

AP-ABS5000

IP High Quality Audio Broadcasting Server

High Performance IP based Multichannel IP High Quality Audio Broadcasting Server



AddPac

AddPac Technology

2010, Sales and Marketing

www.addpac.com

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Product Overview

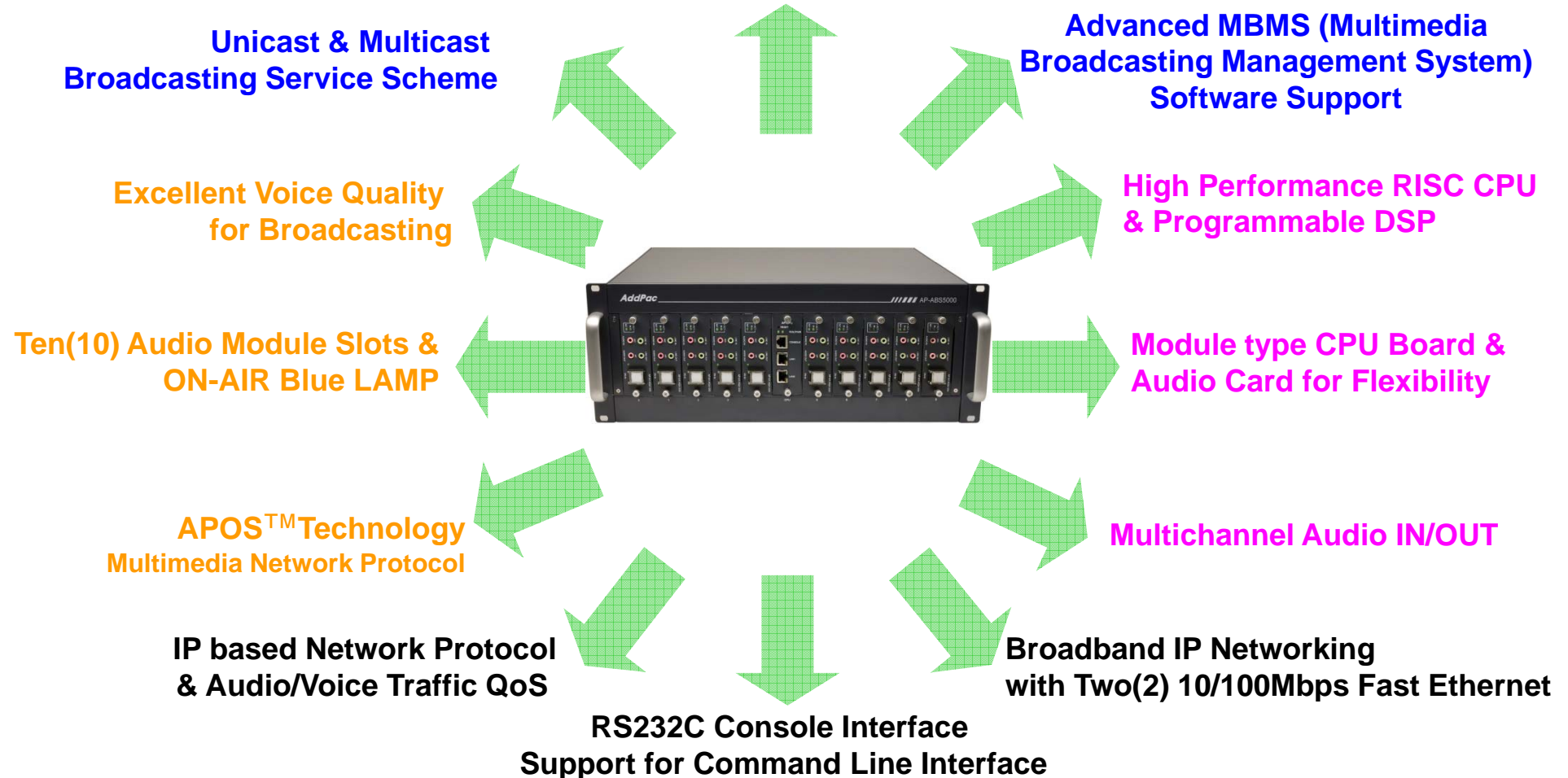
AP-ABS5000 IP High Quality Audio Broadcasting Server

- 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



Hardware Specification

AP-ABS5000 IP High Quality Audio Broadcasting Server

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

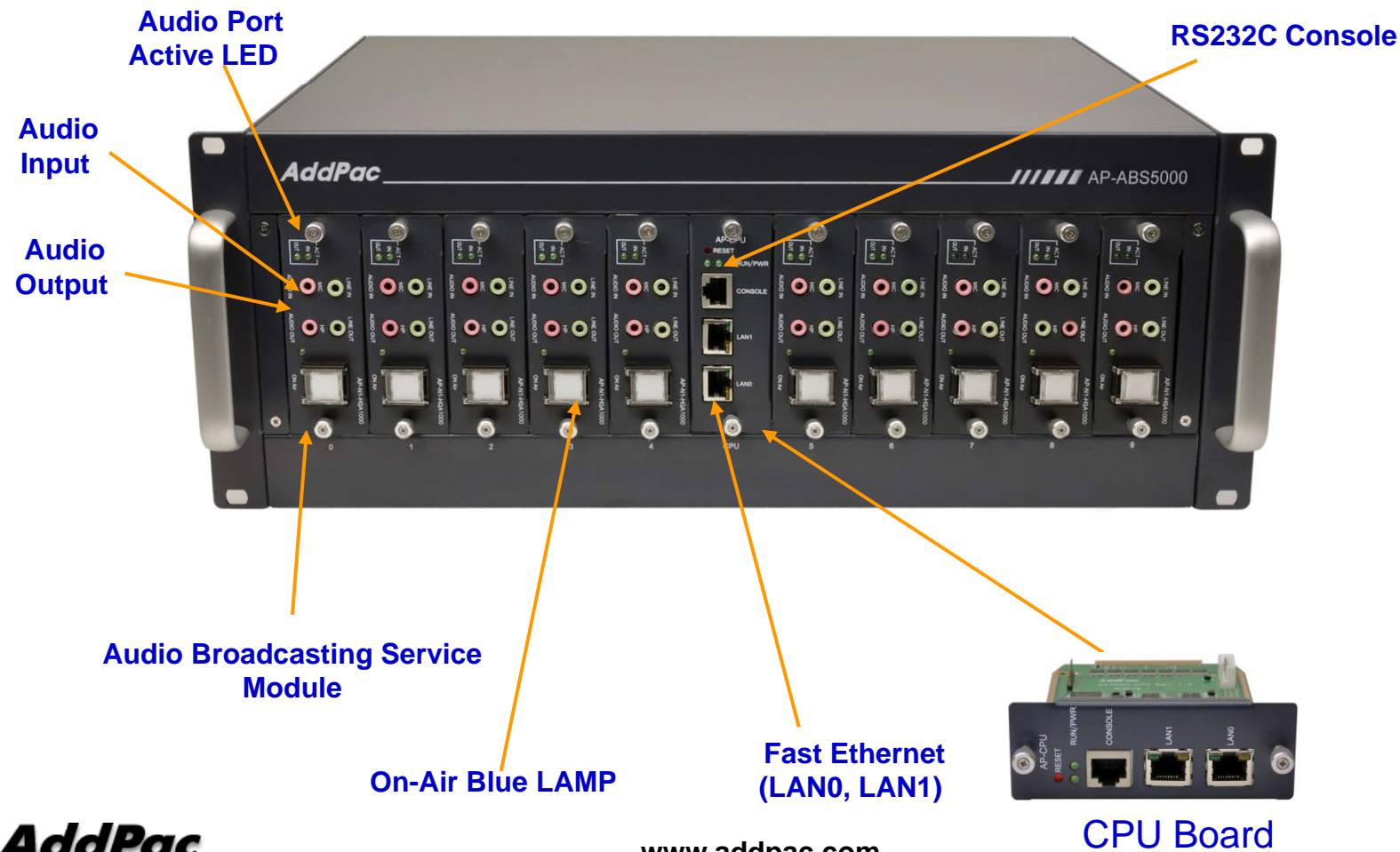
Hardware Specification

AP-ABS5000 IP High Quality Audio Broadcasting Server

RISC
CPU

High-end
DSP

AP-ABS5000 Front Side



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Hardware Specification

AP-ABS5000 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

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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
Switch

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Hardware Specification

AP-ABS5000 IP High Quality Audio Broadcasting Server

RISC
CPU

High-end
DSP

AP-ABS5000 Audio Modules

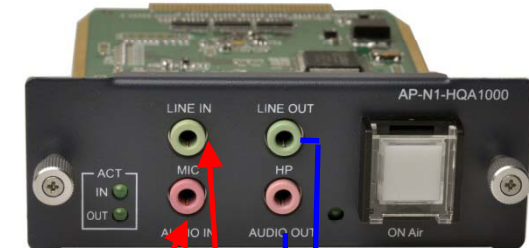
Audio Module Type (AP-N1-HQA1000)	Audio Module Features	Maximum Audio Channel in AP-ABS5000
 The image shows the AP-N1-HQA1000 audio module, a black rectangular device with a green circuit board visible on top. It features several ports: a green LINE IN, a red MIC, a green LINE OUT, a red HP (headphone) output, and a silver 3.5mm stereo jack. There are also status LEDs for 'ACT IN', 'OUT', and 'ON Air'. The model number 'AP-N1-HQA1000' is printed on the top right.	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

RISC
CPU

High-end
DSP



Connect with 1:2 Stereo Jack

Connect with 2:1 Stereo Jack

Direct MIC

- 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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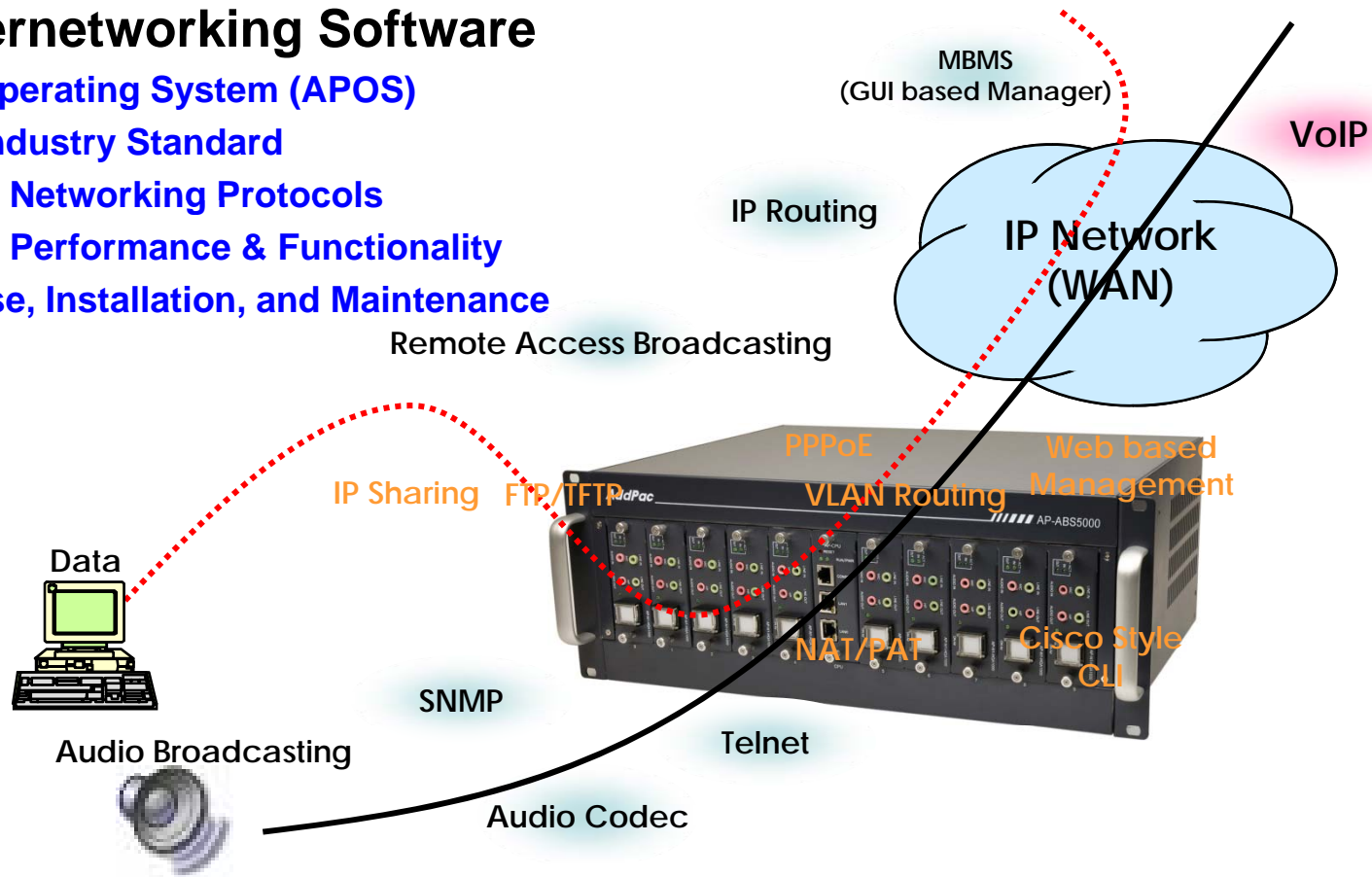
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APOS™ Service Features

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



APOS™ Service Features

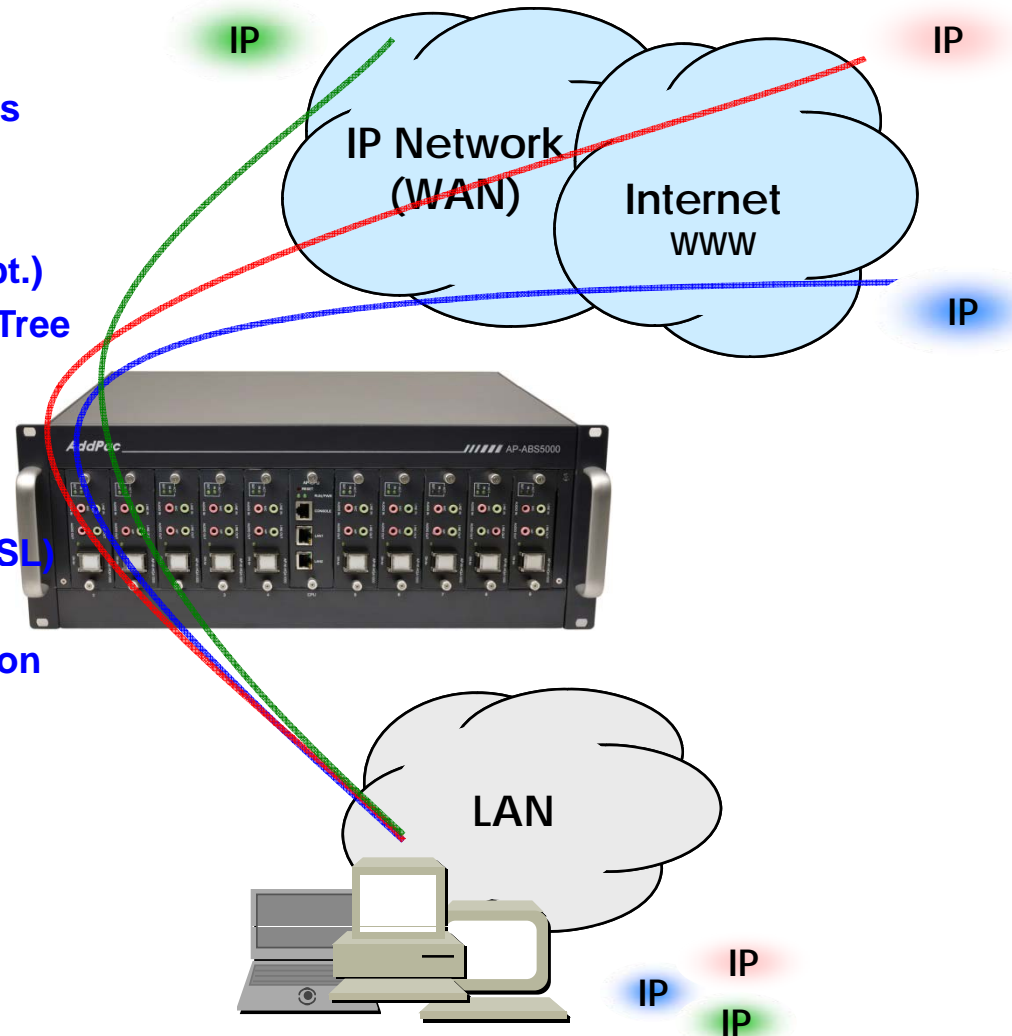
AP-ABS5000 IP High Quality Audio Broadcasting Server

- **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



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

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

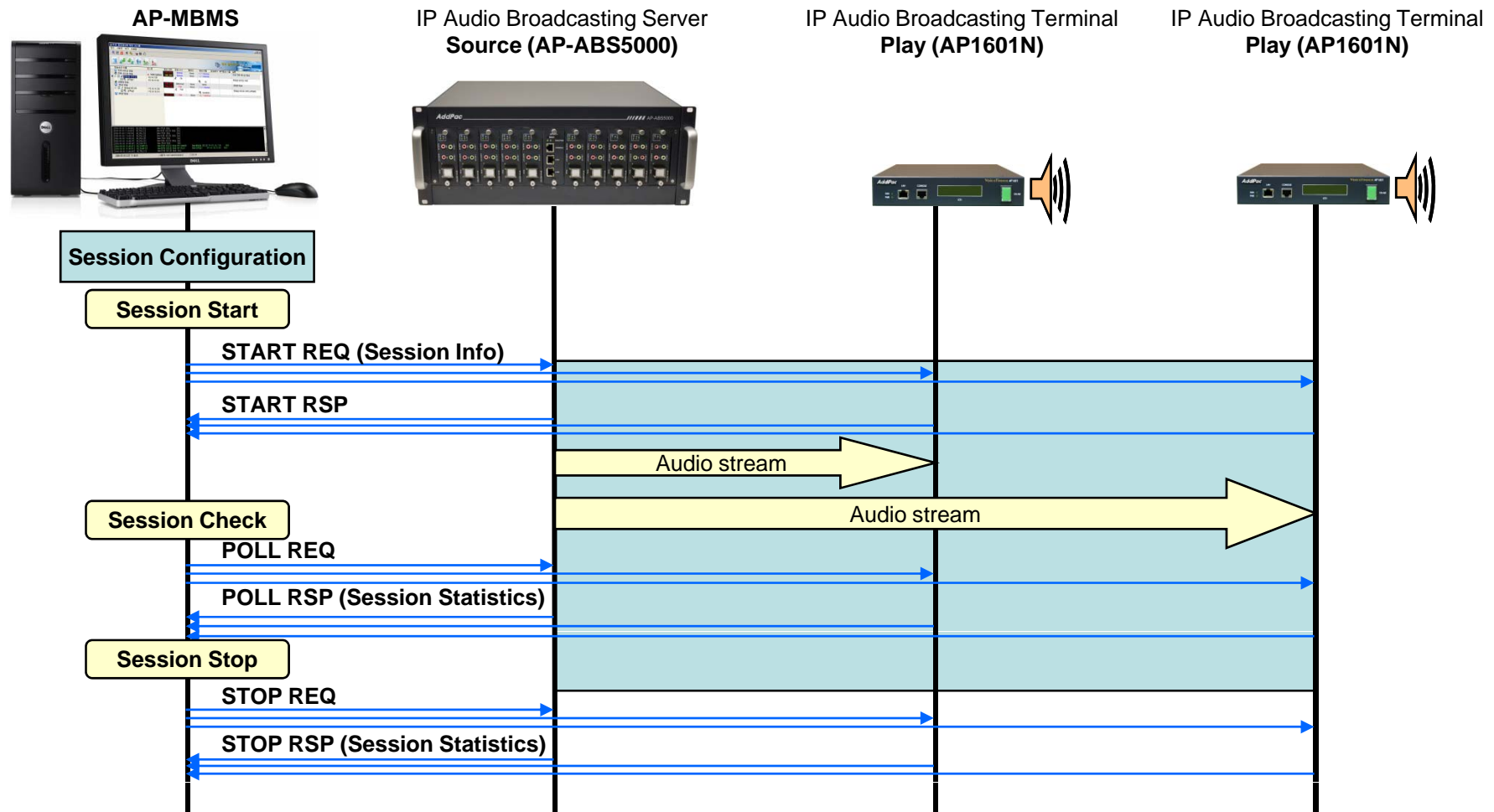
- RTP Protocols

- 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



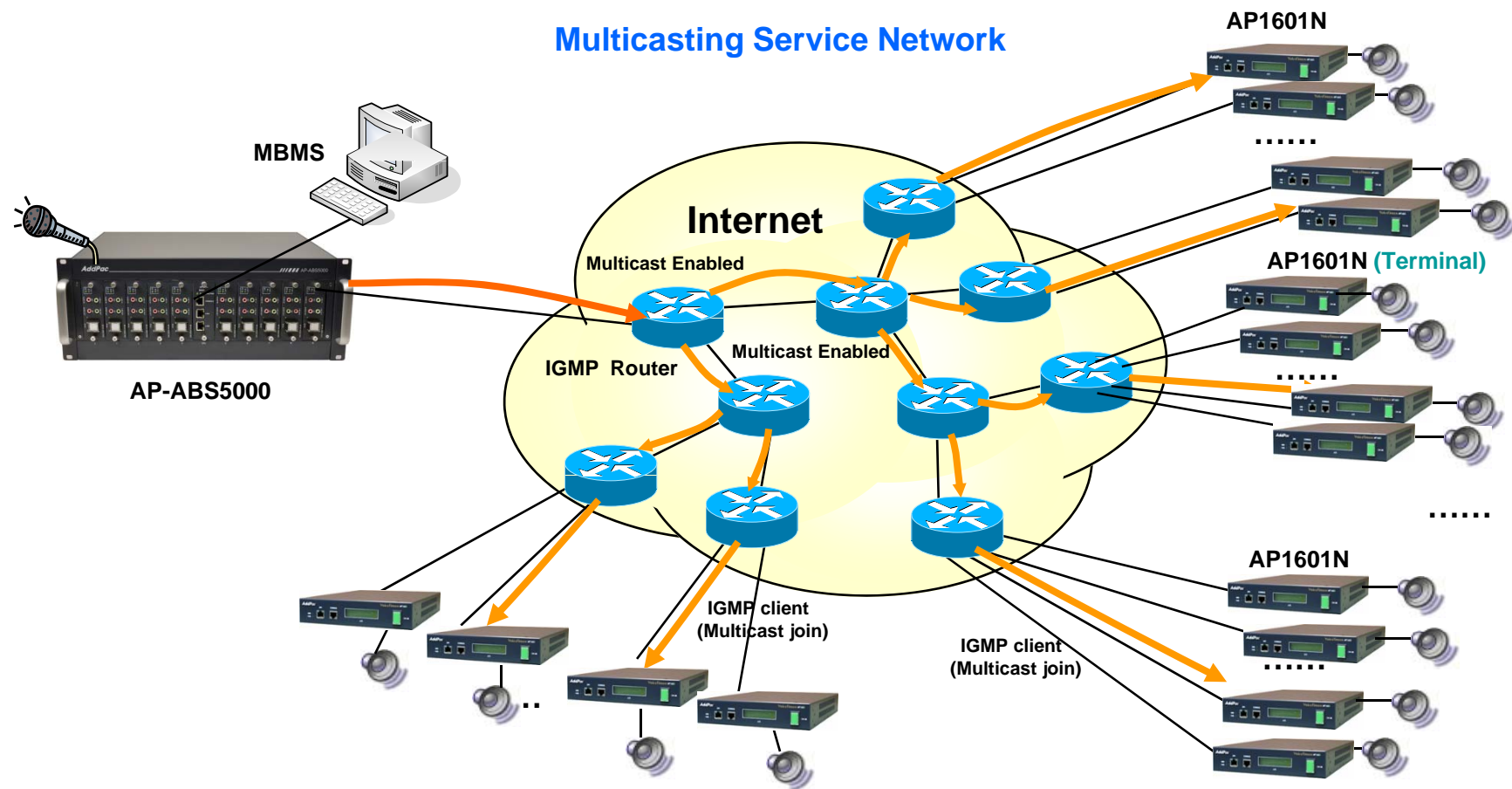
IP Audio Broadcasting Signal Flow

AP-ABS5000 IP High Quality Audio Broadcasting Server



Multicast Service Network Diagram

AP-ABS5000 IP High Quality Audio Broadcasting Server

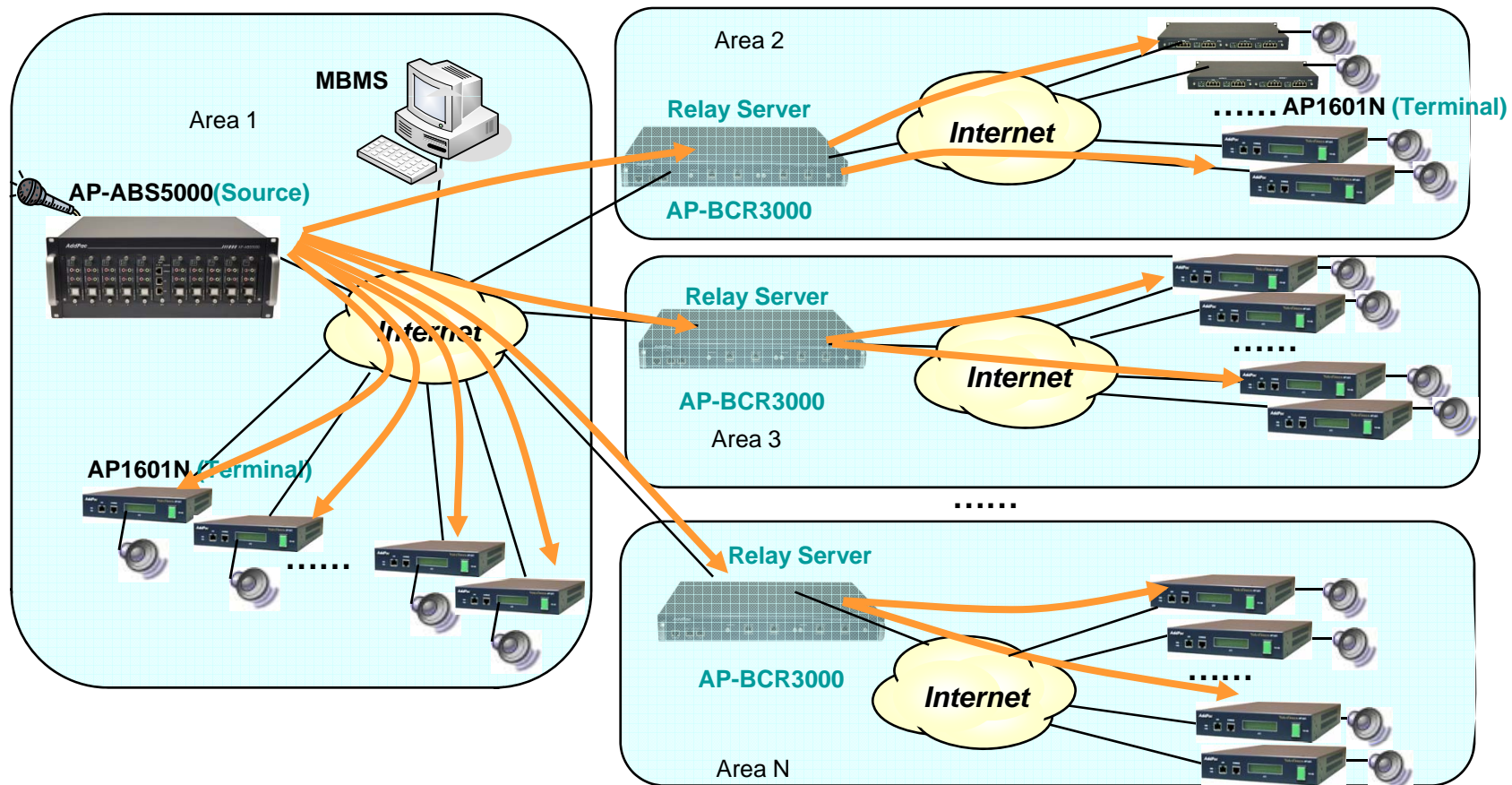


- Multicast protocol based such as **IGMP Protocol**
- Available to broadcast multi destination with single channel bandwidth

Unicast Service Network Diagram

AP-ABS5000 IP High Quality Audio Broadcasting Server

Unicasting Service Network



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

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		Ok		Ok			방송실 오디오 서버
운동장 방송	172.16.19.101							
1학년 방송		ON-AIR	Unknown	None	None			운동장 방송
<input checked="" type="checkbox"/> 방송실 비디오 <input checked="" type="checkbox"/> 교무실1	172.16.19.102		Fail	None	1 / 1 Normal			방송실 비디오 서버 (AP5840)
2학년 방송	172.16.19.101							
		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)

AP-ABS5000 IP High Quality Audio Broadcasting Server

방송장비 이름 (방송 이름)	호스트 주소 (ON, OFF)	장비 모델명	입력 포트	출력 포트	설명	포트 이름
과학실	1, 1, 1, 1	AP1601				
교무실	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

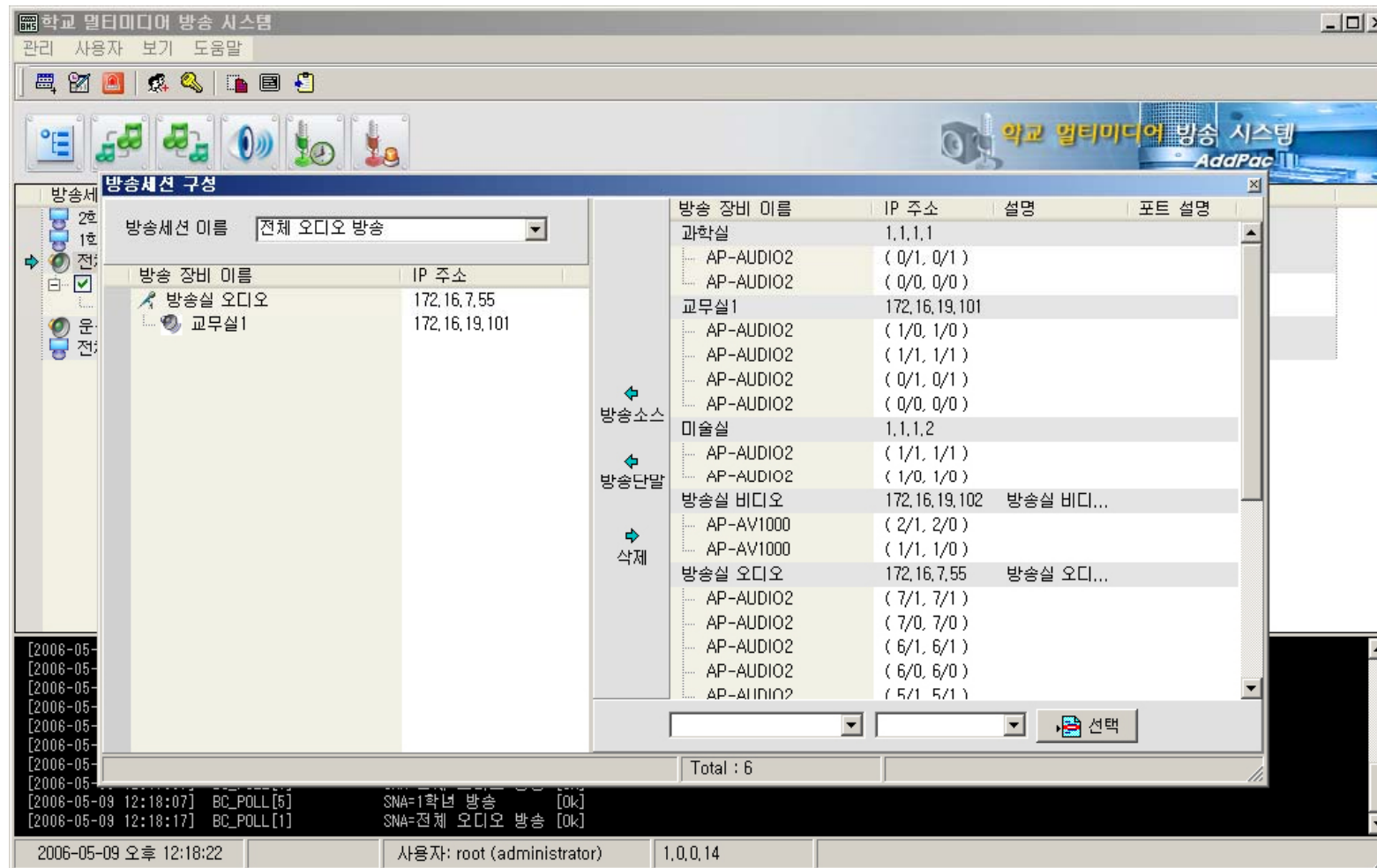
2006-05-09 12:00:32 ModifyEquipment [6] ENA=미술실 [Ok]

2006-05-09 12:00:36 BC_POLL [1] SNA=전체 오디오 방송 [Ok]

2006-05-09 오후 12:00:43 사용자: root (administrator) 1, 0, 0, 14

Broadcasting Configuration (Example)

AP-ABS5000 IP High Quality Audio Broadcasting Server



Broadcasting Scheduling (Example)

AP-ABS5000 IP High Quality Audio Broadcasting Server

The screenshot displays the '학교 멀티미디어 방송 시스템' (School Multimedia Broadcasting System) interface. The main window is titled '예약 방송 관리' (Reservation Broadcasting Management). It features a sidebar on the left with a tree view of broadcasting categories: '전체 비디오 본', '전체 오디오 본', '교무', '운동장 방송', '1학년 방송', '방송실', '교무', and '2학년 방송'. The main area contains a table of scheduled broadcasts.

방송채널 이름	예약 방송 이름	예약방송 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 interface, there is a status bar showing the current date and time: '2006-05-09 오후 12:06:20'. It also displays the user: '사용자: root (administrator)' and the version: '1.0.0.14'. A log window at the bottom left shows system events, including 'NewSchedule [8]', 'BC_POLL [5]', and 'BC_POLL [1]'.

Event Log (Example)

AP-ABS5000 IP High Quality Audio 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 비디오 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					

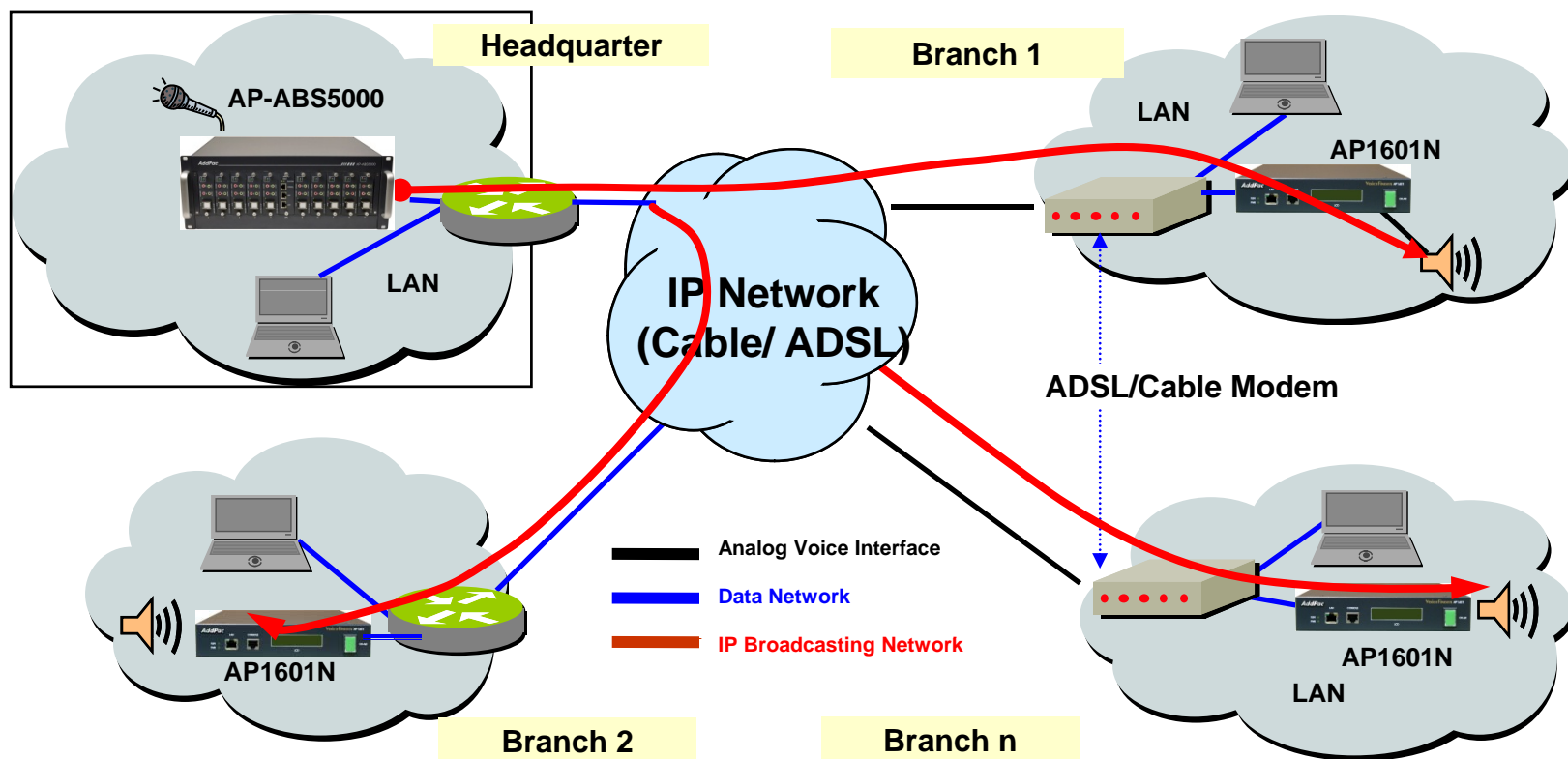
[2006-05-09 12:16:57] BC_POLL [1] SNA=전체 오디오 방송 [Ok]

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
				
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	Embedded 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

Application Service



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 to 10 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



Thank you!

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Sales and Marketing

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