

IP Audio Broadcasting Solution



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2011, Sales and Marketing

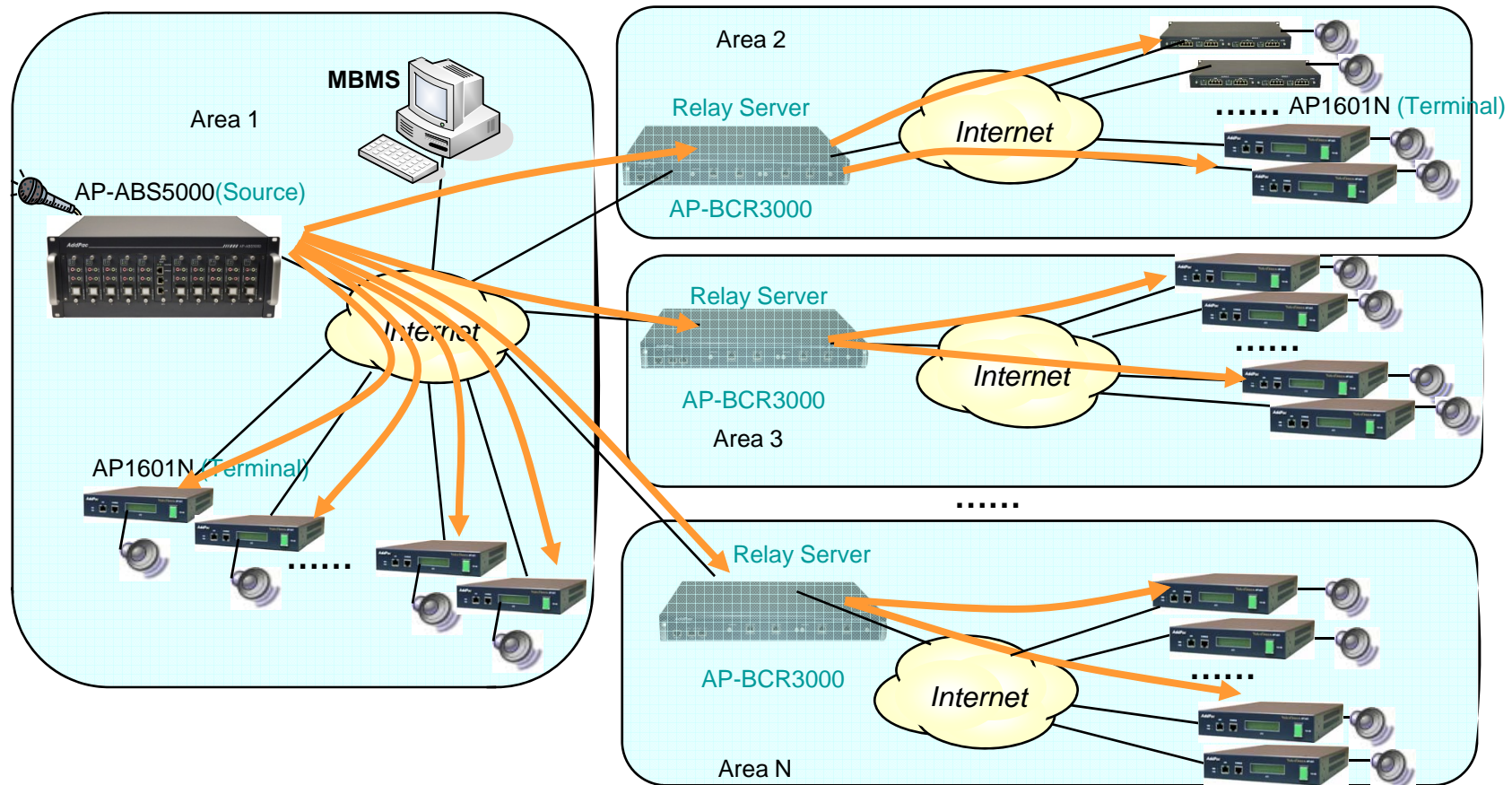
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Contents

- IP High Quality Audio Broadcasting Service Diagram
 - Unicast Method
 - Multicast Method
- IP High Quality Audio Broadcasting Solution
- Product Specifications
 - IP High Quality Audio Broadcasting Server : AP-ABS5000
 - Broadcasting Router : AP-BCR3000
 - IP Audio Broadcasting Terminal : AP1601N, AP1605
 - MBMS(Multimedia Broadcasting Management System) 2.0

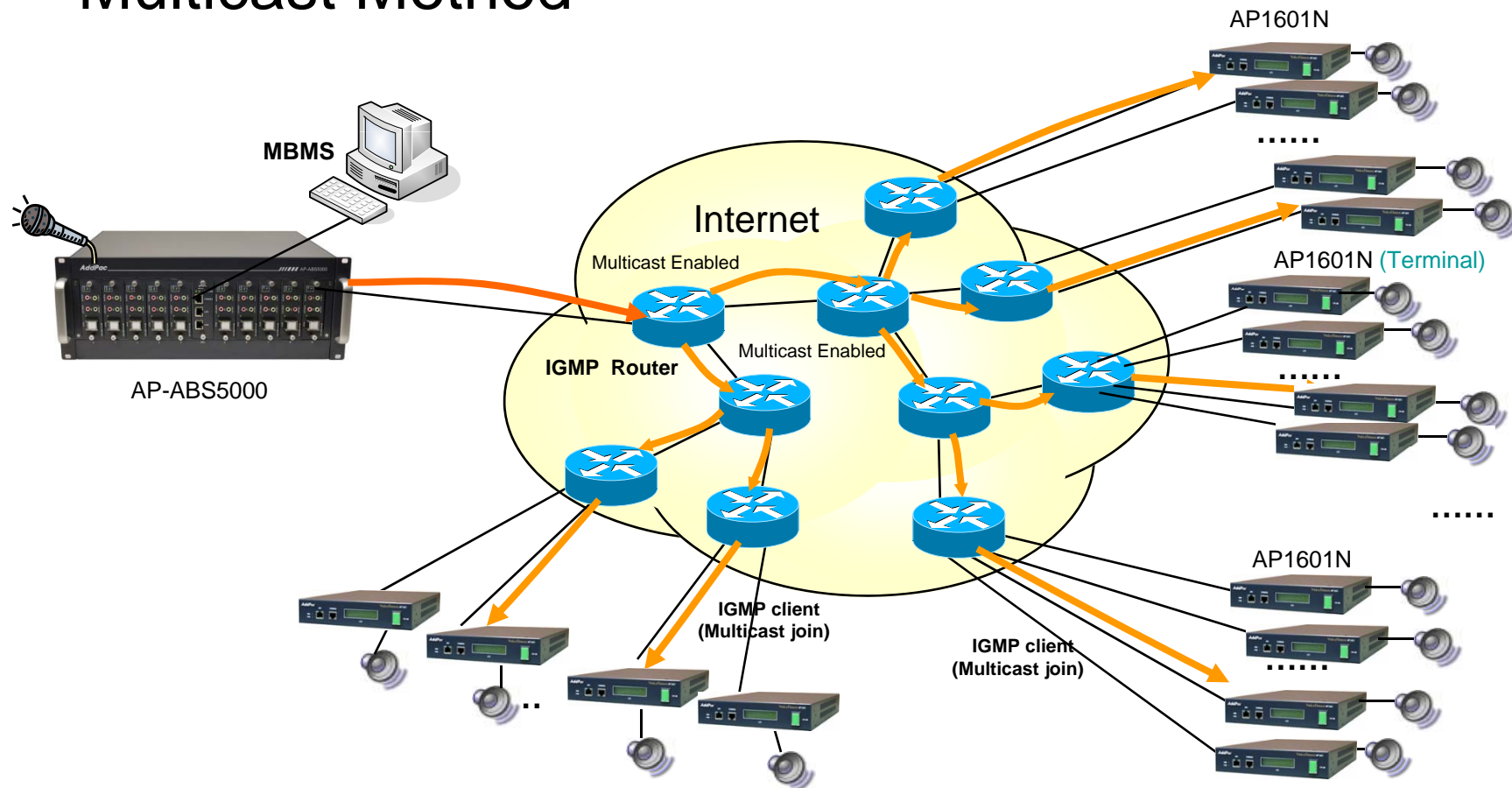
IP Audio Broadcasting Network Service Diagram

Unicast Method



IP Audio Broadcasting Network Service Diagram

Multicast Method



- Multicast protocol based such as [IGMP Protocol](#)
 - Available to broadcast multi destination with single channel bandwidth
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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 AP1605A
			
<p>Window based Audio Broadcasting Management Software.</p>	<p>Embedded Hardware based Audio Codec. Ten(10) HQ Audio Codec Module. MP3,G.711 Audio Codec.</p>	<p>1:N Audio Broadcasting Router. Gigabit Ethernet Support</p>	<p>Embedded Hardware based Audio Terminal. Volume Control Rotary Switch. One(1) HQ Audio Codec Module. Built-in AMP. MP3, G.711,Audio Codec.</p>



AP-ABS5000

IP High Quality Audio Broadcasting Server

Main Features

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 (MP3, G.711)
- 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

Hardware Specification

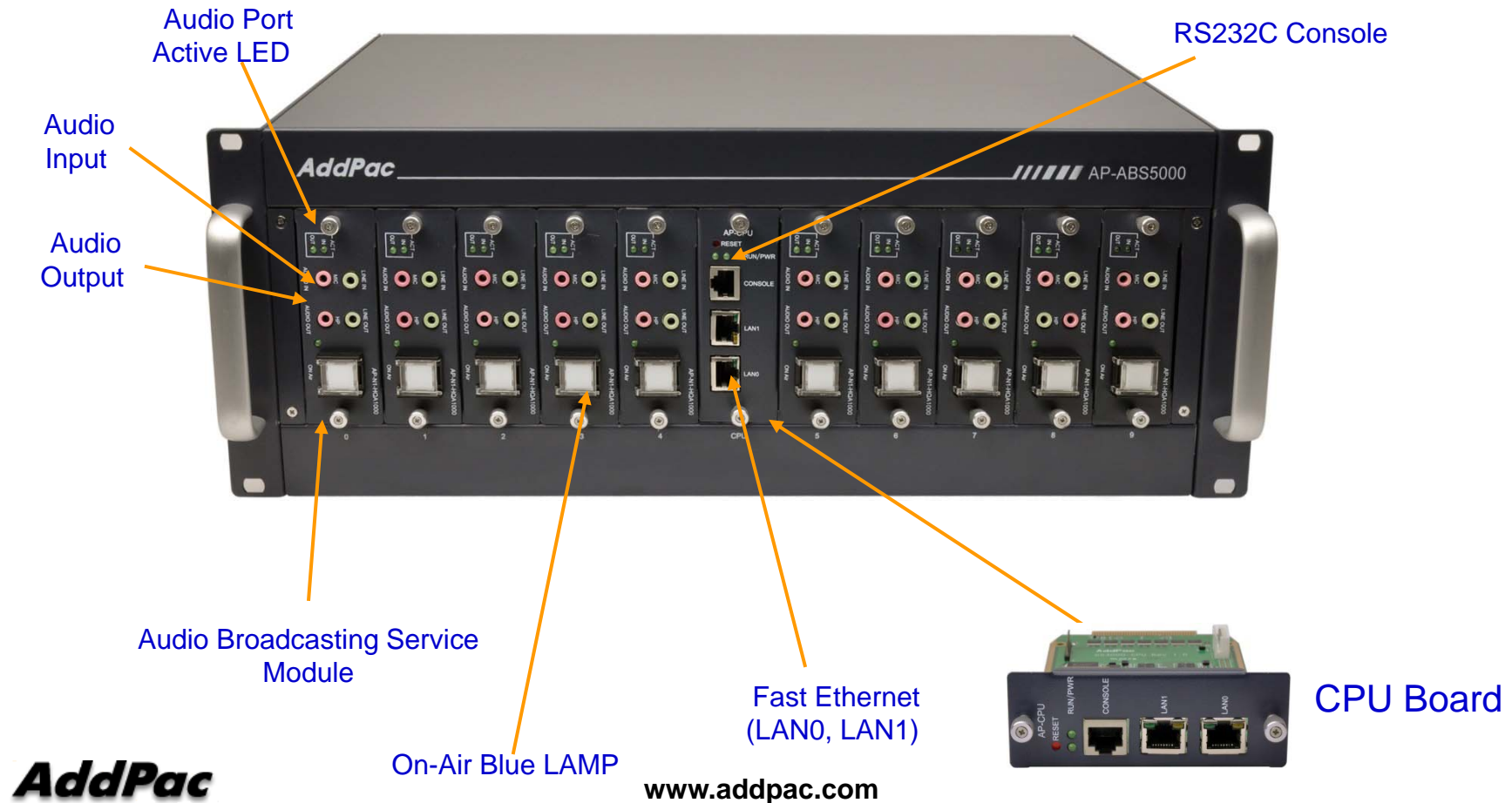
AP-ABS5000 IP High Quality Audio Broadcasting Server

- 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

AP-ABS5000 Front Side



Hardware Specification

AP-ABS5000 IP High Quality Audio Broadcasting Server

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-ABS5000 IP High Quality Audio Broadcasting Server

AP-ABS5000 Back Side




Power ON/OFF
Switch

Power Input
Switch

Hardware Specification

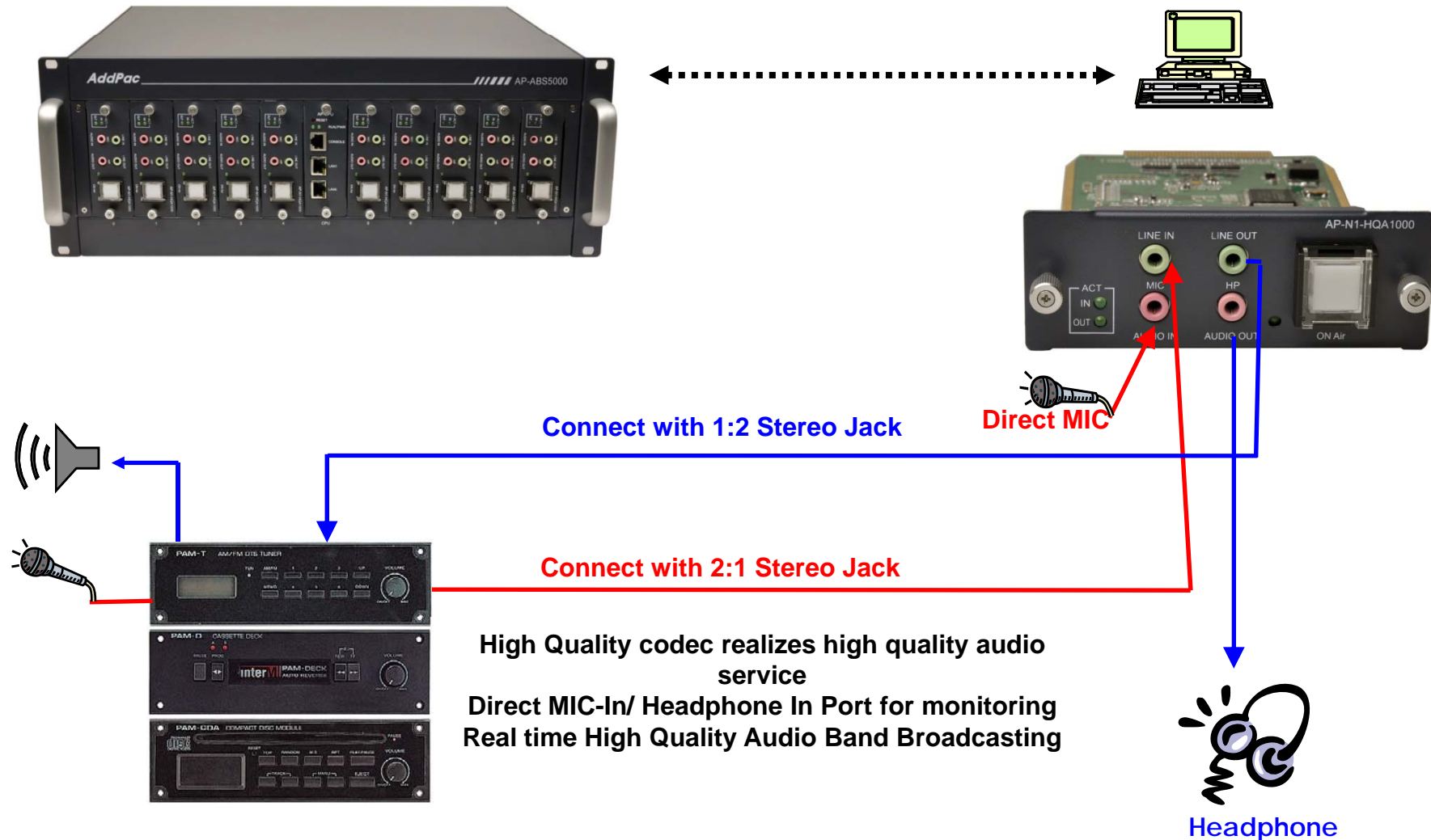
AP-ABS5000 IP High Quality Audio Broadcasting Server

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 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 red AUDIO OUT port. There is also an ON AIR indicator light and a small speaker on the right side.	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 MP3, G.711 Audio Codec	

Hardware Specification

AP-ABS5000 IP High Quality Audio Broadcasting Server





AP-BCR3000 Broadcasting Router

Main Features

AP-BCR3000 Broadcasting Router

- High-End RISC Microprocessor Architecture
- Embedded System and Real-time OS
- Two(2) Module Slots for Broadcasting Service
- Two(2) Gigabit Ethernet Interface Module
- IP based Audio/Video Broadcasting Solution
- IP based Broadcasting Relay Service for Unicast Service
- IP based Network Surveillance Solution
- High-performance Audio/Video Broadcasting Service
- Routing on Demand Service for Video Monitoring
- Firmware Upgradeable Architecture
- Broadcasting Solution with Outstanding Network Service Capability

Hardware Specification

AP-BCR3000 Broadcasting Router

RISC
CPU

- 64bit RISC Microprocessor Computing Power
- Main Chassis
 - Network Interface
 - Two(2) 10/100Mbps Fast Ethernet
 - One(1) RS-232C Console (RJ45)
- Two(2) Gigabit Ethernet Module Slot

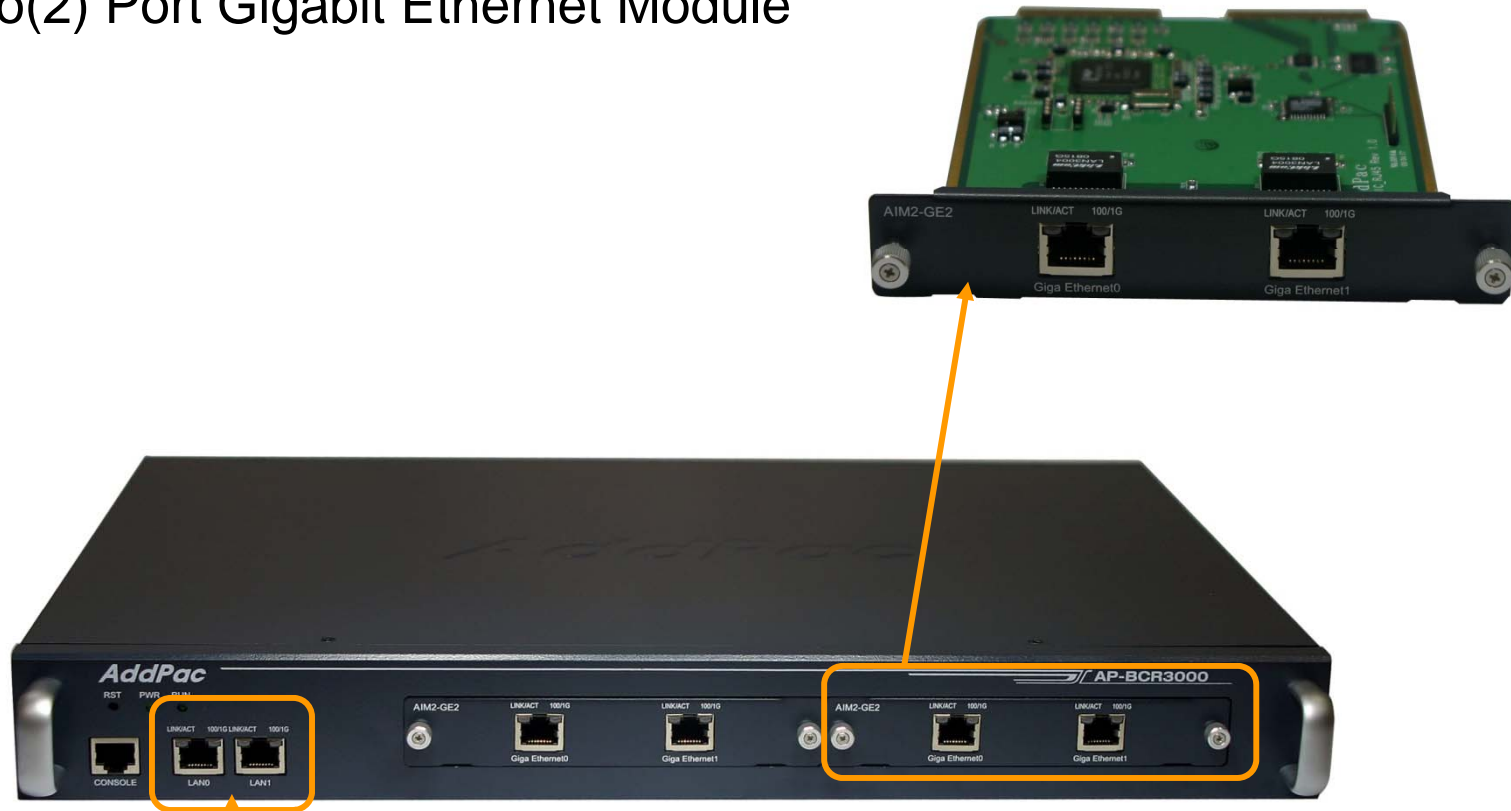


Hardware Specification

AP-BCR3000 Broadcasting Router

RISC
CPU

- Network Module (AP-AIM2-GE2)
 - Two(2) Port Gigabit Ethernet Module



Two(2) Fast Ethernet



High Quality Audio Broadcasting Terminals



AP1601N Audio Terminal

Main Features

AP1601N IP High Quality Audio Broadcasting Terminal

- IP based Audio Broadcasting Terminal Solution
- Hardware Architecture for Audio Broadcasting Terminal Service
- One(1) Module Slot for Audio Encoding & Decoding Service
- Remote Broadcasting Service at terminal side
- High Quality Audio Codec Support (MP3, G.711, etc)
- Unicast and Multicast Broadcasting Scheme
- Enhanced MBMS (Multimedia Broadcasting Management System) Support
- One(1) channel Audio IN/OUT Port
- On-AIR Blue LAMP
- High-Quality Audio/Voice Service
- Firmware Upgradeable Architecture
- Broadcasting Solution with Outstanding Network Service Capability

Hardware Specification

AP1601N IP High Quality Audio Broadcasting Terminal

RISC
CPU

High-end
DSP

- RISC Microprocessor Computing Power
- High-end Programmable DSP Hardware Architecture
- One(1) Module Slot for Audio Broadcasting Codec Module
- High Quality Audio Encoding/Decoding Service
- ON-AIR Blue LAMP
- High Quality Audio and Voice Interface
 - Stereo Audio Input Connector
 - Stereo Audio Output Connector
- Network Interface
 - One(1) 10/100Mbps Fast Ethernet (RJ45)
 - One(1) RS-232C Interface (RJ45) for Command Line Interface

Hardware Specification

AP1601N IP High Quality Audio Broadcasting Terminal

RISC
CPU

High-end
DSP

AP1601N Front Side



Fast Ethernet
(LAN0, LAN1)

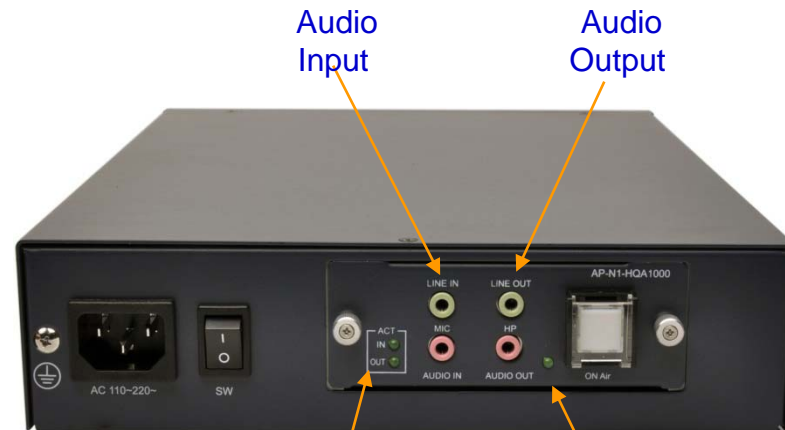
RS232C Console

Status LCD

On-Air Blue LAMP

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AP1601N Back Side



Audio
Input

Audio
Output

Audio Port
Active LED

Audio Broadcasting Service
Module

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Hardware Specification

AP1601N IP High Quality Audio Broadcasting Terminal

RISC
CPU

High-end
DSP

AP-N1-HQA1000 Board



Audio IN
(MIC, Line IN)

Audio OUT
(HP, Line OUT)

ON-AIR Blue LAMP



AP1605 Audio Terminal

Main Features

AP1605 IP High Quality Audio Broadcasting Terminal

- IP based Audio Broadcasting Terminal Solution
- Hardware Architecture for Audio Broadcasting Terminal Service
- One(1) Module Slot for Audio Encoding & Decoding Service
- Remote Broadcasting Service at terminal side
- High Quality Audio Codec Support (MP3, G.711, etc)
- Unicast and Multicast Broadcasting Scheme
- Enhanced MBMS (Multimedia Broadcasting Management System) Support
- One(1) channel Audio IN/OUT Port
- **Optional Built-In Digital AMP.**
- On-AIR Blue LAMP
- **Volume Control Rotary Switch at front panel**
- High-Quality Audio/Voice Service
- Firmware Upgradeable Architecture
- Broadcasting Solution with Outstanding Network Service Capability

Hardware Specification

AP1605 IP High Quality Audio Broadcasting Terminal

RISC
CPU

High-end
DSP

- RISC Microprocessor Computing Power
- High-end Programmable DSP Hardware Architecture
- One(1) Module Slot for Audio Broadcasting Codec Module
- High Quality Audio Encoding/Decoding Service
- ON-AIR Blue LAMP
- Rotary Volume Control Switch
- Option Module : AP-N3-HQA1000
 - One(1) 10/100Mbps Fast Ethernet (RJ45)
 - One(1) RS-232C Interface (RJ45) for Command Line Interface
 - Stereo Audio Input/Output Connector
- Option Module : AP-N3-HQA1000A
 - One(1) 10/100Mbps Fast Ethernet (RJ45)
 - One(1) RS-232C Interface (RJ45) for Command Line Interface
 - Stereo Audio Input/Output Connector
 - Built-in Audio AMP.

Hardware Specification

AP1605 IP High Quality Audio Broadcasting Terminal

RISC
CPU

High-end
DSP

AP1605 Front Side



Status LCD

Rotary Volume
Control Switch

On-Air Blue LAMP

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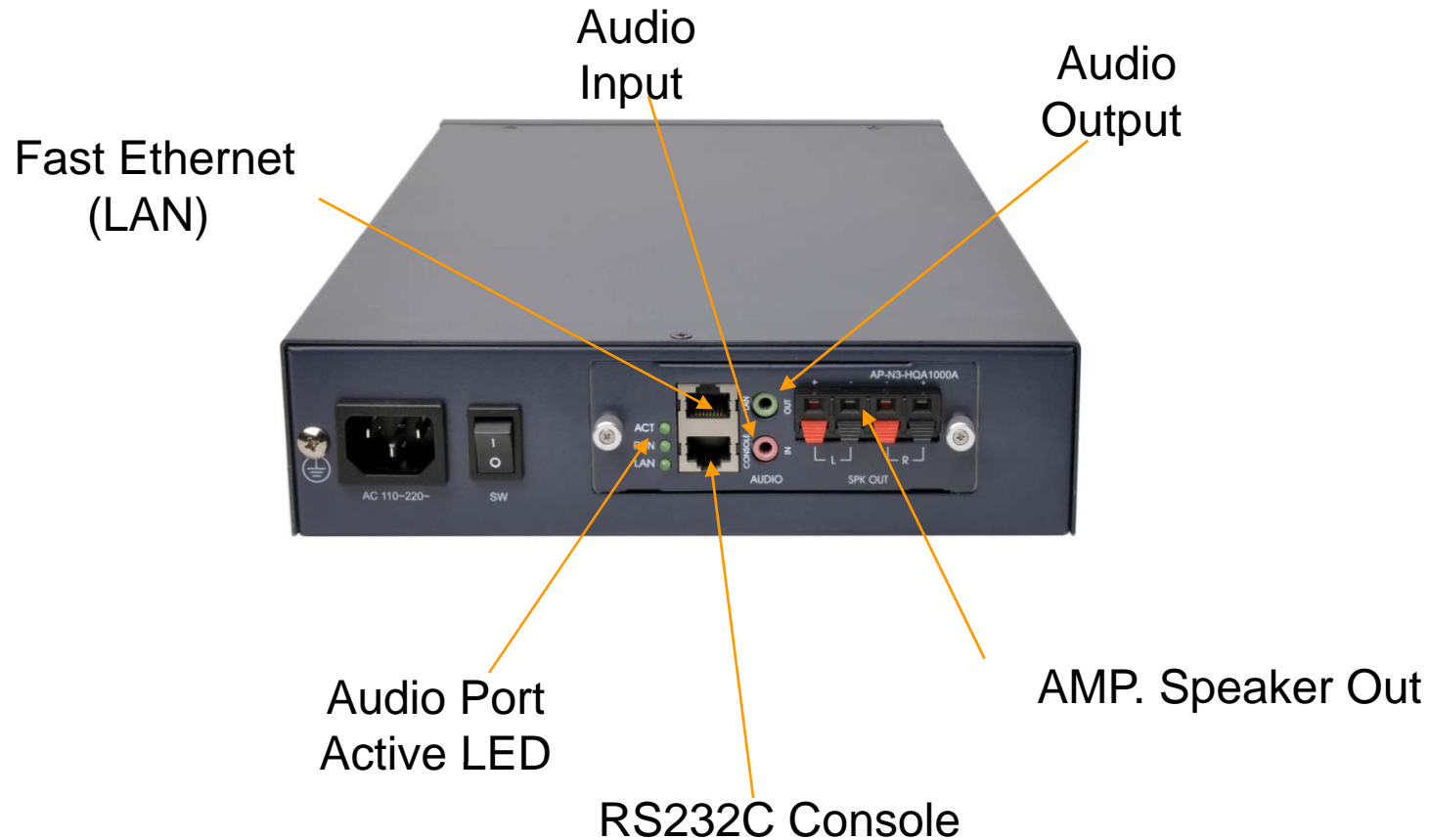
Hardware Specification

AP1605 IP High Quality Audio Broadcasting Terminal

RISC
CPU

High-end
DSP

AP1605 Back Side



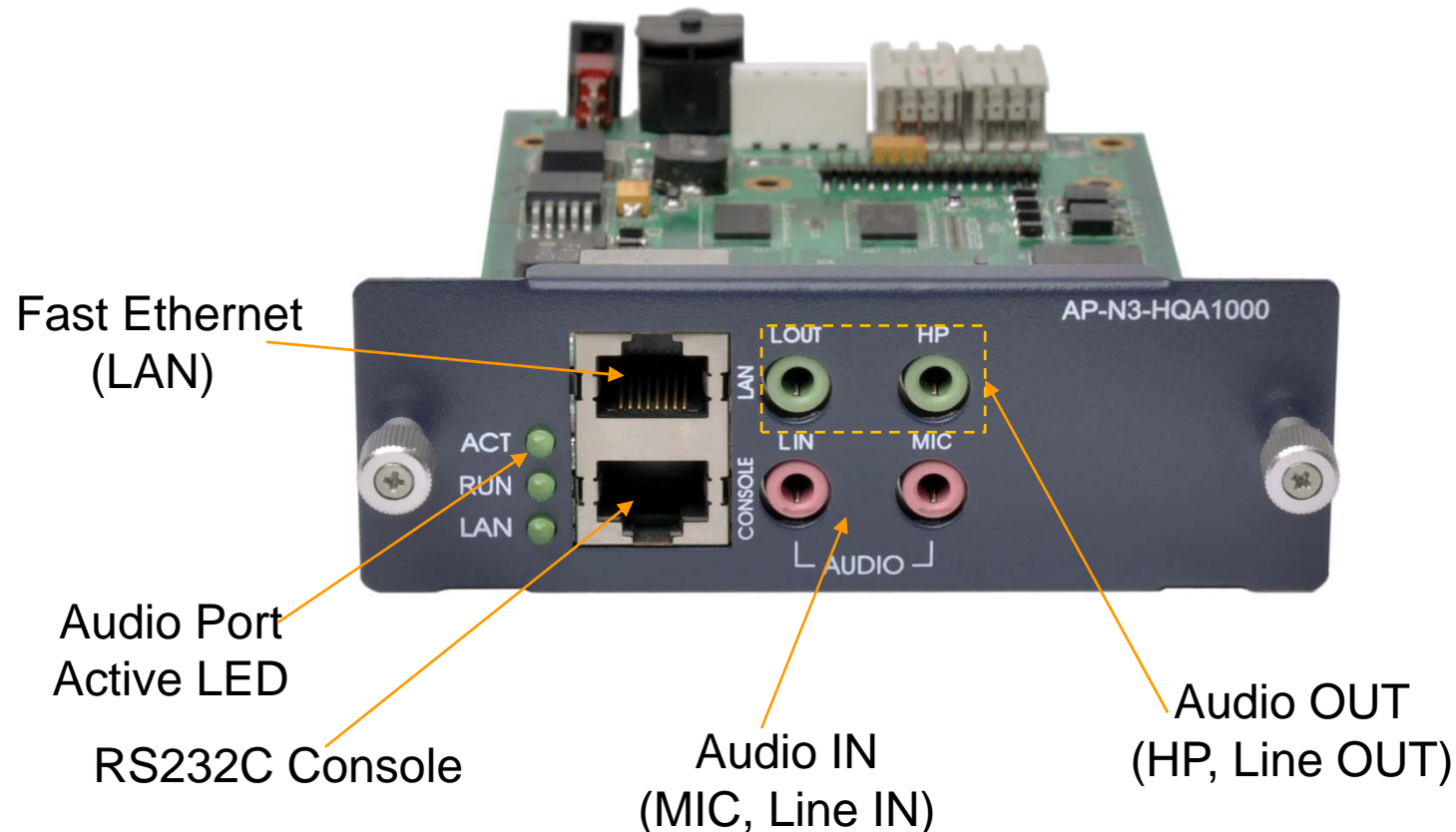
Hardware Specification

AP1605 IP High Quality Audio Broadcasting Terminal

RISC
CPU

High-end
DSP

AP-N3-HQA1000 Board



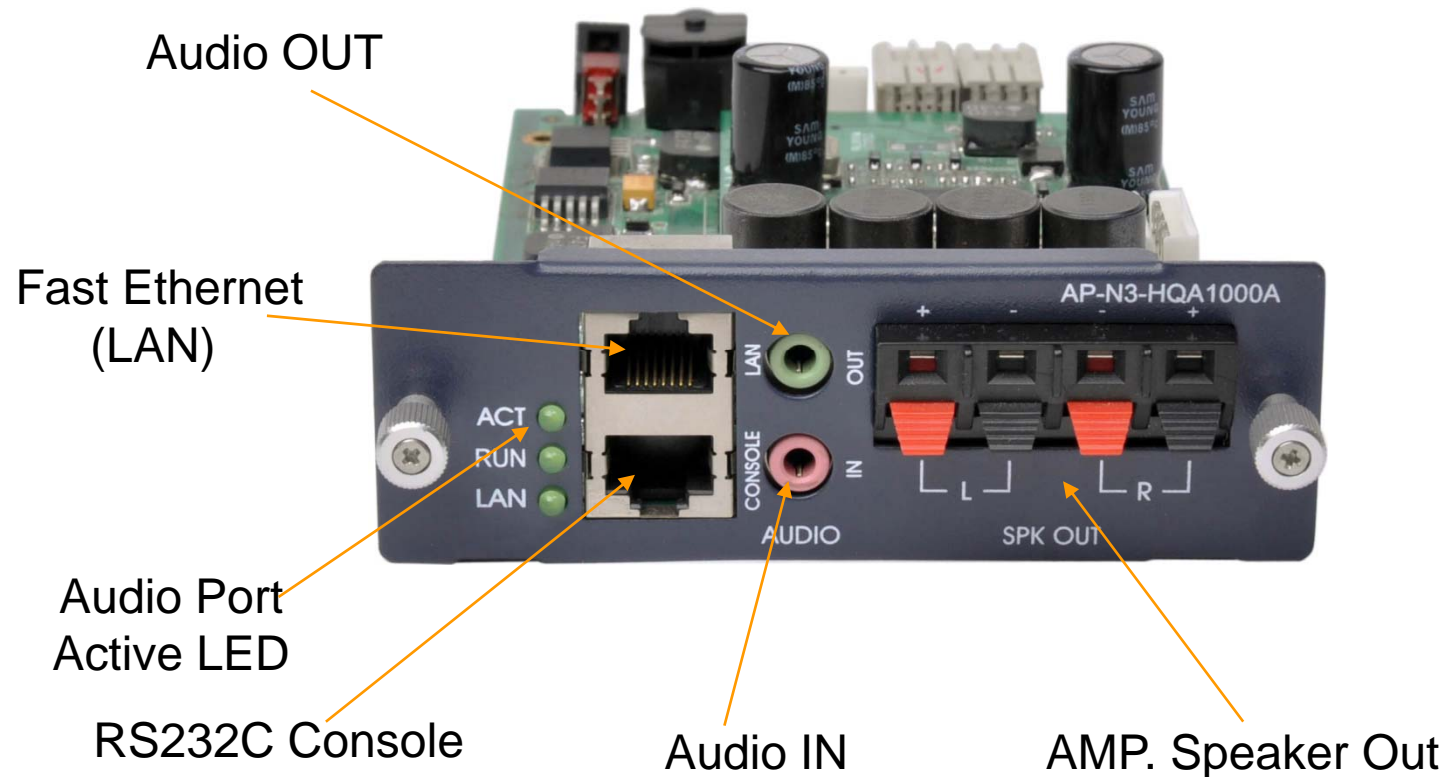
Hardware Specification

AP1605 IP High Quality Audio Broadcasting Terminal

RISC
CPU

High-end
DSP

AP-N3-HQA1000A Board



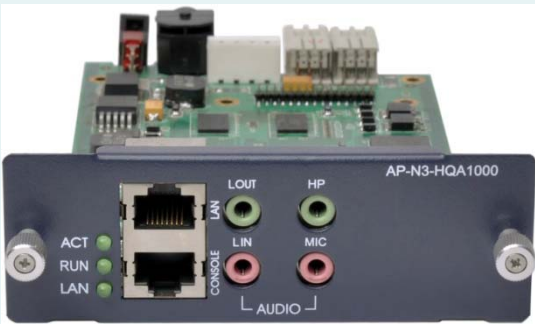
Hardware Specification

AP1605 IP High Quality Audio Broadcasting Terminal

RISC
CPU

High-end
DSP

AP1605 Audio Module

Audio Module Type	Audio Module Features
AP-N1-HQA1000	One(1)-Channel Audio In/Out Port
	One(1) Fast Ethernet Port
	One(1) RS232C Port
	Audio Encoding/Decoding Service
	Audio IN : MIC, Line IN
	Audio OUT : Headphone, Line OUT
	3.5mm Stereo JACK
	High Quality MP3, G.711, etc Audio Codec

Hardware Specification

AP1605 IP High Quality Audio Broadcasting Terminal

RISC
CPU

High-end
DSP

AP1605 Audio Module

Audio Module Type	Audio Module Features
AP-N1-HQA1000A	One(1)-Channel Audio In/Out Port
	One(1) Fast Ethernet Port
	One(1) RS232C Port
	Audio Encoding/Decoding Service
	Audio IN
	Audio OUT
	AMP. Built-in Speaker Out (Left, Right)
	4ohm Speaker : 50Watt
	8ohm Speaker : 30Watt
	High Quality MP3,G.711 Audio Codec

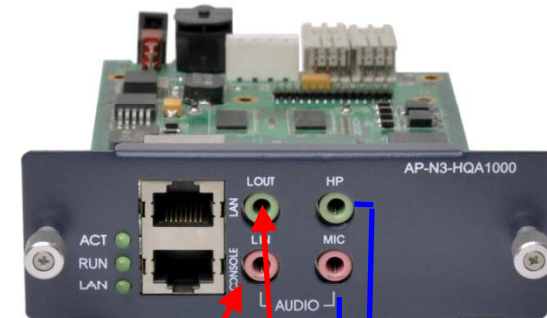


Hardware Specification

AP1605 IP High Quality Audio Broadcasting Terminal

RISC
CPU

High-end
DSP



Connect with 1:2 Stereo Jack

Connect with 2:1 Stereo Jack

Direct MIC

MP3, WMA codec realizes high quality audio service
Direct MIC-In/ Headphone In Port for monitoring
Real time High Quality Audio Band Broadcasting



Headphone

MBMS (Multimedia Broadcasting Management System) 2.0



Contents

- 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 S/W Startup (Example)

AP1605 IP Audio Broadcasting Terminal

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)

AP1605 IP Audio Broadcasting Terminal

학교 멀티미디어 방송 시스템

관리 사용자 보기 도움말

학교 멀티미디어 방송 시스템
AddPac

방송선 구성

방송선 이름: 전체 오디오 방송

방송 장비 이름	IP 주소	설명	포트 설명
과학실	1,1,1,1		
AP-AUDIO2	(0/1, 0/1)		
AP-AUDIO2	(0/0, 0/0)		
교무실1	172,16,19,101		
AP-AUDIO2	(1/0, 1/0)		
AP-AUDIO2	(1/1, 1/1)		
AP-AUDIO2	(0/1, 0/1)		
AP-AUDIO2	(0/0, 0/0)		
미술실	1,1,1,2		
AP-AUDIO2	(1/1, 1/1)		
AP-AUDIO2	(1/0, 1/0)		
방송실 비디오	172,16,19,102	방송실 비디...	
AP-AV1000	(2/1, 2/0)		
AP-AV1000	(1/1, 1/0)		
방송실 오디오	172,16,7,55	방송실 오디오...	
AP-AUDIO2	(7/1, 7/1)		
AP-AUDIO2	(7/0, 7/0)		
AP-AUDIO2	(6/1, 6/1)		
AP-AUDIO2	(6/0, 6/0)		
AP-AUDIO2	(5/1, 5/1)		

방송소스

방송단말

삭제

선택

Total : 6

2006-05-09 오후 12:18:22 사용자: root (administrator) 1,0,0,14

Broadcasting Scheduling (Example)

AP1605 IP Audio Broadcasting Terminal

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	

Event Log (Example)

AP1605 IP Audio Broadcasting Terminal

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



Thank you!

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