP based Voice Codec Support (G.711, G.729, etc)
- Unicast and Multicast Broadcasting Scheme
- Enhanced MBMS (Multimedia Broadcasting Management System) Support
- Multichannel Audio IN/OUT Port
- Voice Telephone Interface Module Support for Emergency
- Firmware Upgradeable Architecture
- Broadcasting Solution with Outstanding Network Service Capability
- “19inch Rack Mountable Compact Broadcasting Server with Internal Power Supply

# Product Highlights

## AP3110 IP Voice Broadcasting Server

### Multichannel IP Broadcasting Server



# Hardware Specification

AP3110 IP Voice Broadcasting Server



RISC  
CPU



High-end  
DSP

- RISC Microprocessor Computing Power
- High-end Programmable DSP Hardware Architecture
- Two(2) Module Slots for Audio Broadcasting Codec Module
- High quality Audio and Voice Interface
  - Audio Input Connector (Line Input, MIC Input)
  - Audio Output Connector
- Network Interface
  - Two(2) 10/100Mbps Fast Ethernet (RJ45)
  - One(1) RS-232C Interface (RJ45) for Command Line Interface

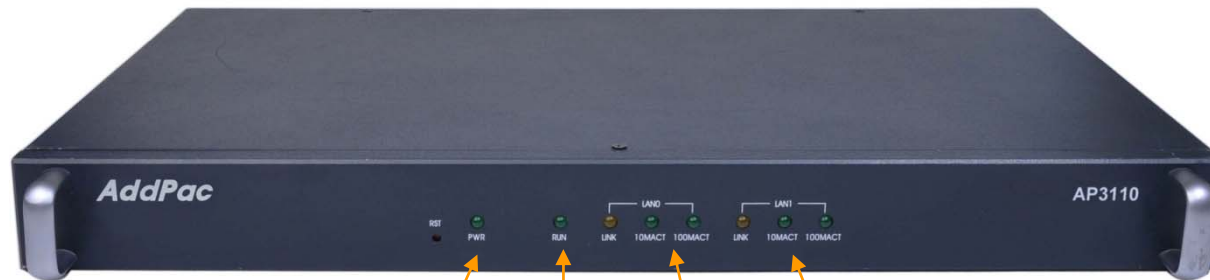
# Hardware Specification

AP3110 IP Voice Broadcasting Server

RISC  
CPU

High-end  
DSP

## AP3110 Front Side



Power LED

Run LED

LAN0 LEDs

LAN1 LEDs

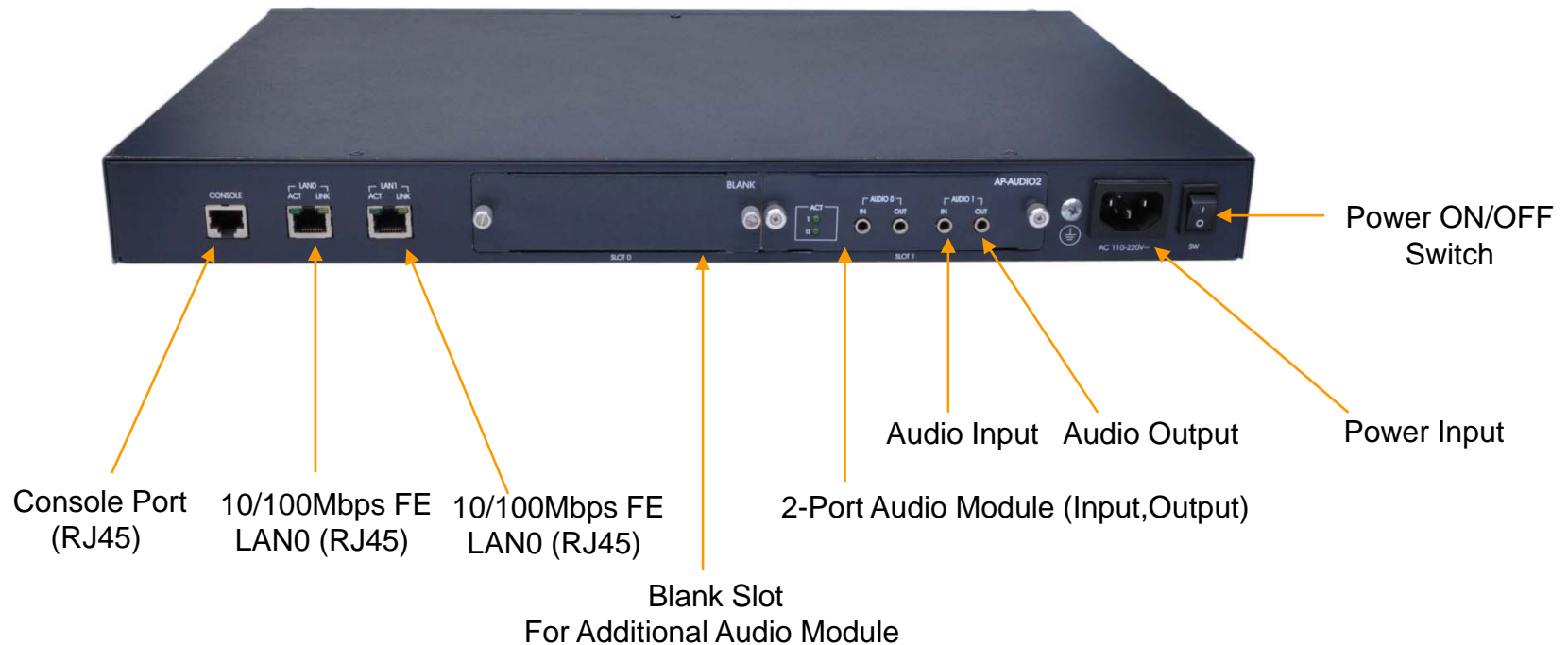
# Hardware Specification

AP3110 IP Voice Broadcasting Server

RISC  
CPU

High-end  
DSP

## AP3110 Back Side






# Hardware Specification

## AP3110 IP Voice Broadcasting Server

RISC  
CPU

High-end  
DSP

Target	Voice Modules	Module Features	Module Picture
AP3110	AP-AUDIO2	2-Pair Audio-In/Out Ports <b>Voice Band</b> IP Broadcasting	
AP3110	AP-AUD1S3	1-Pair Audio-In/Out Ports, FXS Analog Interface <b>Voice Band</b> IP Broadcasting	
AP3110	AP-AUD1S2O1	1-Pair Audio-In/Out Ports, FXS 2-Ports, FXO 1-Port <b>Voice Band</b> IP Broadcasting	

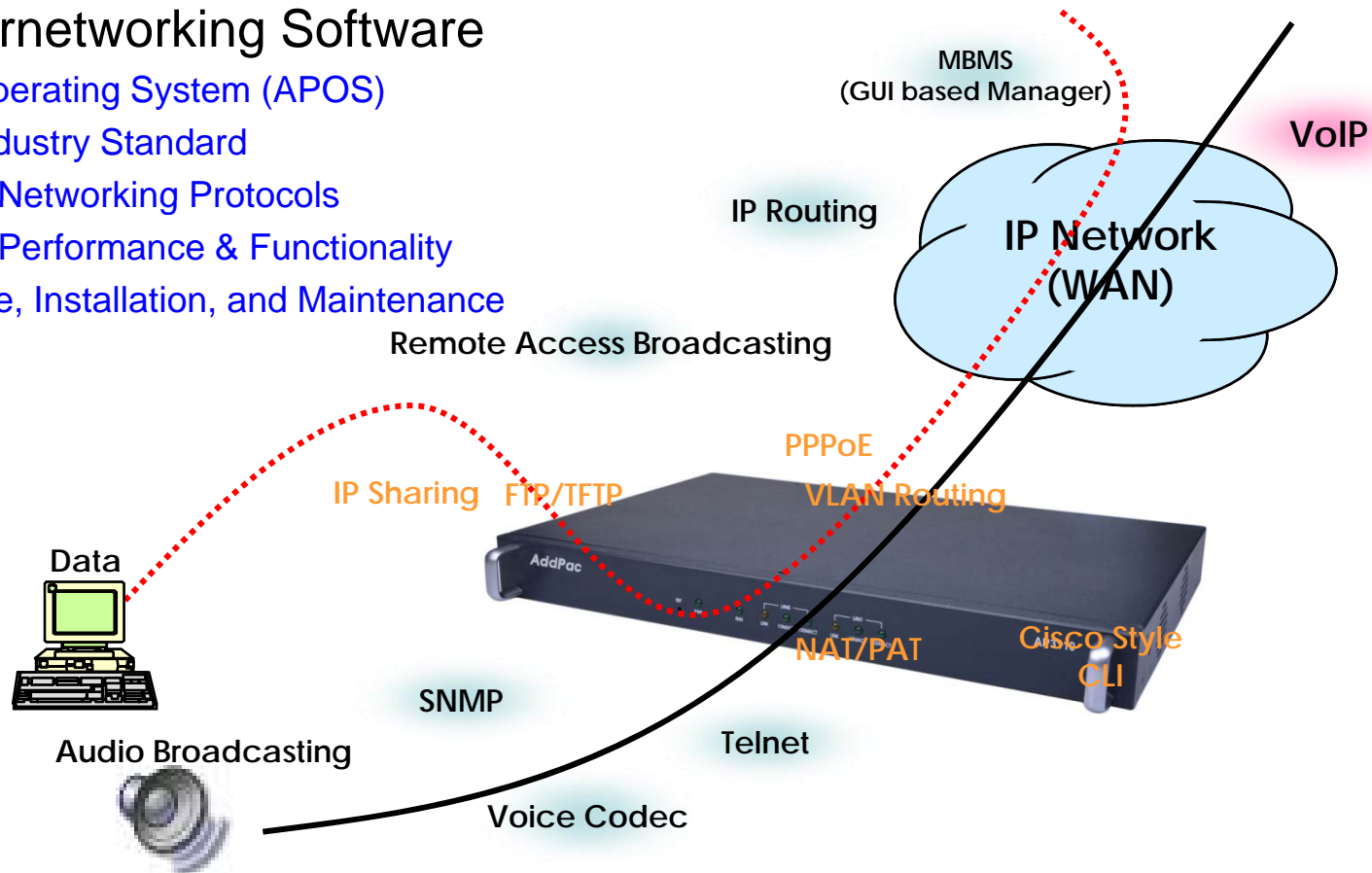


# APOS™ Service Features

AP3110 IP Voice 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

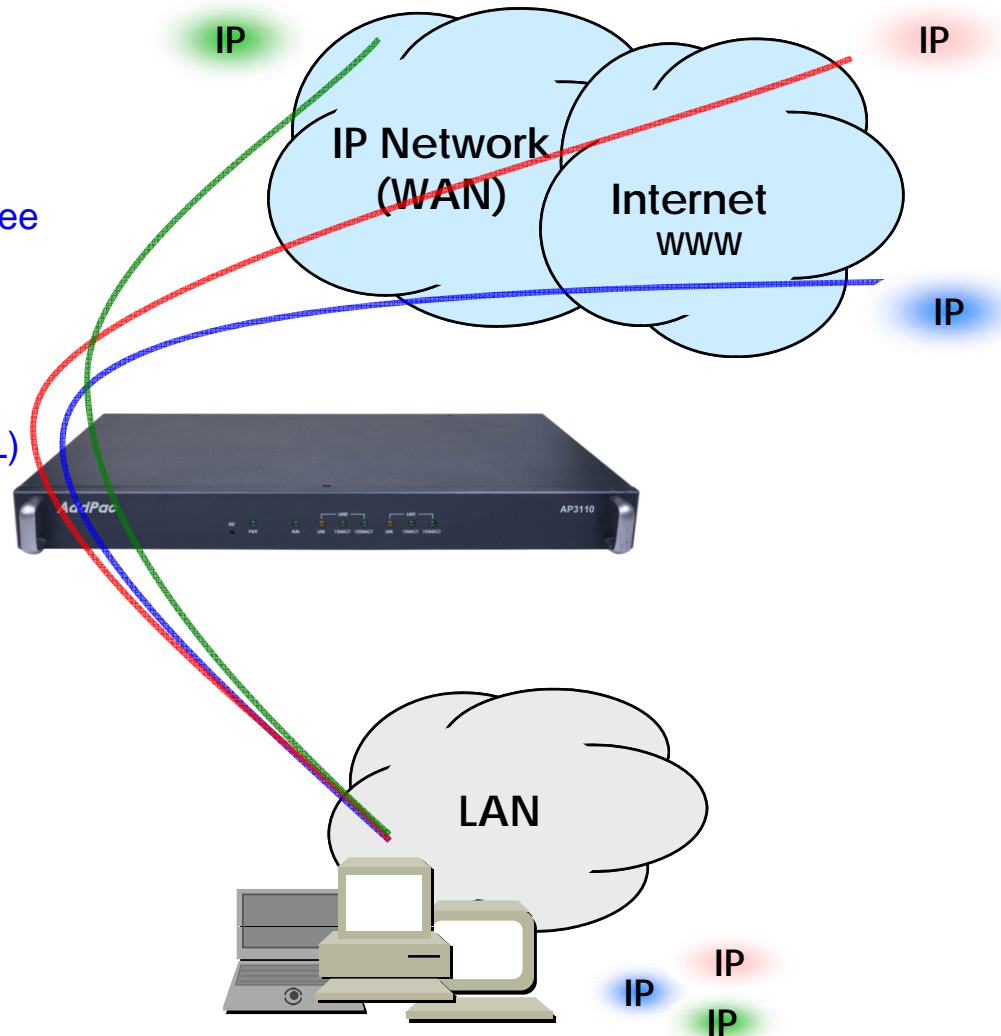
## AP3110 IP Voice Broadcasting Server

- IP Routing Protocols

- Multi-protocol Internetworking Services
- Static & Default IP routing
- 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

## AP3110 IP Voice 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

## AP3110 IP Voice 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

## AP3110 IP Voice Broadcasting Server

- Voice Codec for Two(2) Channel Audio Module

- G.711 Voice Codec
- G.726 Voice Codec
- G.729 Voice Codec
- G.723 Voice Codec

- RTP Protocols

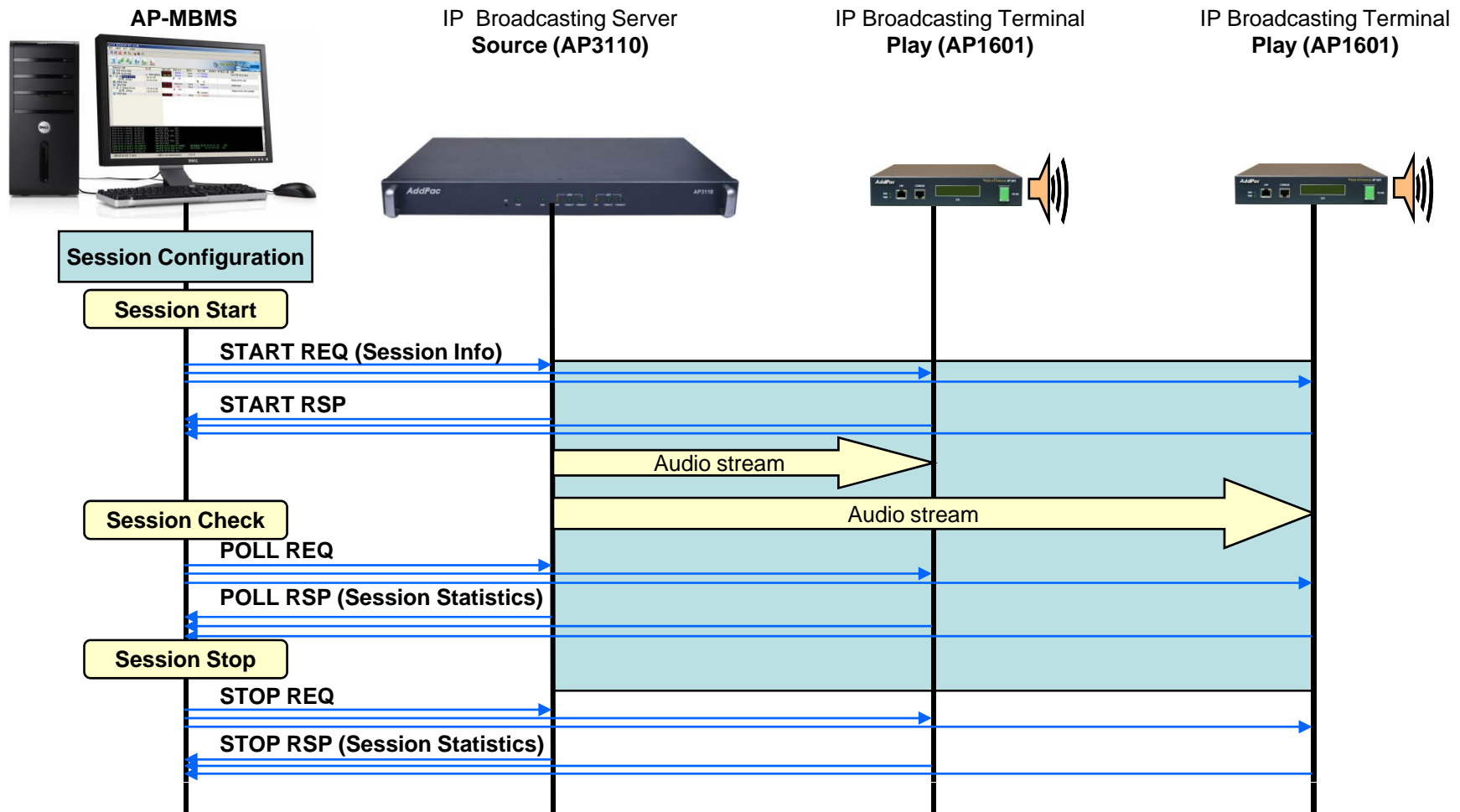
- Redundant RTP packet transmission in case of severe packet loss
- Dynamic jitter buffer management and RPT packet jitter and loss compensation with heuristic & DSP error concealment
- Static jitter buffer setting support
- Voice frame per RTP packet number control for each codec

IP Broadcasting



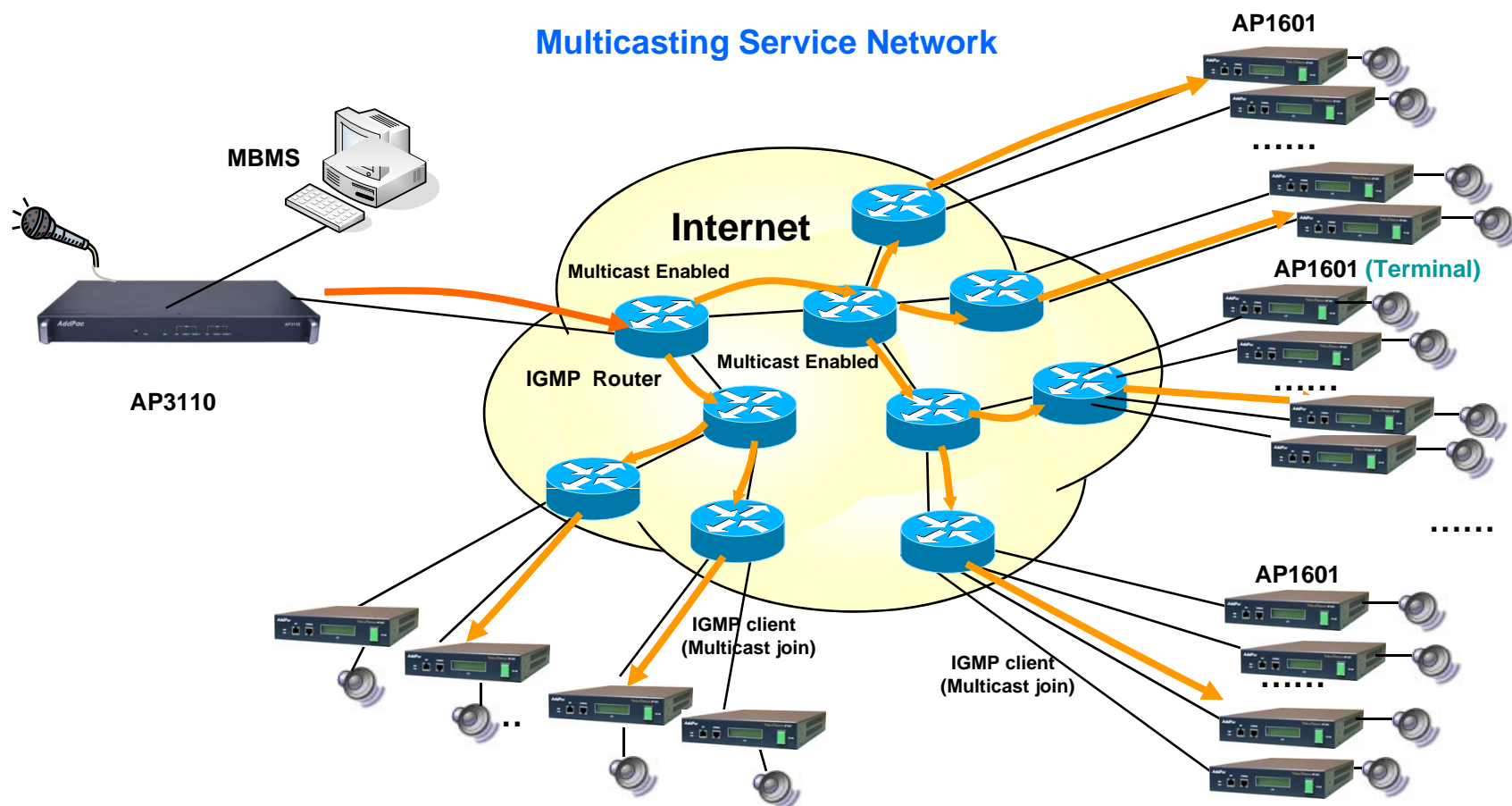
# IP Broadcasting Signal Flow

AP3110 IP Voice Broadcasting Server



# Multicast Service Network Diagram

AP3110 IP Voice Broadcasting Server

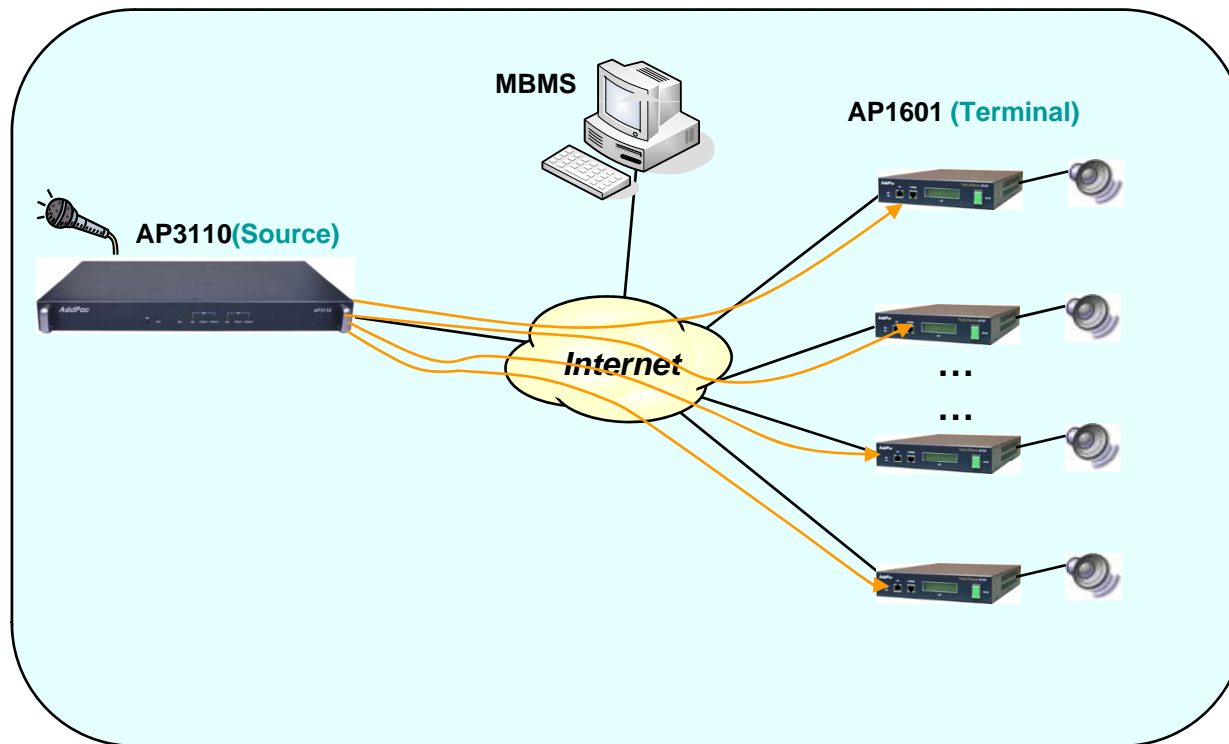


- Multicast protocol based such as **IGMP Protocol**
- Available to broadcast multi destination with single channel bandwidth

# Unicast Service Network Diagram

AP3110 IP Voice Broadcasting Server

## Unicasting Service Network

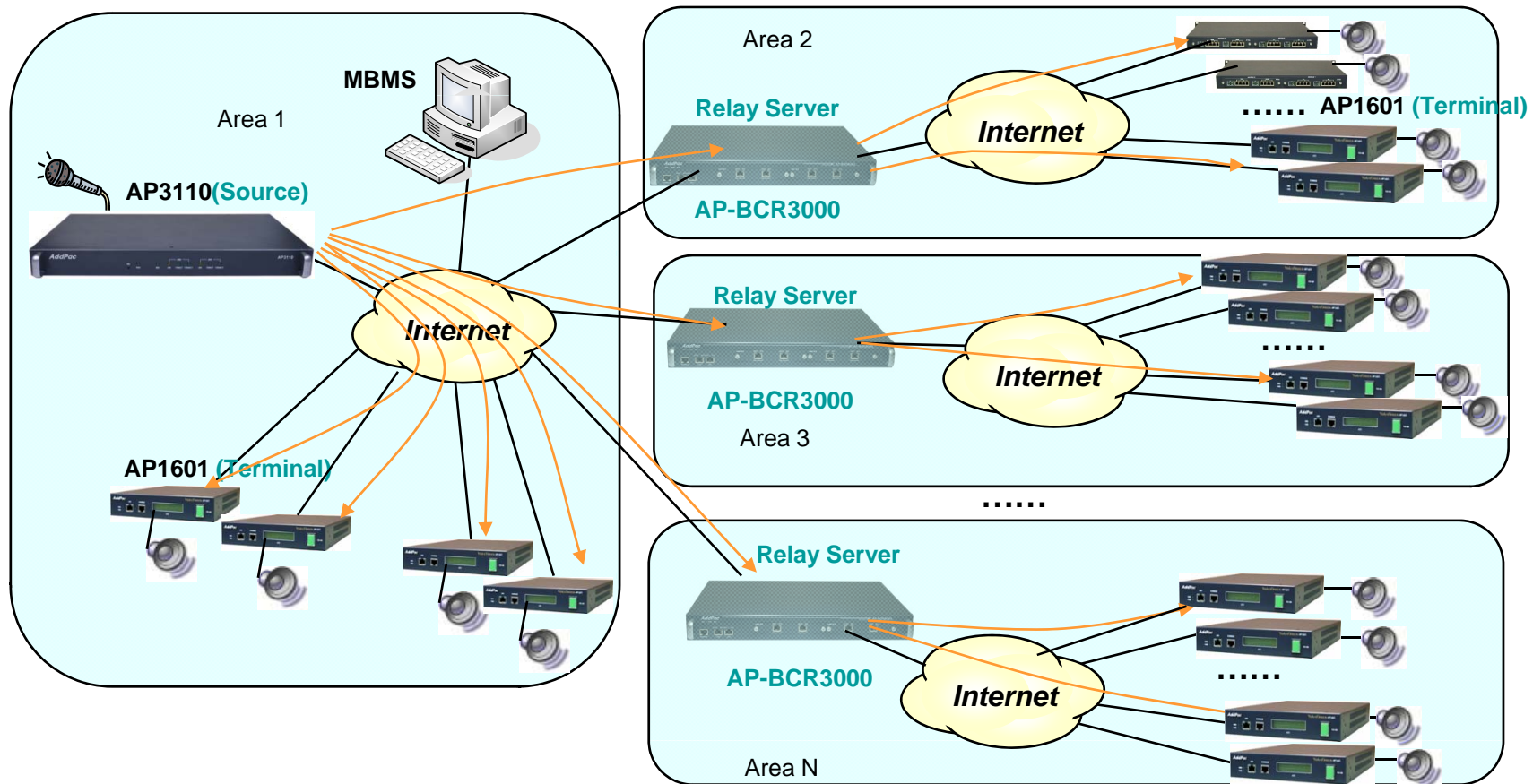




# Unicast Service Network Diagram

AP3110 IP Voice Broadcasting Server

## Unicasting Service Network



# MBMS 2.0 Software Features

AP3110 IP Voice 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

AP3110 IP Voice Broadcasting Server



# MBMS S/W Startup (Example)

## AP3110 IP Voice Broadcasting Server

학교 멀티미디어 방송 시스템

관리 사용자 보기 도움말

학교 멀티미디어 방송 시스템 AddPac

방송채널 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			
<input checked="" type="checkbox"/> 방송실 오디오 <input checked="" type="checkbox"/> 교무실1	172.16.7.55 172.16.19.101		Ok		Ok			방송실 오디오 서버
운동장 방송		ON-AIR	Unknown	None	None			운동장 방송
1학년 방송		ON-AIR	Fail	None	1 / 1 Normal			
<input checked="" type="checkbox"/> 방송실 비디오 <input checked="" type="checkbox"/> 교무실1	172.16.19.102 172.16.19.101		Fail		NoSESS			방송실 비디오 서버 (AP5840)
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)

AP3110 IP Voice Broadcasting Server

**방송 장비 관리**

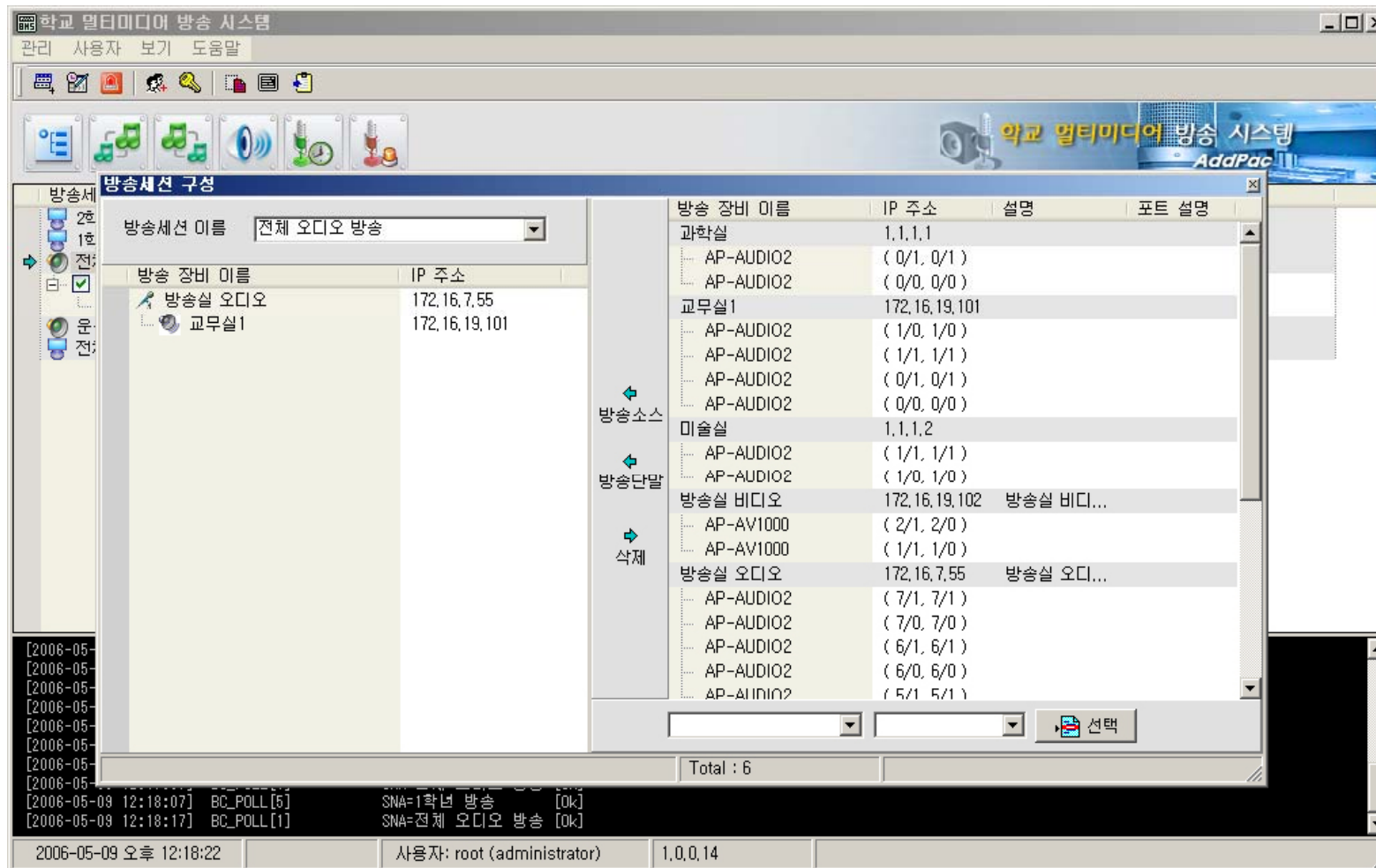
방송장비 이름 (방송 이름)	호스트 주소 (ON...	장비 모델명	입력포트	출력 포트	설명	포트 이름
과학실	1.1.1.1	AP1601				
교무실1	172.16.19.101	AP2520				
1학년 방송			1-1	1-1		
2학년 방송			0-1	0-1		
전체 오디오 방송			1-1	1-1		
미술실	1.1.1.2	AP2120				
방송실 비디오	172.16.19.102	AP5840			방송실 비디...	
1학년 방송			2-1	2-0		
2학년 방송			1-1	1-0		
전체 비디오 방송			1-1	1-0	학교 전체 비...	
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)

AP3110 IP Voice Broadcasting Server



# Broadcasting Scheduling (Example)

AP3110 IP Voice Broadcasting Server

The screenshot displays the '예약 방송 관리' (Broadcast Scheduling Management) window within the '학교 멀티미디어 방송 시스템' (School Multimedia Broadcasting System) interface. The window features a table of scheduled broadcasts and a log window at the bottom.

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	

The log window at the bottom shows the following messages:

```

[2006-05-09 12:05:00]
[2006-05-09 12:05:10]
[2006-05-09 12:05:20]
[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 of the window displays: 2006-05-09 오후 12:06:20, 사용자: root (administrator), 1.0.0.14.

# Event Log (Example)

## AP3110 IP Voice Broadcasting Server

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 검색

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

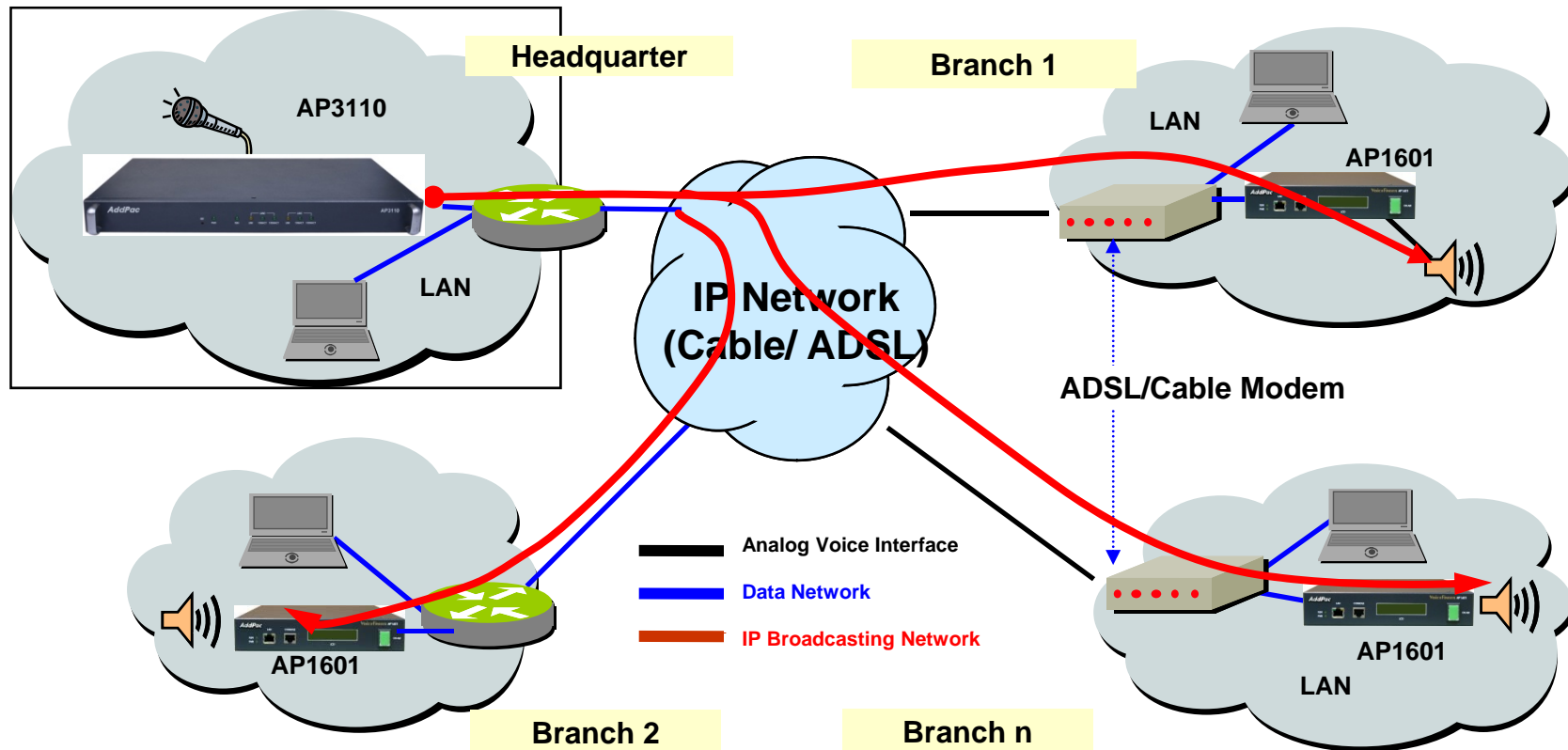


# IP Voice Broadcasting Solution

## AP3110 IP Voice Broadcasting Server

Audio Broadcasting Manager S/W	IP Broadcasting Server AP3110	IP 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>Embedded Hardware based Audio Codec. Two(2) Voice Codec Module Slots G.711, G.726, G.729 Voice Codec</p>	<p>1:N Audio Broadcasting Router. Gigabit Ethernet Support</p>	<p>Embedded Hardware based Audio Terminal One(1) Voice Codec Module. G.711, G.726, G.729 Voice Codec.</p>	<p>AMP. Power ON/OFF Switch Box. Background Noise Remove at OFF-AIR</p>

# Application Service



# Ordering Information

- **AP3110 IP Broadcasting Server Hardware**
  - AP3110 Main Body
  - RISC Microprocessor with High-end Programmable DSP Architecture
  - 2-ports 10/100Mbps Fast Ethernet and 1-port RJ45 RS-232C Console
  - AP-Audio2 Module, etc (Up to 2 slot)
  - Including Network Cable Set & Power Supply, etc.
- **Built-in APOS Internetworking Software for AP3110**
- **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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Sales and Marketing

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