



IP based Broadcasting System

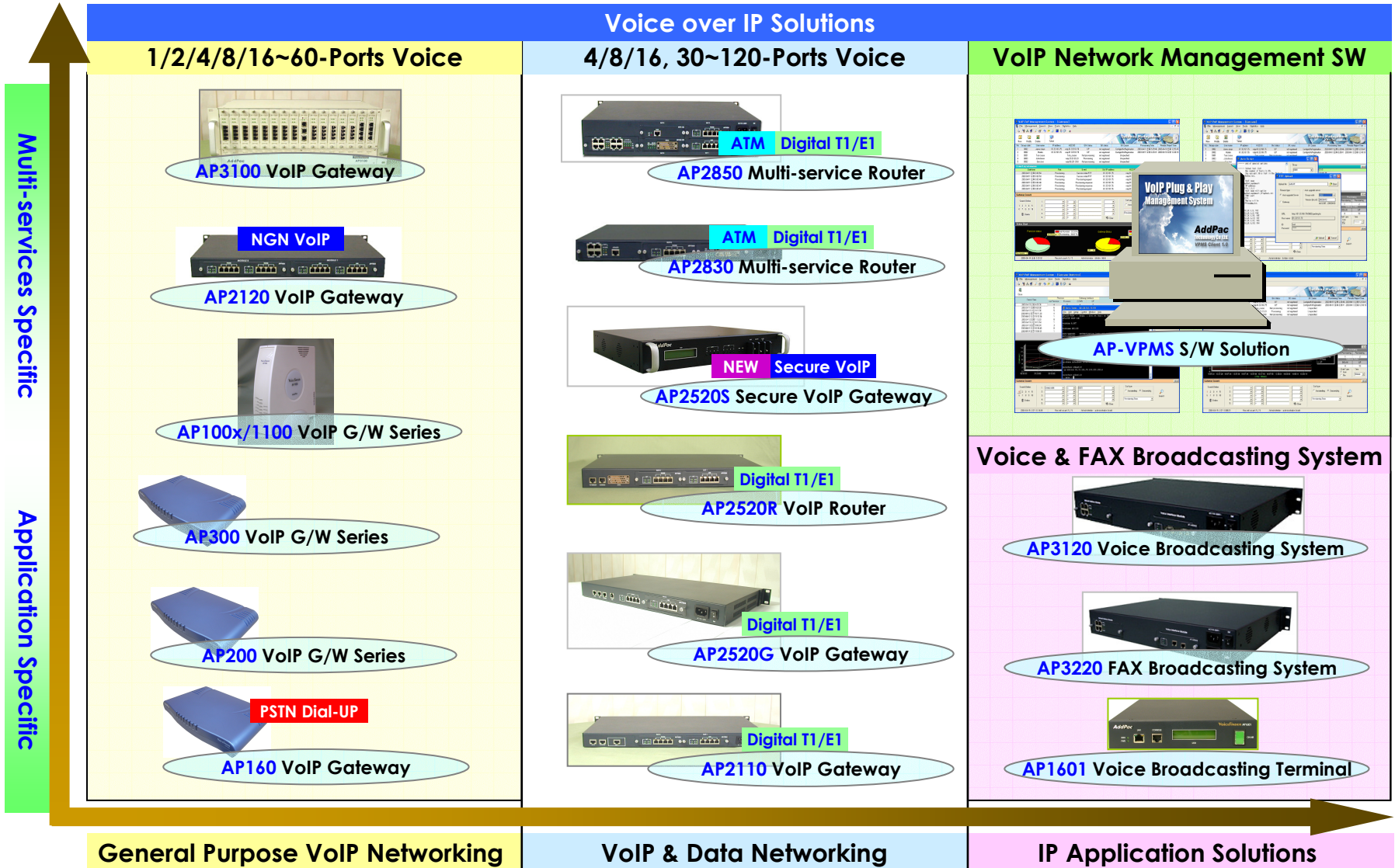


Technical Sales and Marketing

AddPac Technology

www.addpac.com

AddPac VoIP Products Road-Map

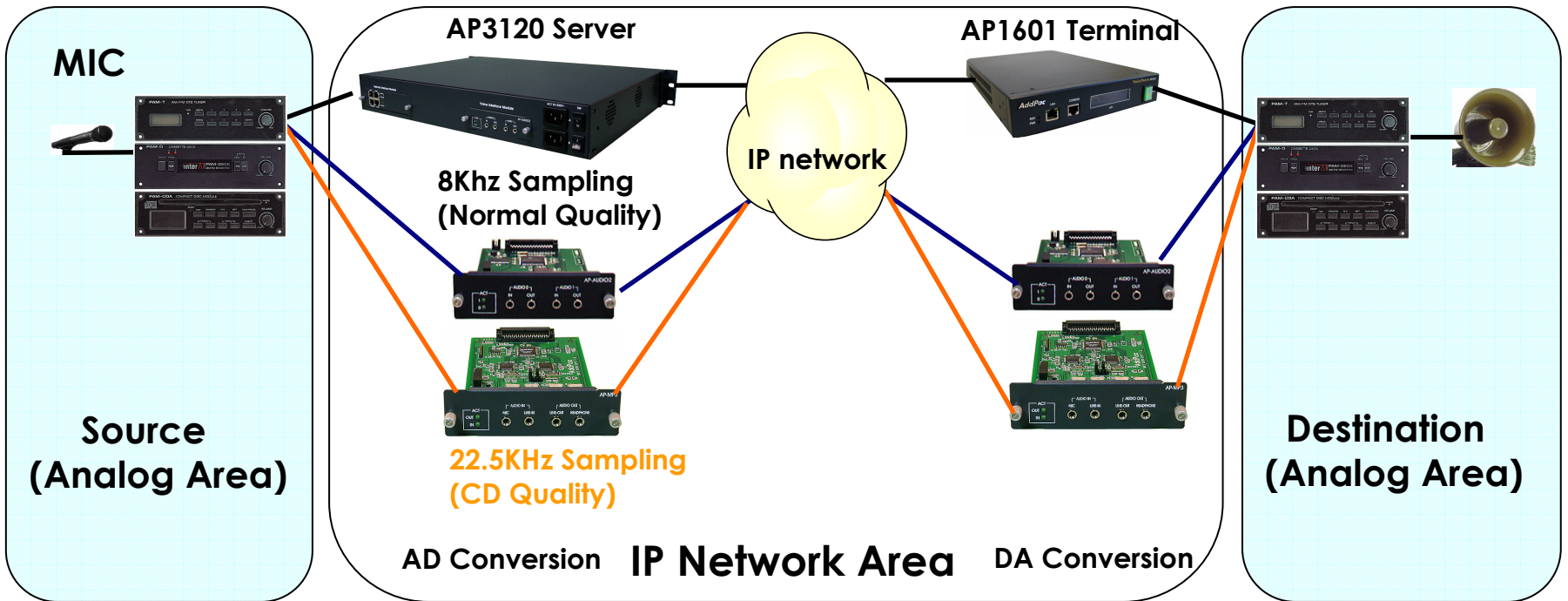


Contents

- ❖ What is IP Audio Broadcasting ?
- ❖ AddPac IP Audio Broadcasting Solution
- ❖ APOS™ for AP1601 IP Audio Broadcasting Terminal
- ❖ AP1601 System Overview
- ❖ AP1601 System Configuration
- ❖ AP1601 Management Scheme
- ❖ AP1601 Optional Components
- ❖ Network Configuration & Case Study
- ❖ Appendix

What is IP Audio Broadcasting ?

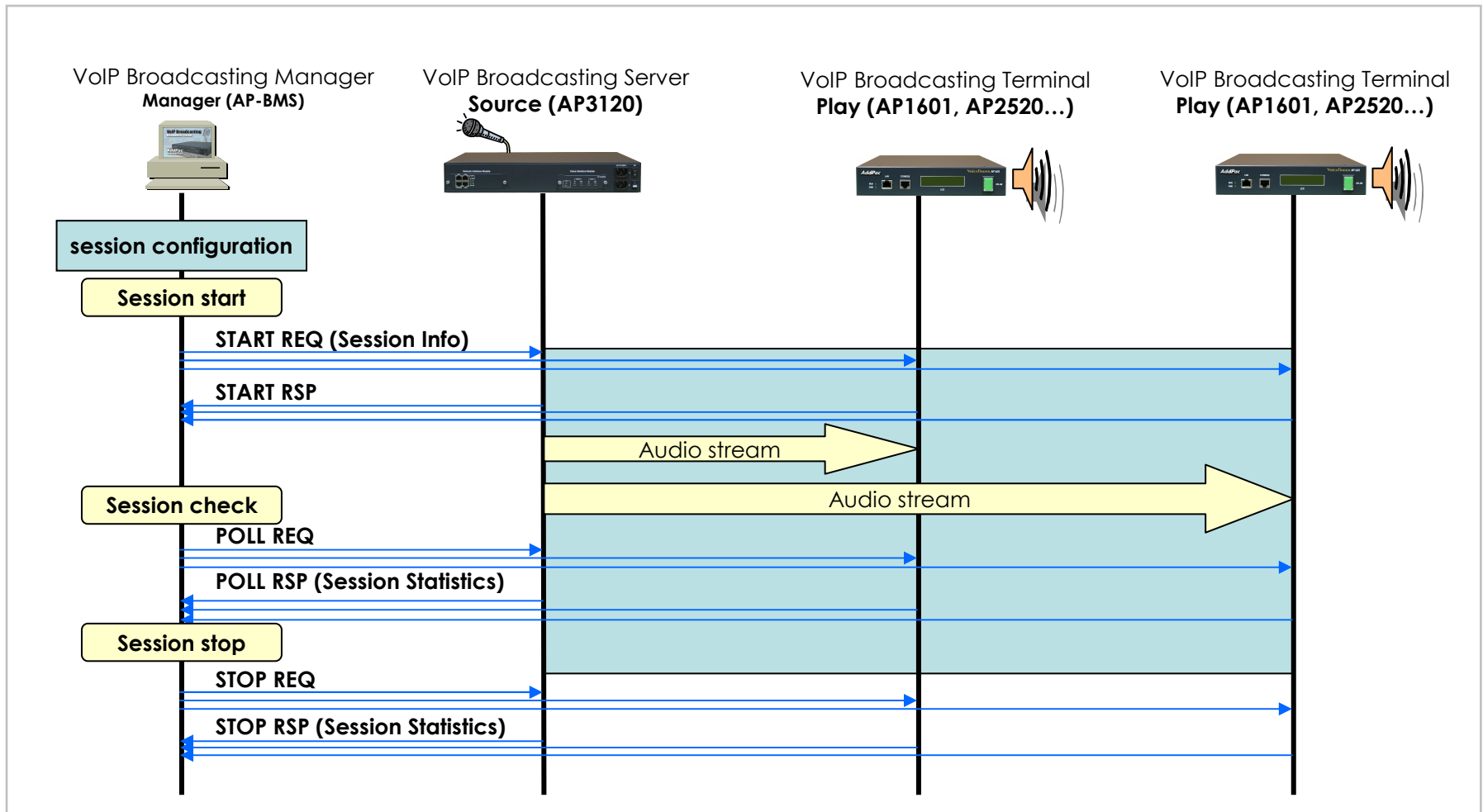
IP Audio Broadcasting Service Scheme



Item	Service Function	Support System
Source	Analog Audio → Audio stream	AP3120 (or Terminal Controlled by AP-BMS)
Relay	Copy Audio Stream to Multi-destinations	AP3120
Terminal	Audio Stream → Analog Audio	AP1601, AP2120, AP2520, AP2850 ...

What is IP Audio Broadcasting ?

IP Audio Broadcasting Message Flow



What is IP Audio Broadcasting ?









IP Audio Broadcasting Evolution

- **Beyond the existing Broadcasting System**
 - Realizing high quality broadcasting (From Voice level to audio level)
 - Utilizing reasonable IP network, replacing expensive voice-dedicated line
 - Eliminating Integration & Management difficulties
- **Extended Bandwidth & Contents**
 - Expanded Bandwidth and Various Contents
 - ADSL → VDSL → FTTH
 - Doubled bandwidth in one year
 - Internet arena asking for more than PC contents
- **To meet NGN arena based on IP network**
 - Intelligent communication system
 - Modularized, flexible architecture, adoptable to rapidly changing network environment
- **IP Broadcasting is the future of telephony service**
 - The Quality of telephony service will be upgraded in the future.
- **Multi Codec Support**
 - MP3(MPEG2 Layer3) for High Quality Audio
 - G.711 A-Law, G.711 U-Law / G.726 r16, G.726 r32 / G.729A / G.723.1 r63, G.723.1 r53
- **Very High Quality Audio Band Broadcasting (AP-MP3 Module based)**
 - Support Very high Quality Audio broadcasting without buffering
 - Embedded System, 22.5Khz sampling(29Kbps : 16khz)



AddPac IP Audio Broadcasting Solution

IP Audio Broadcasting Components

	Model	Function	
Base Components	AP3120	<ul style="list-style-type: none"> ▪ Server ▪ Source broadcasting & relay ▪ Management 	
	AP1601	<ul style="list-style-type: none"> ▪ Terminal ▪ Broadcasting receive & play 	
	AP-BMS	<ul style="list-style-type: none"> ▪ Manager ▪ GUI based broadcasting manage. 	
Option Components	AP-AUDIO2	<ul style="list-style-type: none"> ▪ Voice Band Audio ▪ 2Pair audio in/out interface module 	
	AP-AUD1S3	<ul style="list-style-type: none"> ▪ Voice Band Audio + VoIP Interface ▪ 1Pair audio in/out+FXS3 voice ports 	
	AP-AUD1S2O1	<ul style="list-style-type: none"> ▪ Voice Band Audio + VoIP Interface ▪ 1audio in/out+FXS2+FXO1 voice ports 	
	AP-MP3	<ul style="list-style-type: none"> ▪ High Quality Audio Band ▪ Direct line out/headphone + direct Mic/line in 	
	AP-PSB	<ul style="list-style-type: none"> ▪ Power Switching Box ▪ Remote side AMP power manage. 	

AddPac IP Audio Broadcasting Solution

IP Audio Broadcasting Products

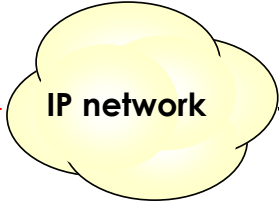
All Embedded Broadcasting Solution

Server Side Solution

AP3120 IP Audio Broadcasting Server



Terminal Side Solution



PC based Management Scheme



Optional Audio Module Solution



Accessory for AMP. Power Control



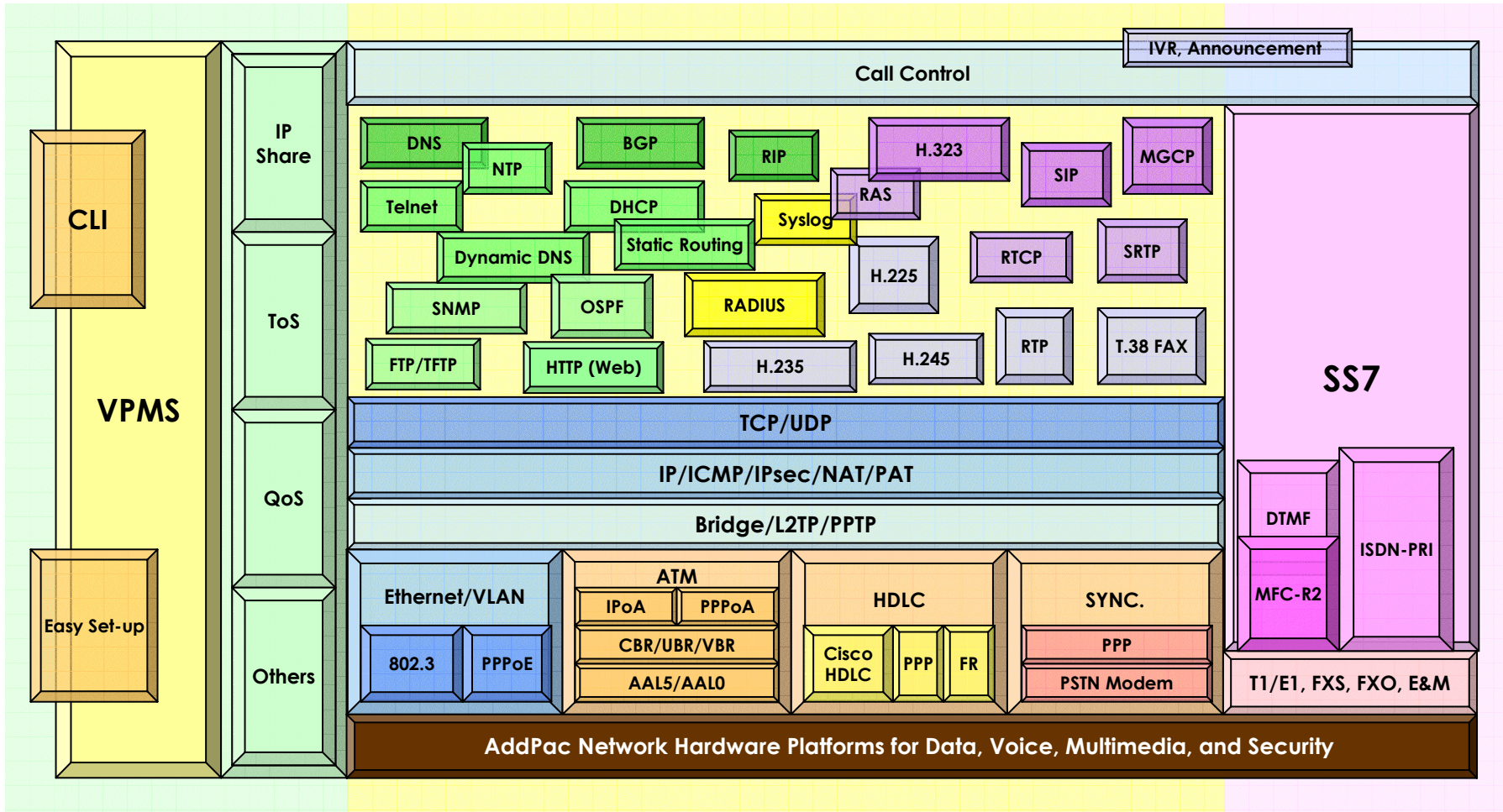
The Vision of Next Generation Audio Broadcasting

APOS™ (AddPac Operating System) Introduction for AP1601 IP Audio Broadcasting Terminal



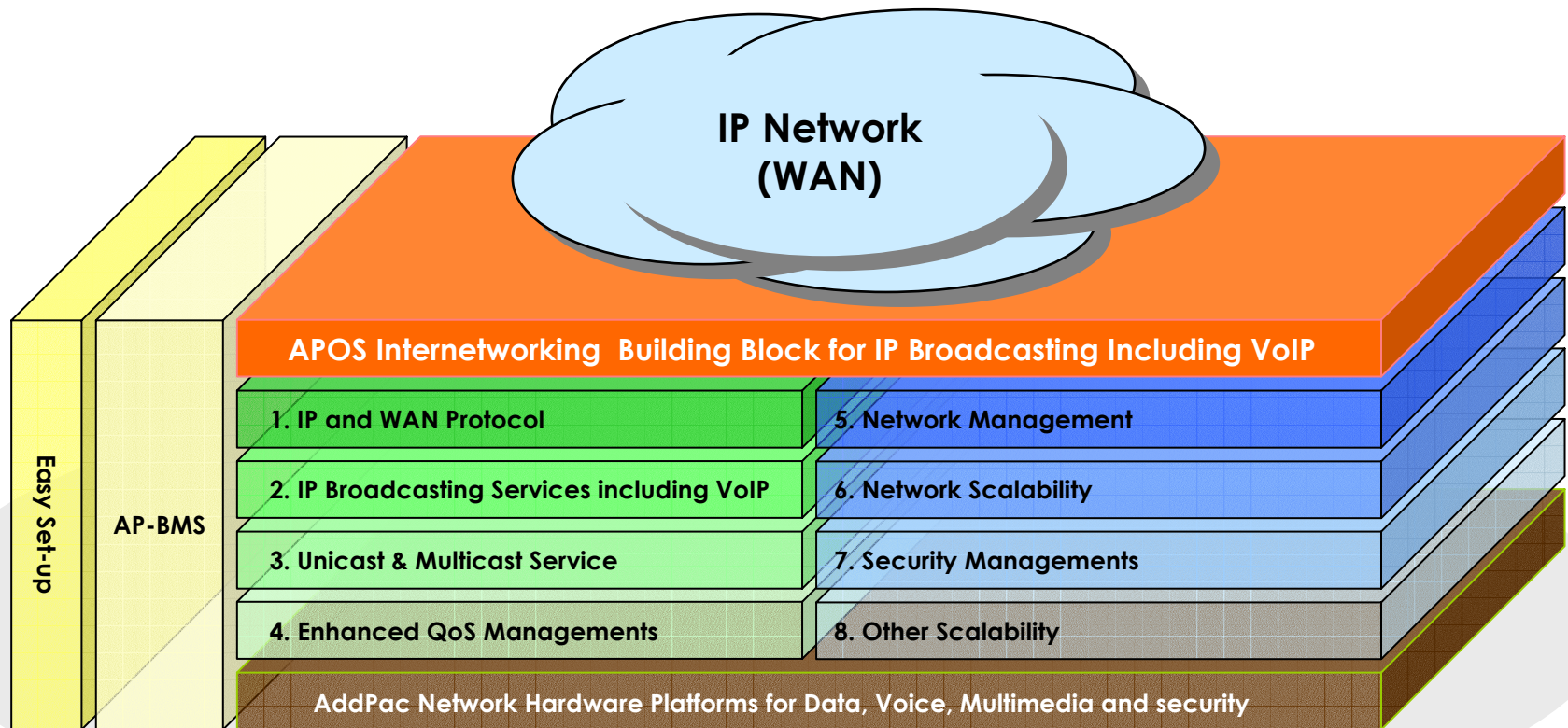
APOS™ for AP1601 IP Audio Broadcasting Terminal

APOS™ Internetworking Protocol Stack



APOS™ for AP1601 IP Audio Broadcasting Terminal

APOS™ Internetworking SW World (1)

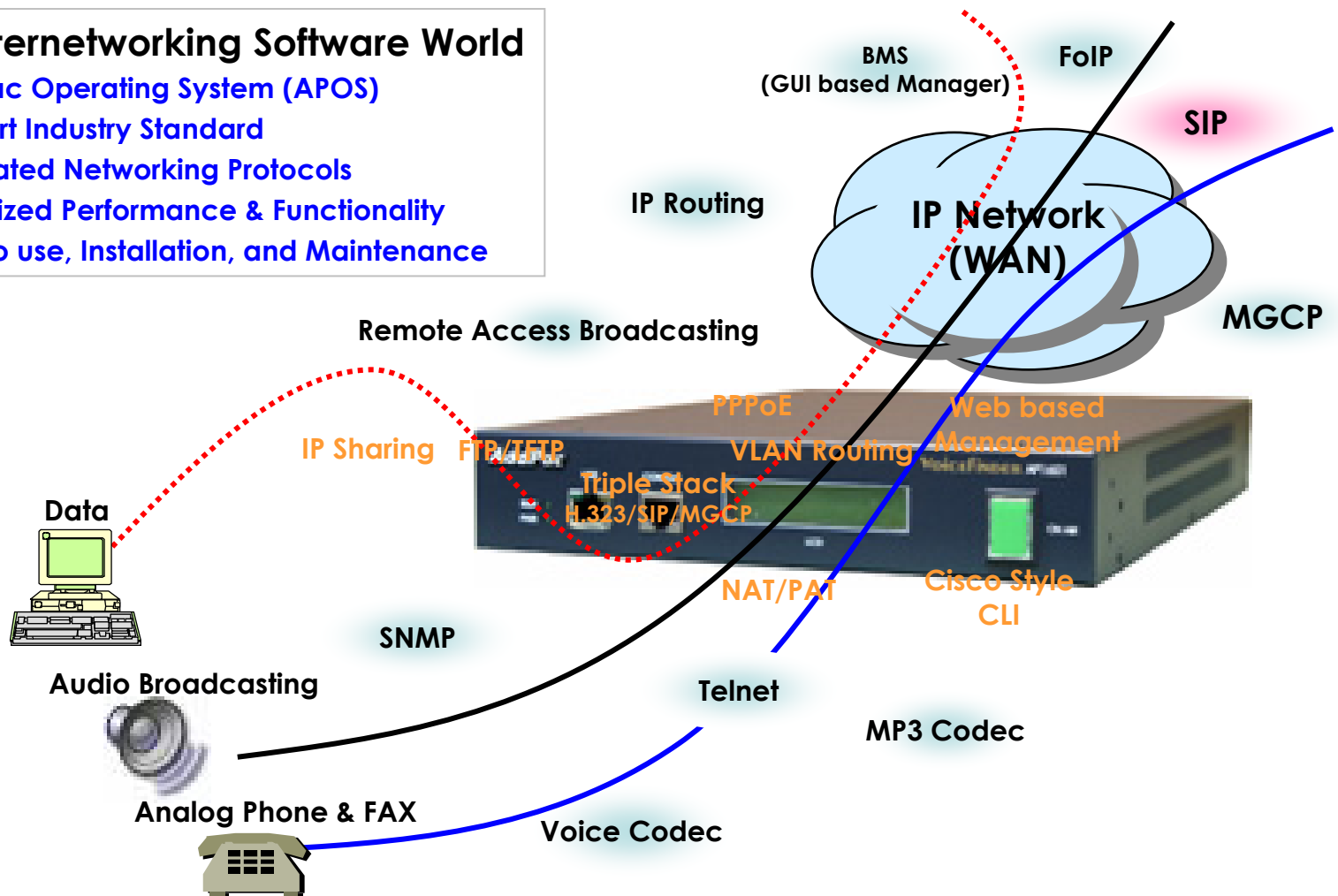


APOS™ for AP1601 IP Audio Broadcasting Terminal

APOS™ Internetworking SW World (2)

• APOS Internetworking Software World

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



APOST™ for AP1601 IP Audio Broadcasting Terminal

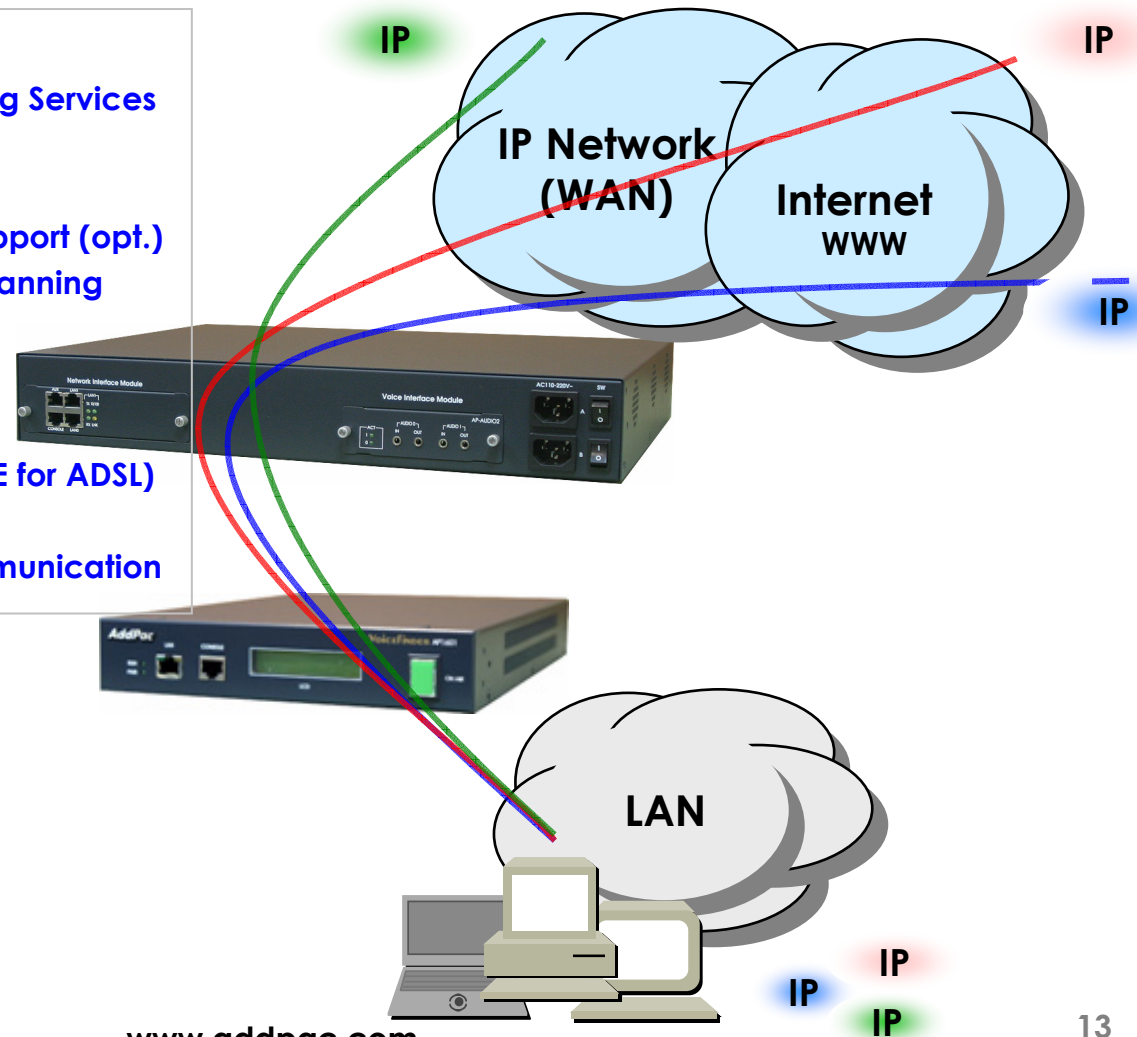
IP and WAN Protocols

- 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™ for AP1601 IP Audio Broadcasting Terminal

IP Broadcasting Services Including VoIP (1)

• Voice Codec for AP-AUDIO2 Module

- G.711 A-Law, G.711 U-Law
- G.726 r16, G.726 r32
- G.729A
- G.723.1 r63, G.723.1 r53
- VAD (Voice Activity Detection) function support
- DTMF relay support (H.323, SIP) based on RFC2833

• Audio Codec for AP-MP3 Module

- MP3(MPEG2 Layer3) Audio Codec
- VAD (Voice Activity Detection) function support
- DTMF relay support (H.323, SIP) based on RFC2833

VoIP

• RTP

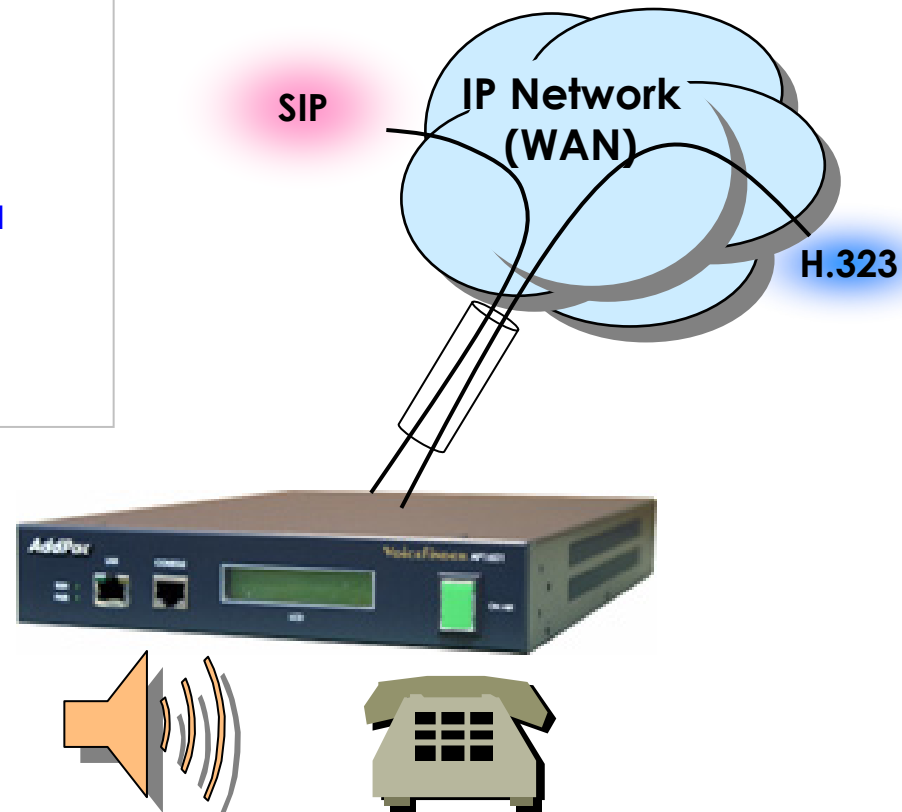
- Redundant RTP packet transmission in case of severe packet loss
- Dynamic jitter buffer management and RTP packet jitter and loss compensation with heuristic & DSP error concealment
- Static jitter buffer setting support
- Voice frame per RTP packet number control for each codec
- In-band ring-back tone support
- Virtual ring-back tone support
- Tone parameter change support



APOST™ for AP1601 IP Audio Broadcasting Terminal

IP Broadcasting Services Including VoIP (2)

- H.323
 - ITU-T Standard H.323 v3 Support
 - Support H.245 Tunneling
 - Including H.235 Security Features
- SIP
 - IETF RFC3261 or RFC2543 SIP Standard

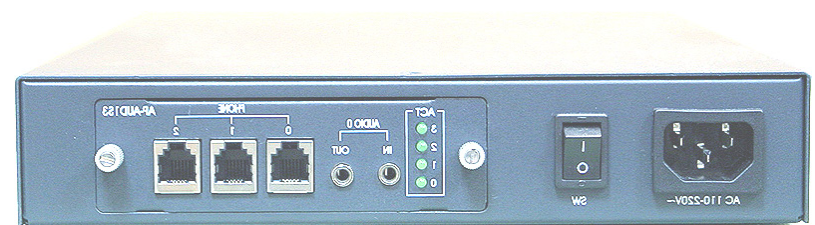


APOS™ for AP1601 IP Audio Broadcasting Terminal

IP Broadcasting Services Including VoIP (3)

• H.323

- Fast connect, normal connect support
- H.245 tunneling support
- Q.931 response message setting for inbound VoIP calls
- H.245 logical channel open timing selection function
- Start H.245 procedure support
- DTMF / Hook flash relay with H.245 alphanumeric / signal
- Secondary gatekeeper support
- Gatekeeper assignment according to the domain name
- Gatekeeper discovery with multicast
- Lightweight RRQ support
- Signaling TCP port assignment
- Resource threshold setting with RAI
- H.235 clear-token, crypto-token support
- Can Map Alias support
- Technical prefix (supported prefix) support
- Public IP assignment in NAT environment



• SIP

- Gateway-based / Endpoint-based registration support
- Secondary proxy-server assignment function
- SIP signaling port change function
- SIP proxy server assignment according to the domain name
- T.38 real-time fax relay support
- DTMF relay support with RFC2833 / OPTION message
- Re-INVITE support

APOS™ for AP1601 IP Audio Broadcasting Terminal

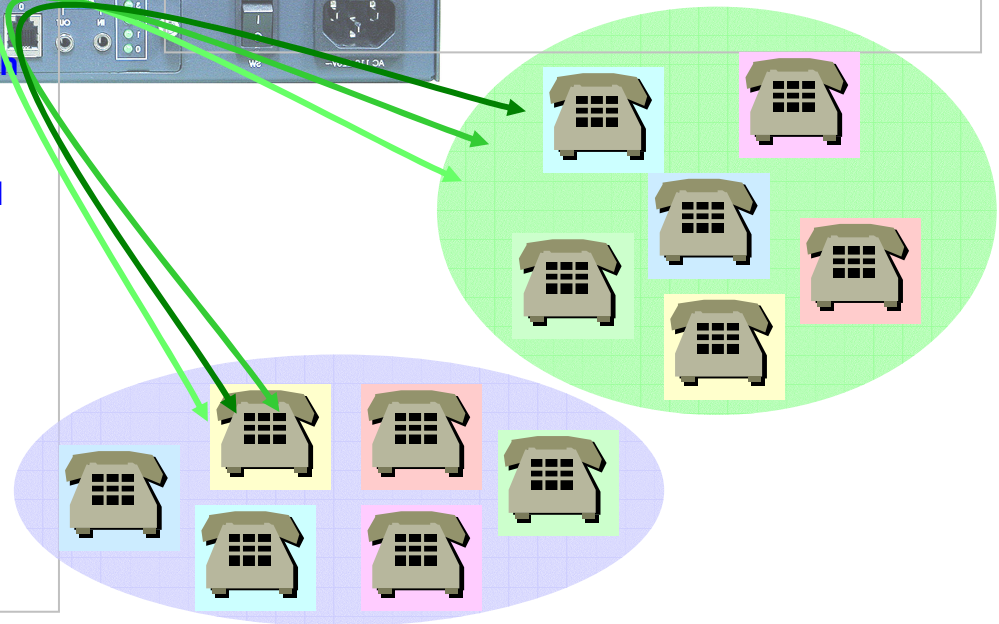
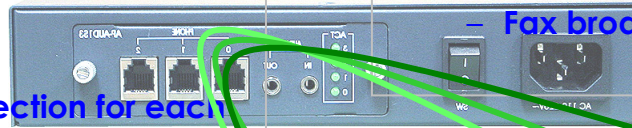
IP Broadcasting Services Including VoIP (4)

• VoIP Call Controls

- Hot line connection function with PLAR (Private Line Auto Ring Down)
- Leased line emulation function
- Connection monitoring function
- Fault tolerant with Redundancy and Call Distribution among Gateways for load balancing
- Call attempt with IP address
- H.323, SIP inbound call connection for each voice port
- Multiple E.164 setting for one voice port
- One E.164 or digit pattern can be assigned to more than one voice port
- Hunting with Longest match/ priority/ sequence/ random
- One stage call setup by Digit forwarding
- Call barring with specific digit patterns
- Calling and called number conversion for PSTN outbound calls
- PSTN rerouting in case of VoIP call attempt failure

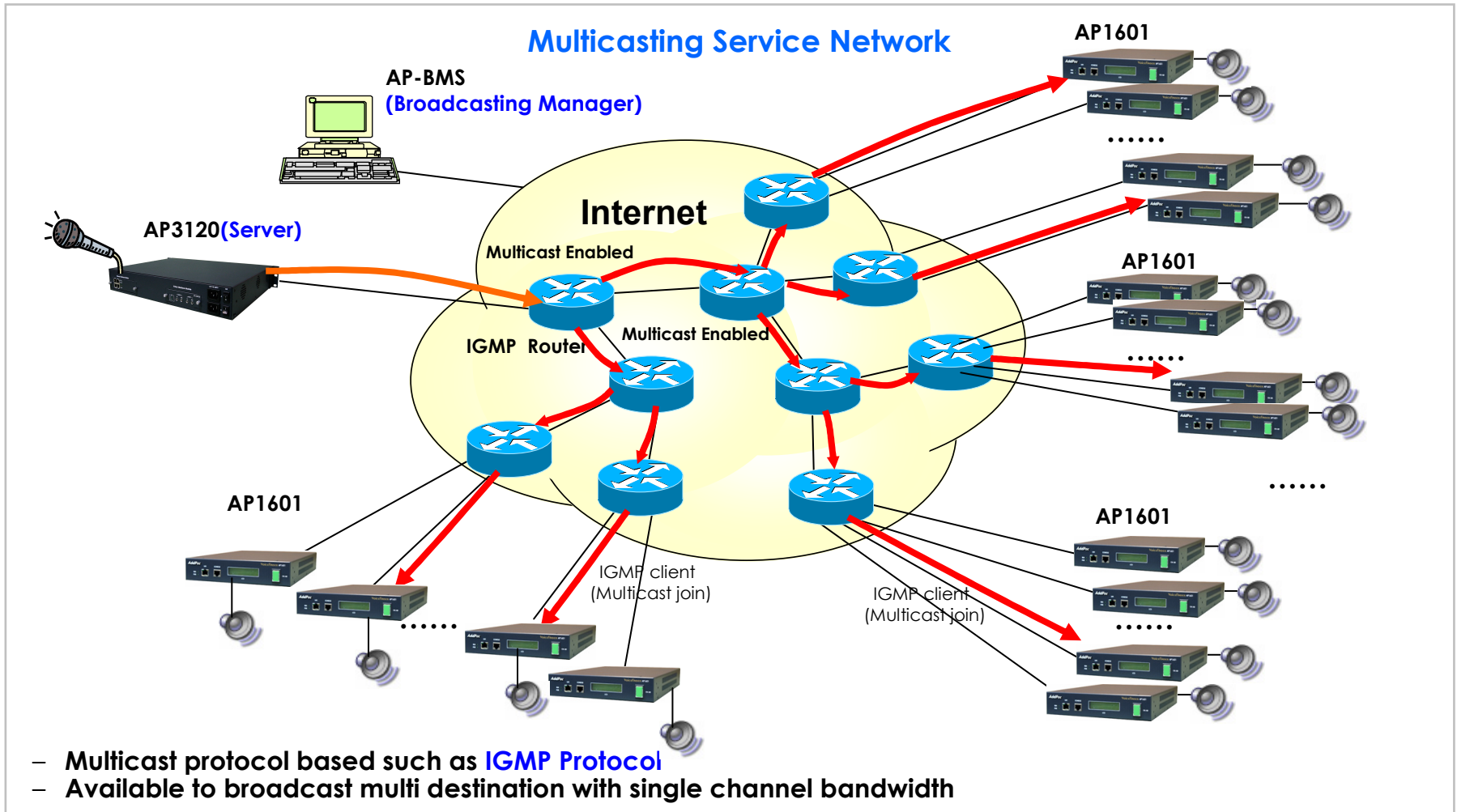
• VoIP Call Controls (cont.)

- Call transfer for internal calls
- Call pickup for internal calls
- Calling and called number conversion for VoIP outbound calls
- Calling and called number conversion for VoIP inbound calls
- Fax broadcasting call control



APOS™ for AP1601 IP Audio Broadcasting Terminal

Multicast IP Broadcasting Network

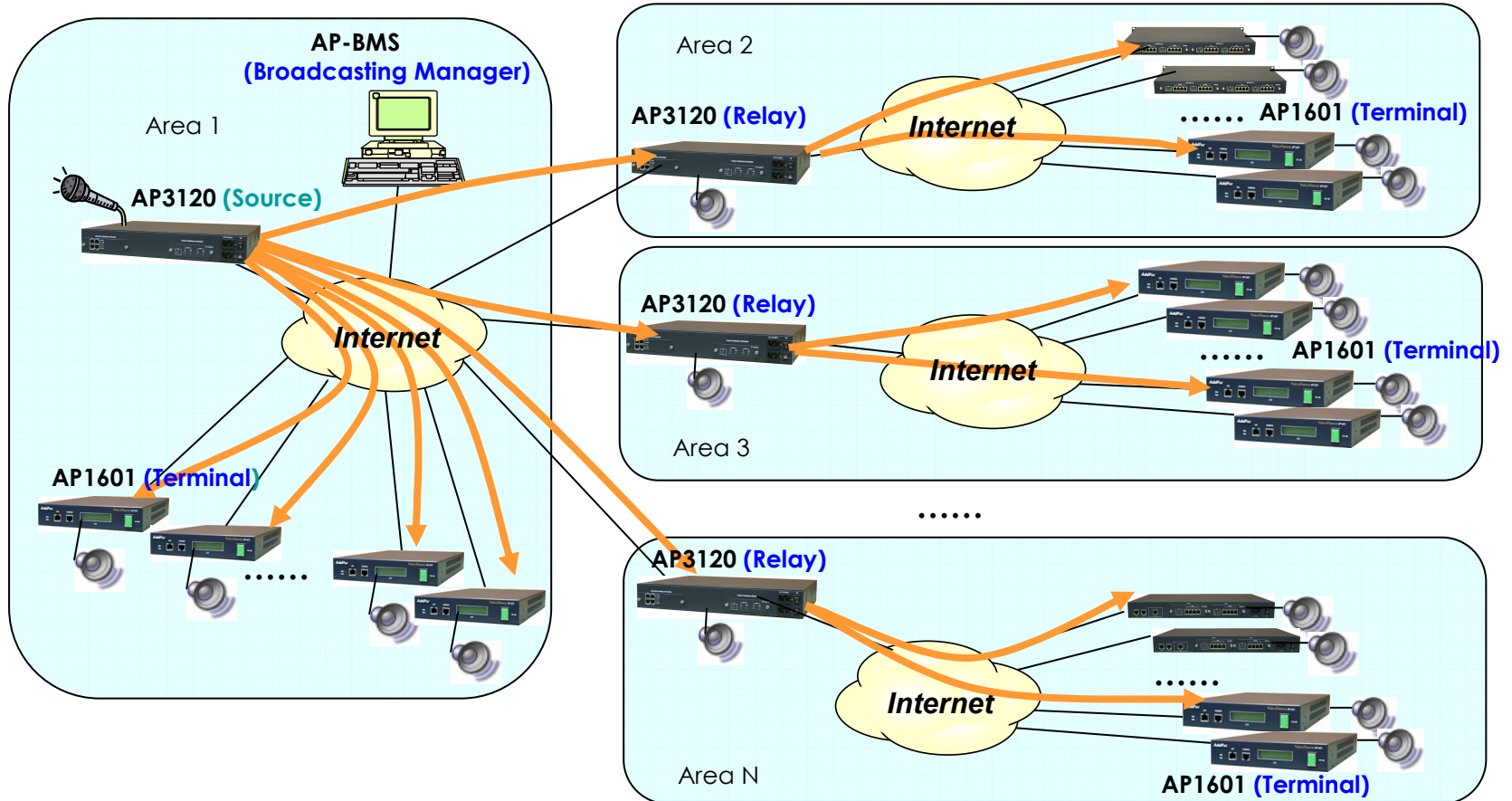


- Multicast protocol based such as **IGMP Protocol**
- Available to broadcast multi destination with single channel bandwidth

APOS™ for AP1601 IP Audio Broadcasting Terminal

Unicast IP Broadcasting Network

Unicasting Service Network



APOS™ for AP1601 IP Audio Broadcasting Terminal

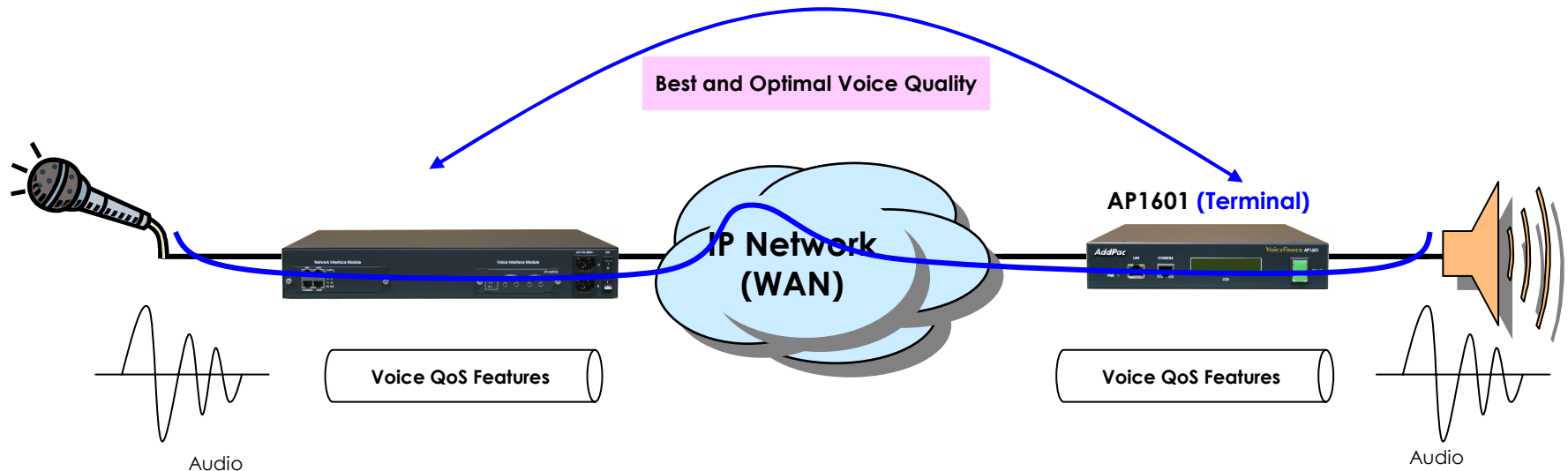
Enhances QoS Managements(1)

- Enhances **Transmit** Voice QoS Features

- Voice Traffic Priority Queuing
- QoS Service Profiling
- Providing Virtual Network Transmit Algorithm
- Real-time Voice Traffic QoS Support
- RTP Packet Transmit Interval Control
- Supporting RTP Packet Redundancy Scheme
- IP Header Control such as ToS, Diffserv

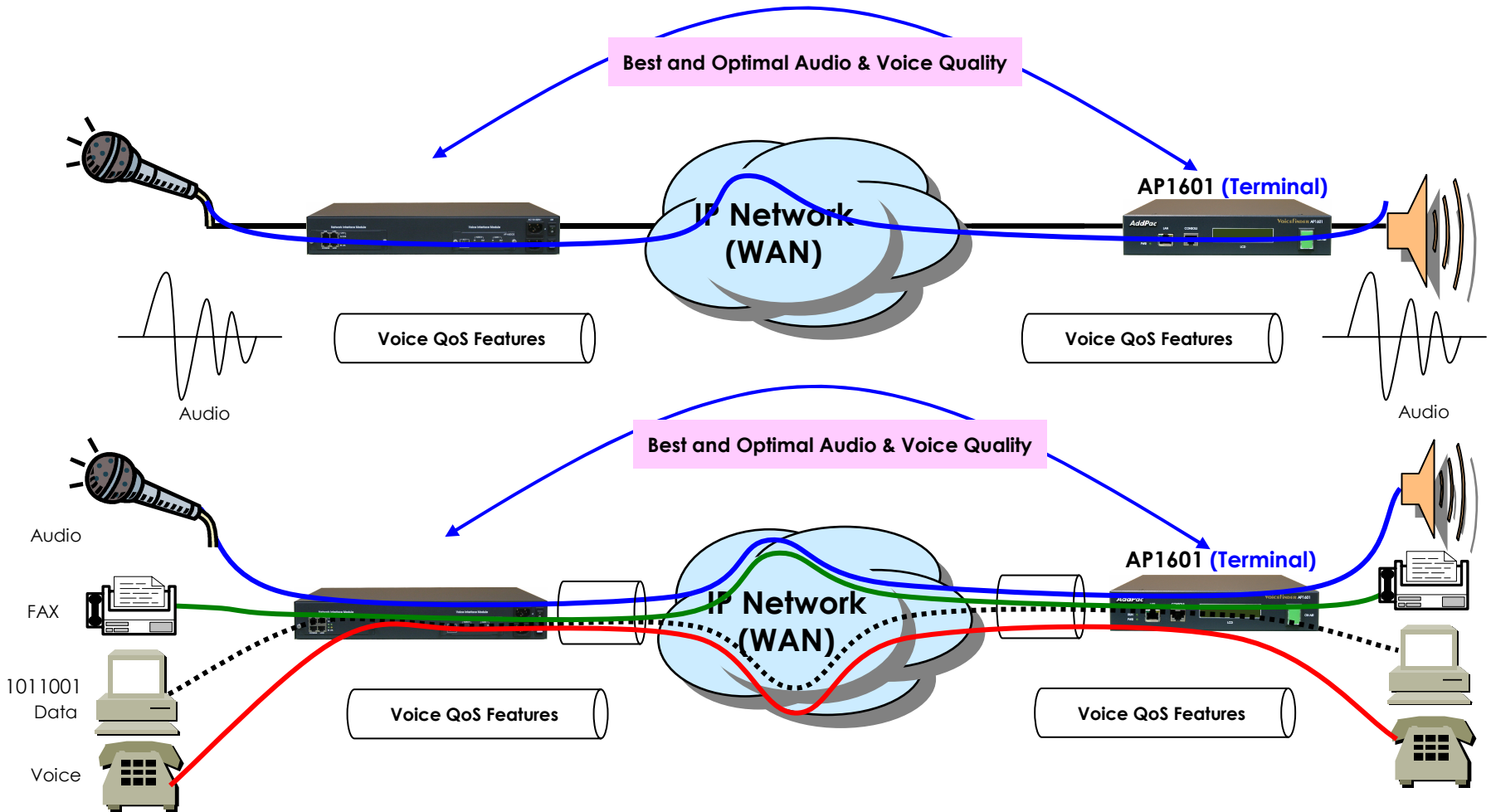
- Enhances **Receive** Voice QoS Features

- Dynamic Jitter Buffer Management
- Error Concealment
- Support T.38 FAX Data Error Recovery Scheme



APOS™ for AP1601 IP Audio Broadcasting Terminal

Enhances QoS Managements (2)



APOS™ for AP1601 IP Audio Broadcasting Terminal

Network Managements

- **SNMP**

- Standard Simple Network Management Protocol(SNMP) Agent support
- MIB v1 and v2 Support

- **Web-based Management**

- Standard Voice & Audio Interface

- **Watch-dog Function**

- Hardware, Software watch-dog services

- **Remote Management**

- Telnet
- Rlogin
- Console

- **Auto Upgrade Service**

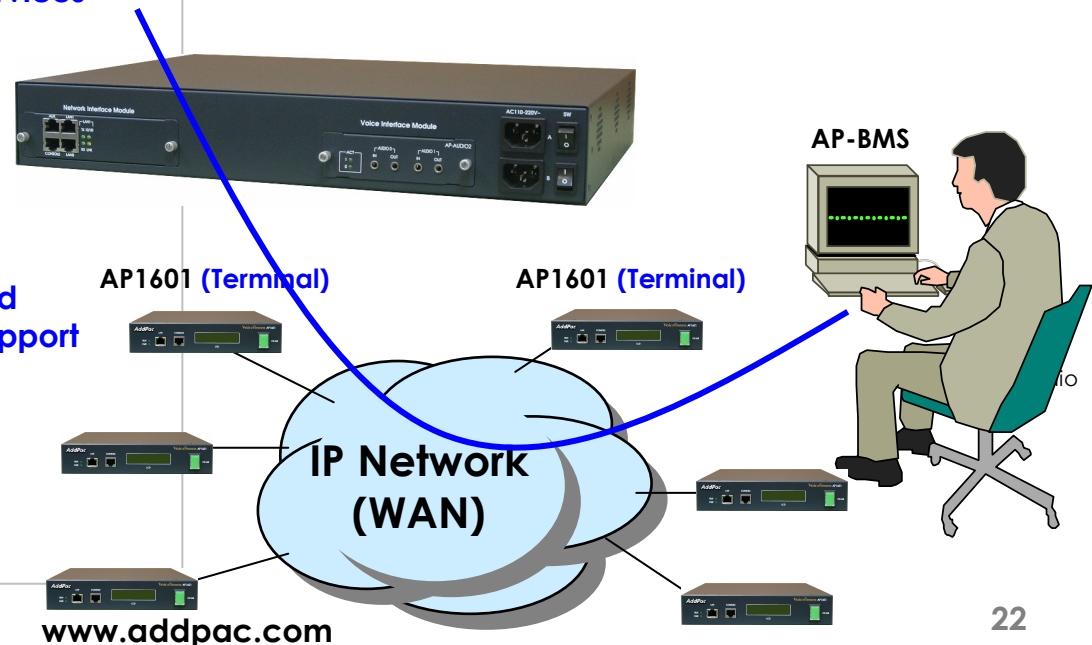
- HTTP server based APOS image and configuration file auto-upgrade support

- **Batch Job Function**

- Text based script downloading

- **AP-BMS**

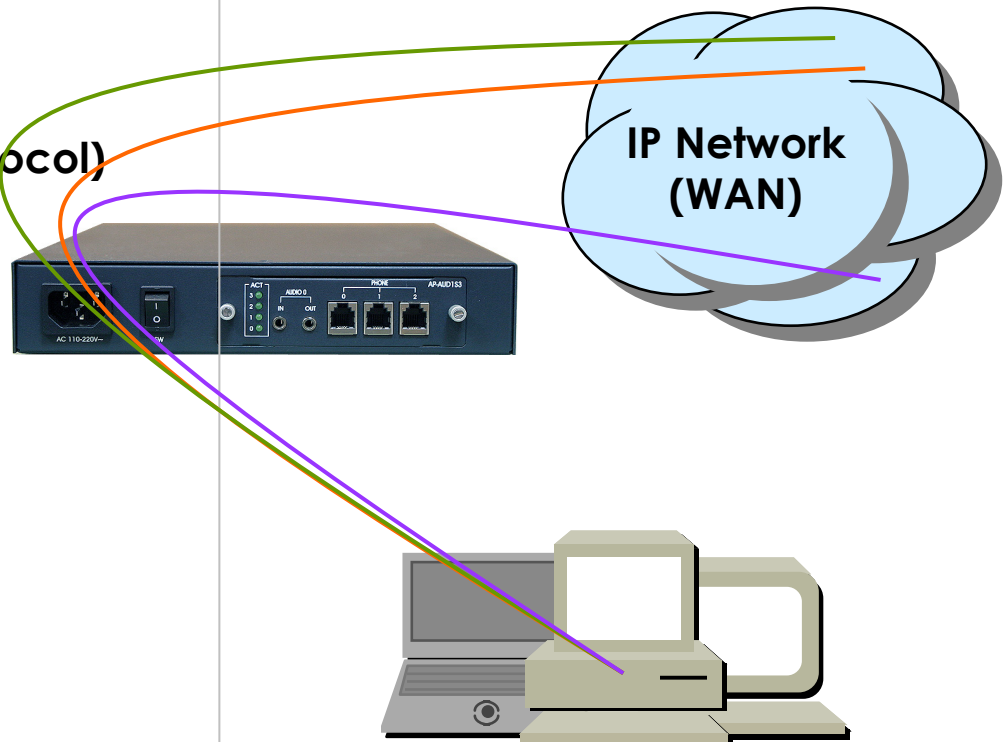
- MS Windows Graphical User Interface (GUI) based Audio Broadcasting Management
- Service Group Configuration
- Scheduled Broadcasting
- Status Monitoring
- Report Service
- Embedded Media file Manager



APOS™ for AP1601 IP Audio Broadcasting Terminal

Network Scalability

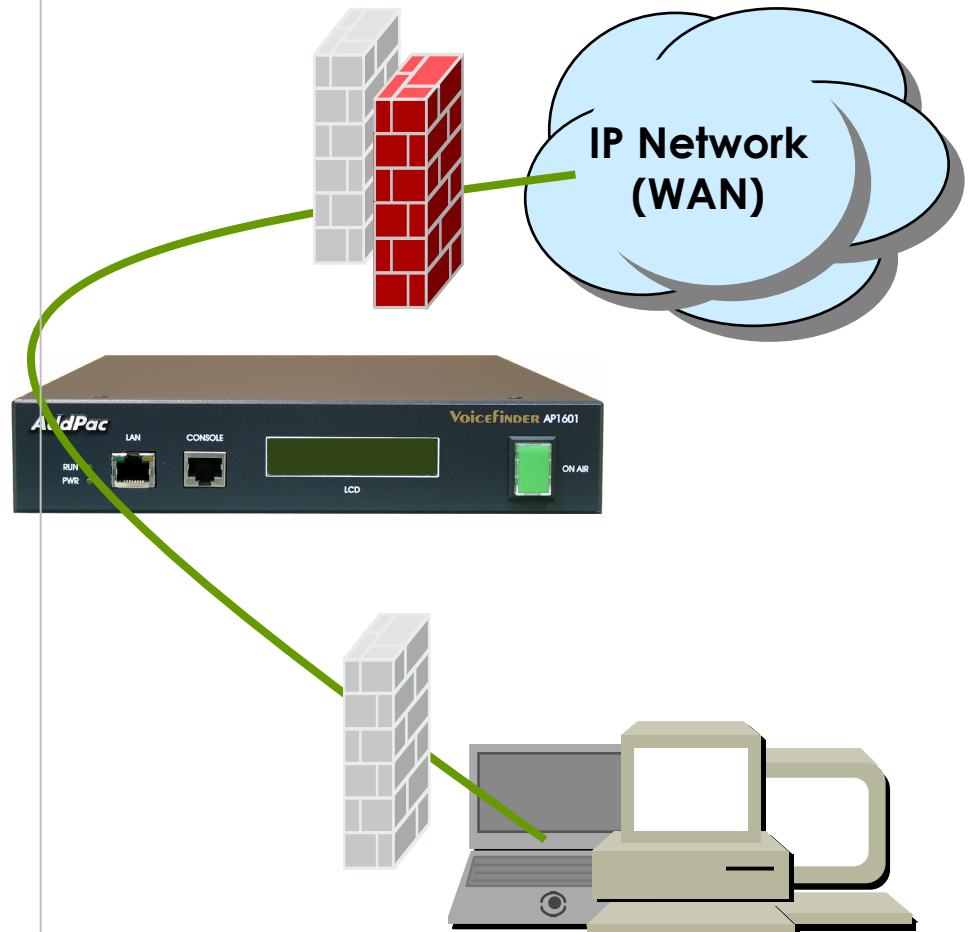
- Both support Fixed and Dynamic IP
- Support Standard Network Protocols
 - PPPoE / PPTP / DHCP
- DHCP Client
- IP Accounting
- Cisco Style CLI
- PPTP (Point-to-Point Tunneling Protocol)
- NTP (Network Time Protocol)
- FTP/TFTP
 - Server and Client support
- DNS / DDNS
 - Dynamic DNS Client support



APOS™ for AP1601 IP Audio Broadcasting Terminal

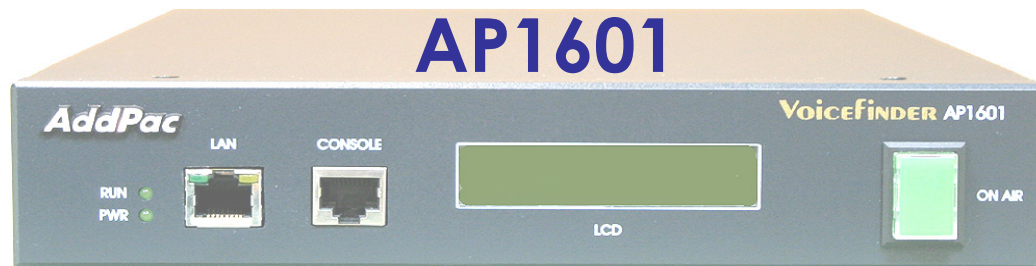
Security Managements (1)

- IP packet filtering
- IP access list
- User authentication function
 - PAP / CHAP
- Enable/Disable specific protocols
- Auto-disconnect of console and Telnet session
- Account Management function for multi-level user
- SNMP/TELNET/FTP/HTTP/TFTP port assignment function
- SNMP/TELNET/FTP access list management
- Boot mode security checking function



The Vision of Next Generation Audio Broadcasting

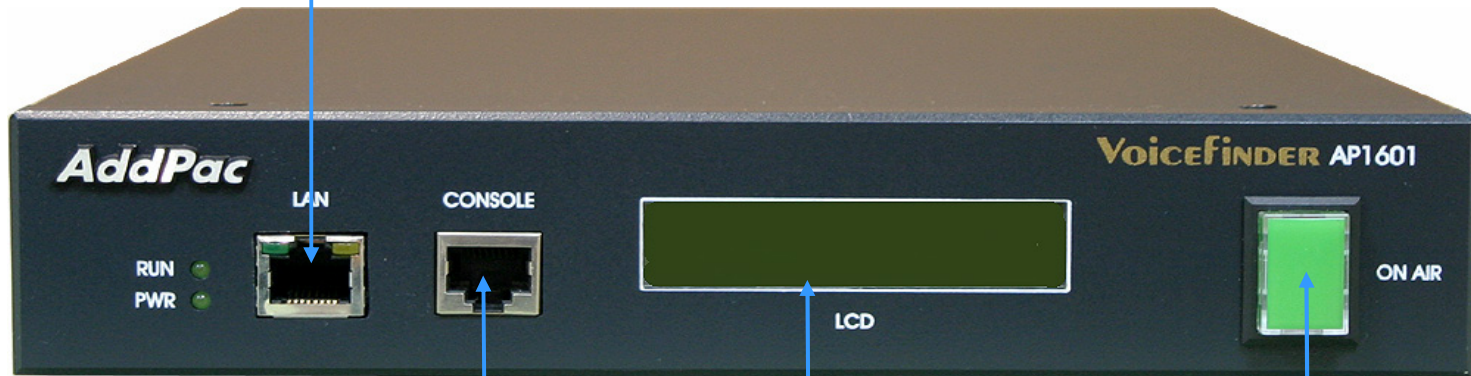
AP1601 System Overview



AP1601 System Overview

AP1601 Network Interface (1)

LAN0 10/100Mbps Ethernet



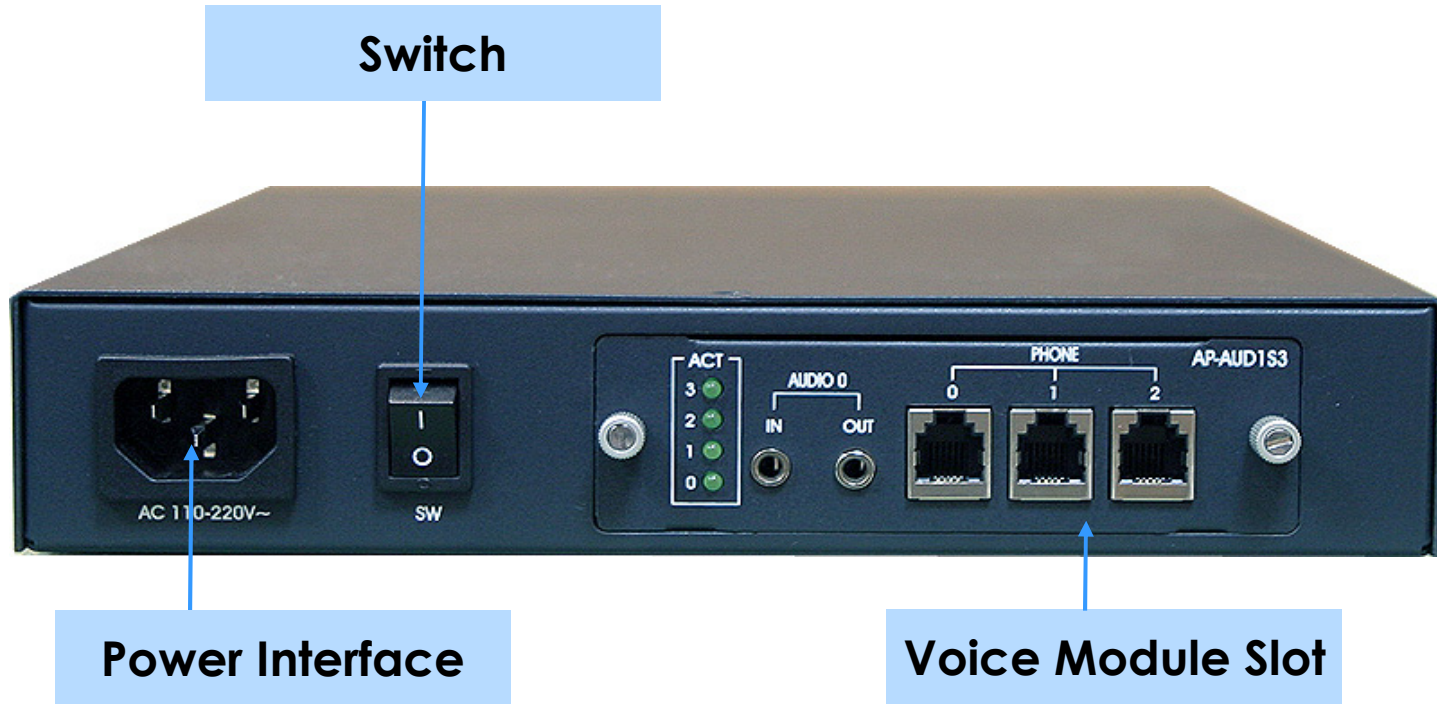
CONSOLE PORT

LCD Panel

ON-AIR LAMP

AP1601 System Overview

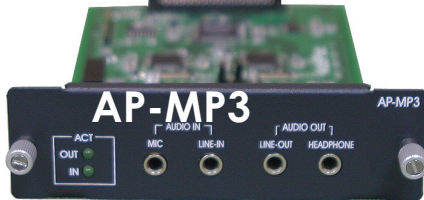
AP1601 Network Interface (2)



AP1601 System Overview

AP1601 Analog Interface Module (1)

□ Support 4 Type Module



- 1-Pair Audio-In/Out Port, Direct MIC-In, Headphone
- High Quality **Audio Band** IP Broadcasting

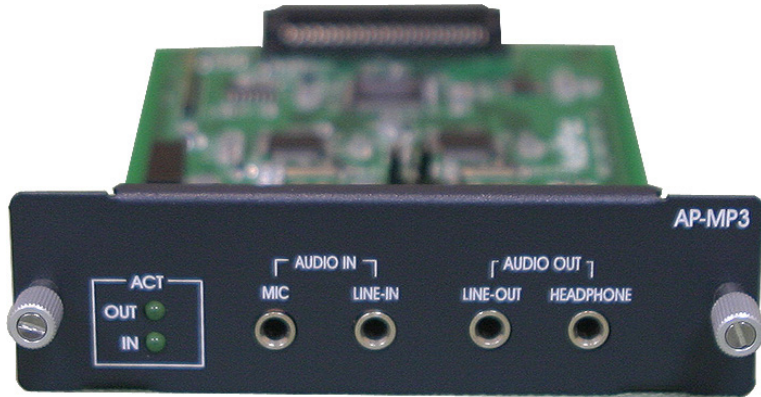
- 2-Pair Audio-In/Out Ports
- **Voice Band** IP Broadcasting

- 1-Pair Audio-In/Out Ports, FXS Analog Interface
- **Voice Band** IP Broadcasting

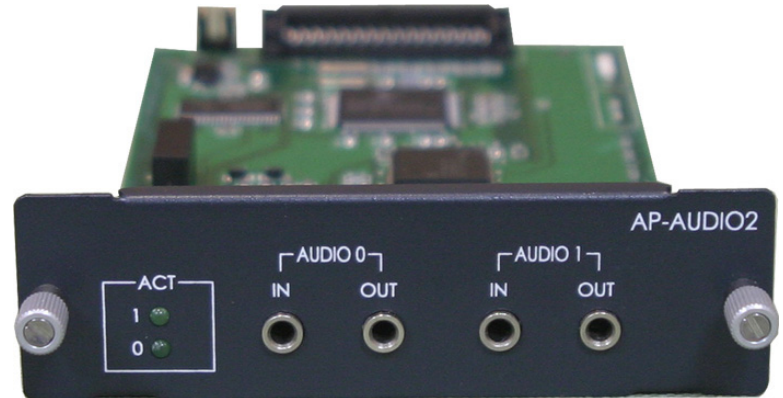
- 1-Pair Audio-In/Out Ports, FXS 2-Ports, FXO 1-Port
- **Voice Band** IP Broadcasting

AP1601 System Overview

AP1601 Analog Interface Module (2)



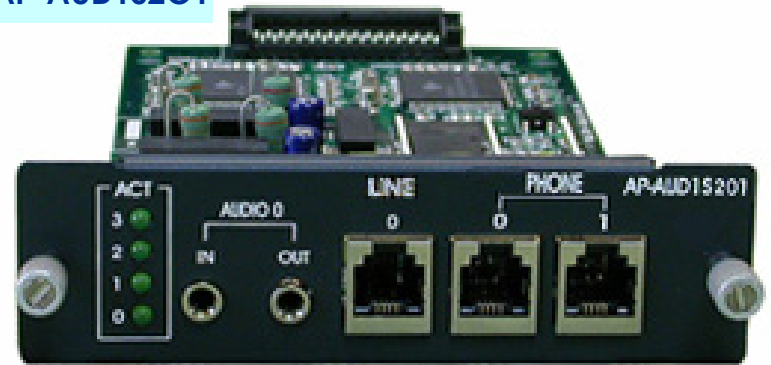
AP-MP3



AP-AUDIO2



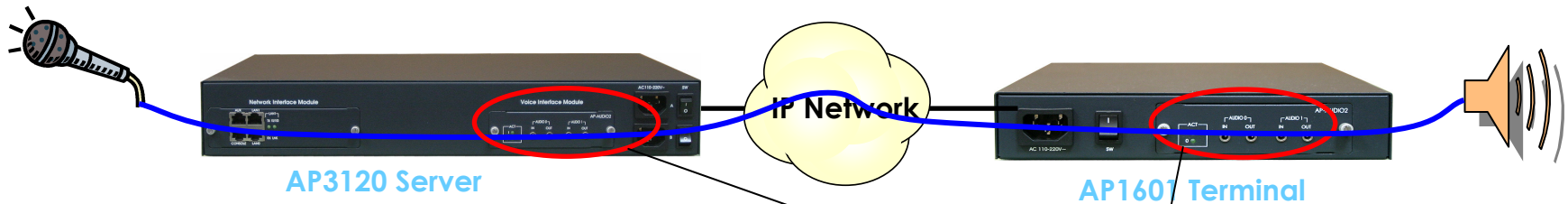
AP-AUD1S3



AP-AUD1S201

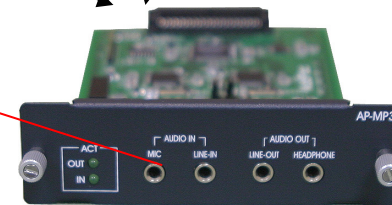
AP1601 System Overview

Analog Interface Module Connectivity (1)



• AP-MP3 Module Interface

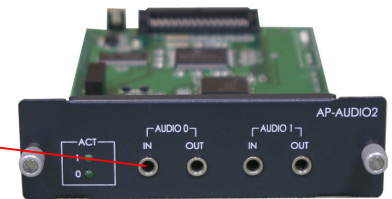
- 3.5mm Stereo Line-In/Out Hardware Interface
- Direct MIC-In/Out Hardware Interface
- Direct Headphone-Out Hardware Interface
- Line-In : 100mVpp ~ 2Vpp/ 75 Ω
- Line-Out : 105mW/180 Ω
- Frequency Characteristic ($\pm 3\text{dB}$) : 60Hz~20kHz
- Signal to Noise Ratio : Above 70dB



AP-MP3 Module

• AP-AUDIO2 Module Interface

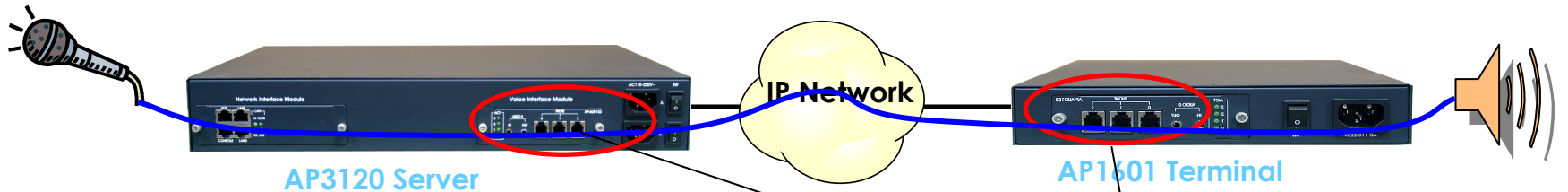
- 3.5mm Stereo Line-In/Out Hardware Interface
- Direct MIC-In Hardware Interface
- Line-In : 100mVpp ~ 2Vpp/ 75 Ω
- Line-Out : 105mW/180 Ω
- Frequency Characteristic ($\pm 3\text{dB}$) : 60Hz~20kHz
- Signal to Noise Ratio : Above 70dB



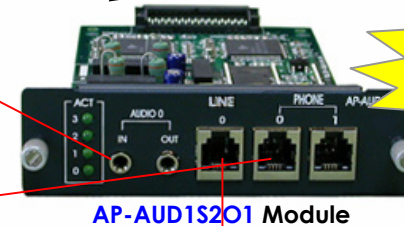
AP-AUDIO2 Module

AP1601 System Overview

Analog Interface Module Connectivity (2)



- **AP-AUD1S2O1 Module (AUD1 Interface)**
 - 3.5mm Stereo Line-In/Out Hardware Interface
 - Line-In : 100mVpp ~ 2Vpp/ 75Ω
 - Line-Out : 105mW/180Ω
 - Frequency Characteristic ($\pm 3\text{dB}$) : 60Hz~20kHz
 - Signal to Noise Ratio : Above 70dB
- **AP-AUD1S2O1 Module (2FXS Port Interface)**
 - RJ-11 Hardware interface
 - Polarity inverse generation function
 - Caller-id generation function
 - Busy-out function support
 - Ring cadence setting function
 - Ring frequency setting function
 - European type II telephone support
 - Surge protect support

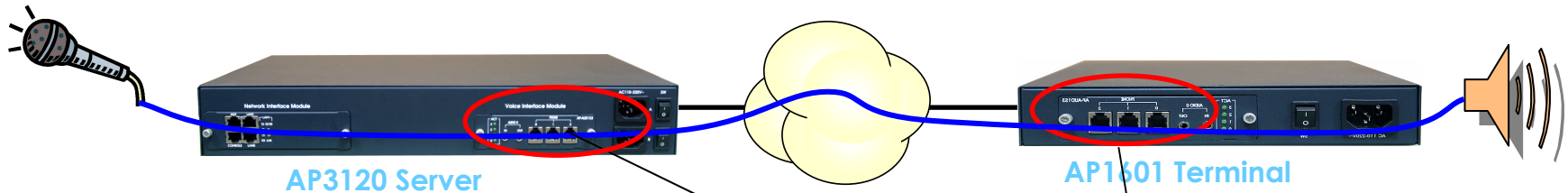


AP-AUD1S2O1 Module (1FXO Port Interface)

- Polarity inverse detection function
- Caller-ID detection function
- Busy-out function support
- Clear down tone registration and detect function
- Hook flash timing setting function
- Ring detect timeout setting function
- Ring number setting function
- RJ-11 Hardware interface

AP1601 System Overview

Analog Interface Module Connectivity (3)



- **AP-AUD1S3 Module (AUD1 Interface)**
 - 3.5mm Stereo Line-In/Out Hardware Interface
 - Line-In : 100mVpp ~ 2Vpp/ 75Ω
 - Line-Out : 105mW/180Ω
 - Frequency Characteristic ($\pm 3\text{dB}$) : 60Hz~20kHz
 - Signal to Noise Ratio : Above 70dB
- **AP-AUD1S3 Module (3FXS Port Interface)**
 - RJ-11 Hardware interface
 - Polarity inverse generation function
 - Caller-id generation function
 - Busy-out function support
 - Ring cadence setting function
 - Ring frequency setting function
 - European type II telephone support
 - Surge protect support

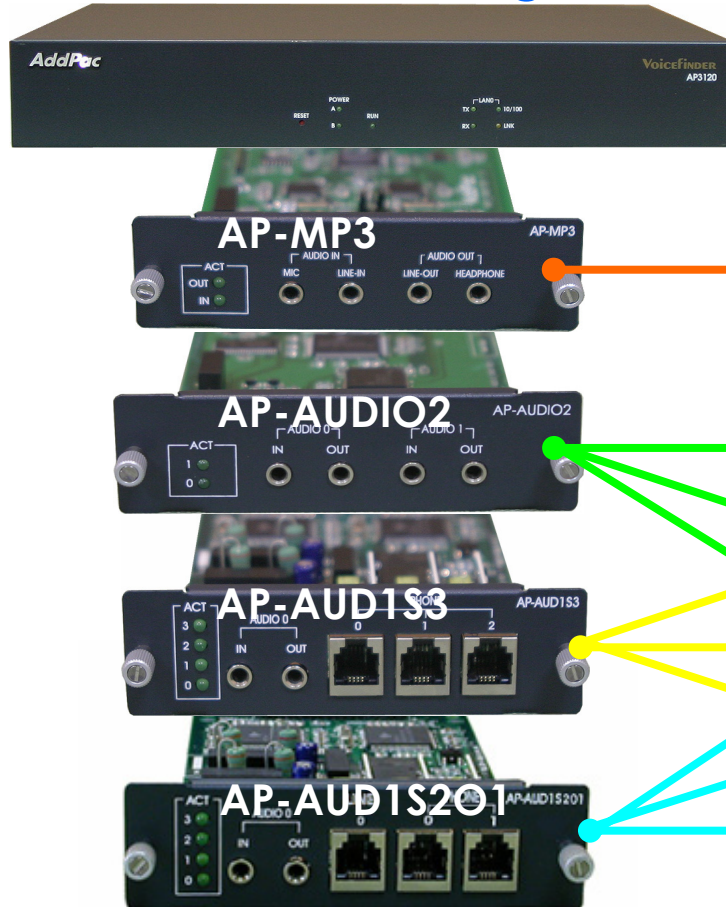


AP-AUD1S3 Module

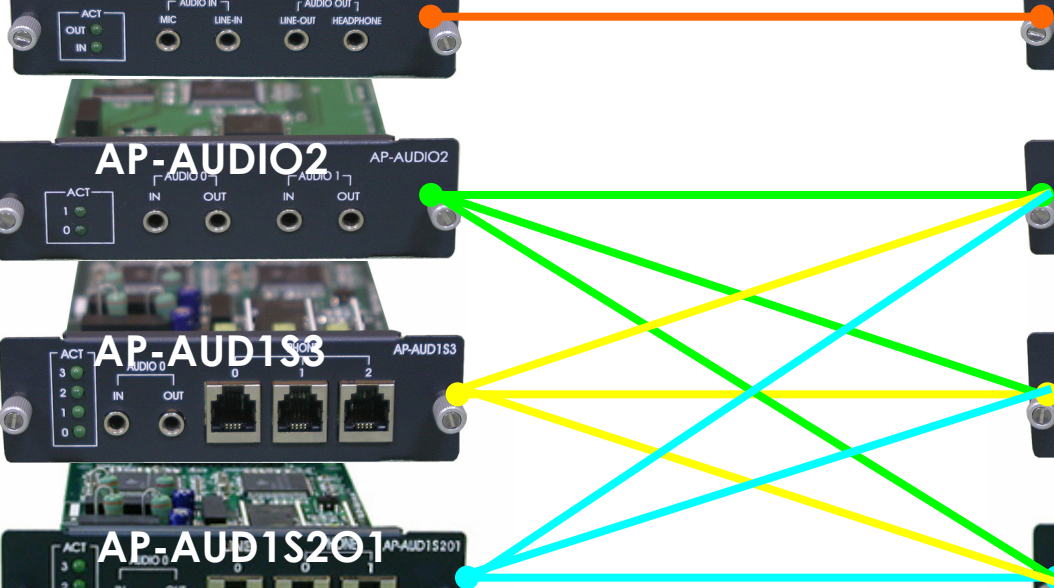
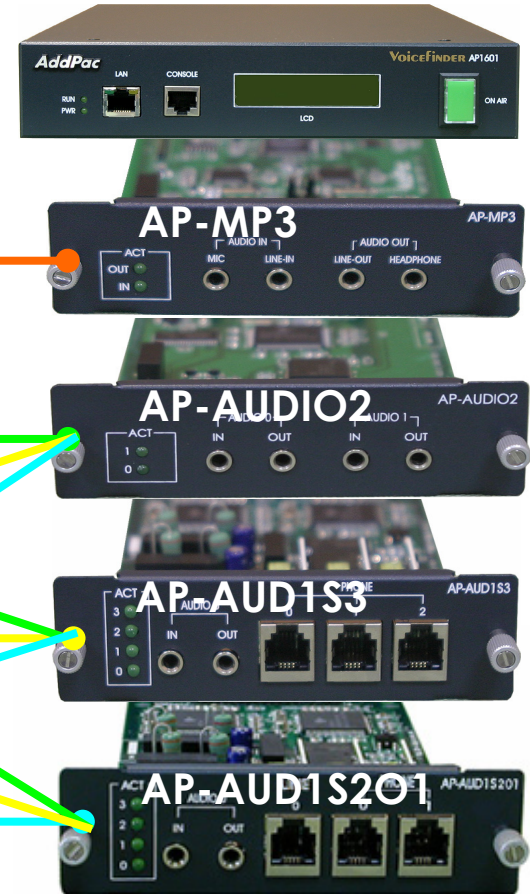
AP1601 System Overview

AP3120 Server-AP1601 Matching

AP3120 Broadcasting Server



AP1601 Broadcasting Terminal



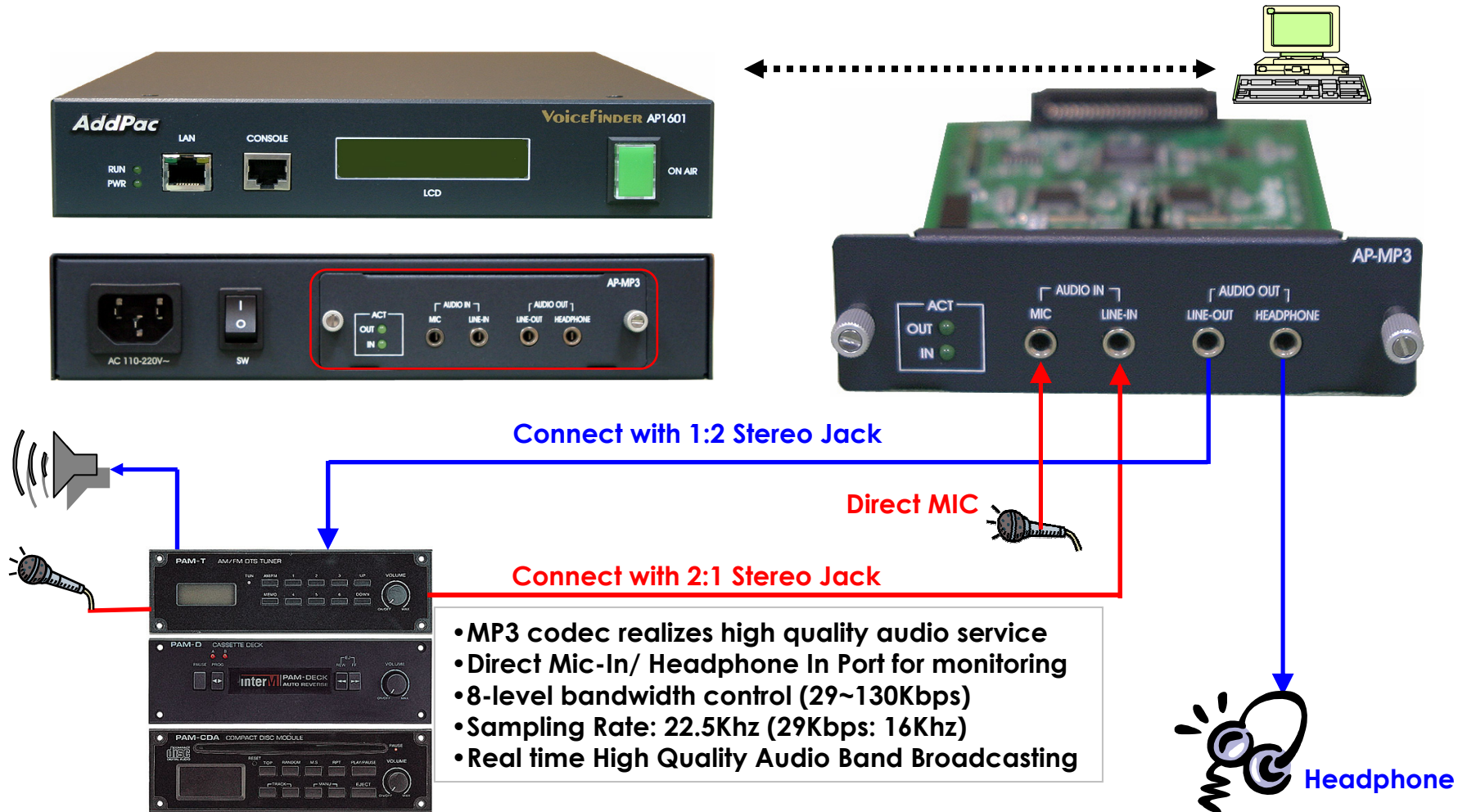
The Vision of Next Generation Audio Broadcasting

AP1601 System Configuration



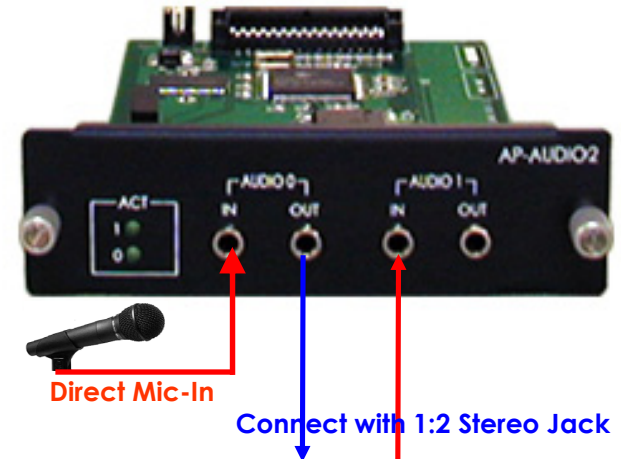
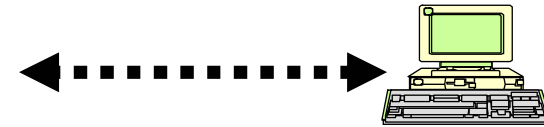
AP1601 System Configuration

AP-MP3 Module Configuration



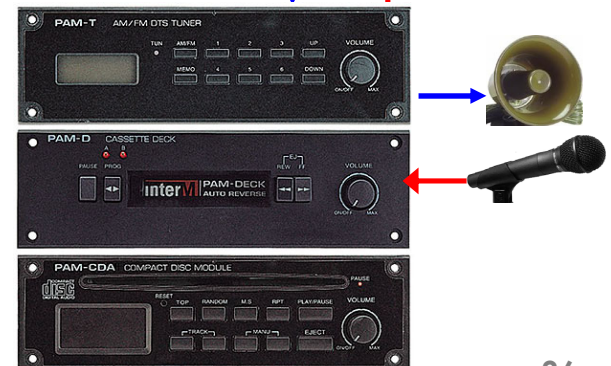
AP1601 System Configuration

AP-AUDIO2 Module Configuration



Audio Module HW Specification

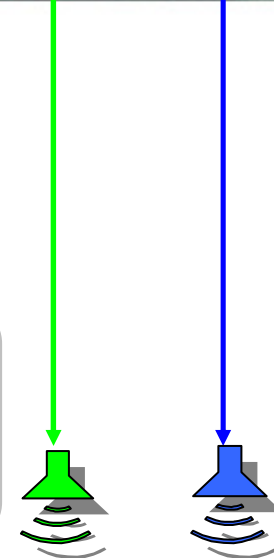
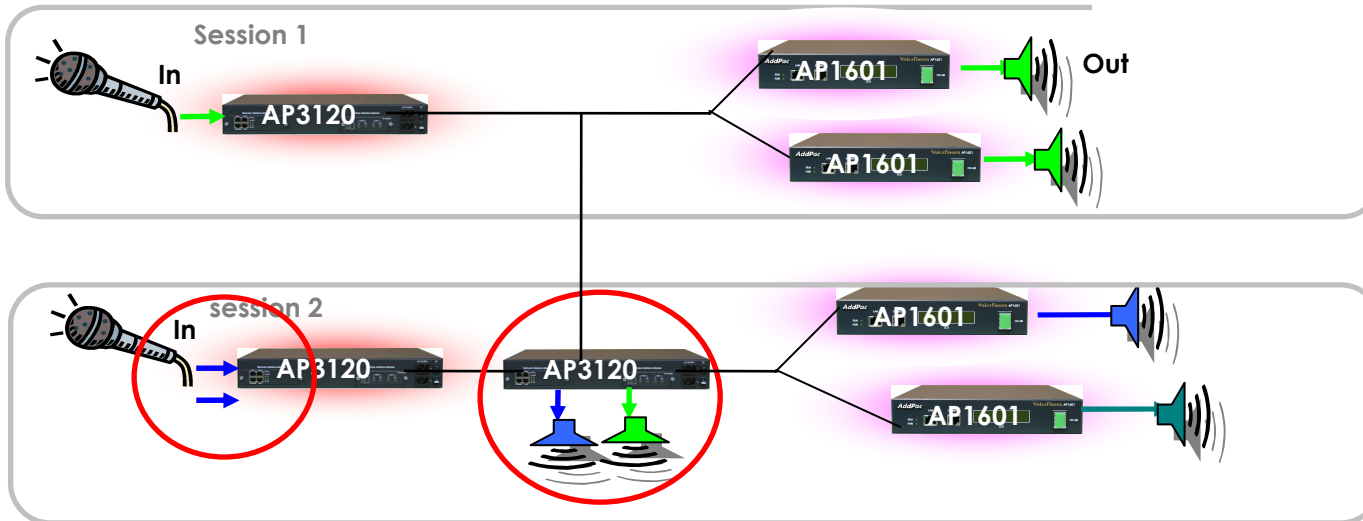
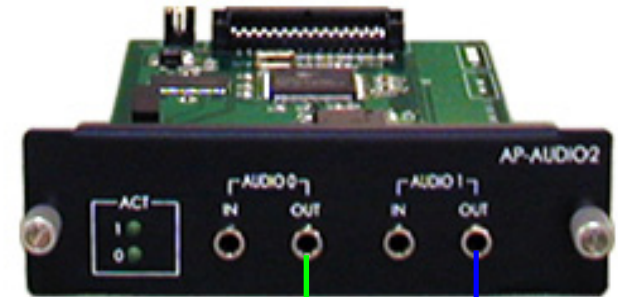
Line-In	100mVpp ~ 2Vpp/ 75Ω
Line-Out	105mW/180Ω
Frequency Characteristic (±3dB)	60Hz~20kHz
Signal to Noise Ratio	Above 70dB
Dimension (WHD)	111×32×160mm



AP1601 System Configuration

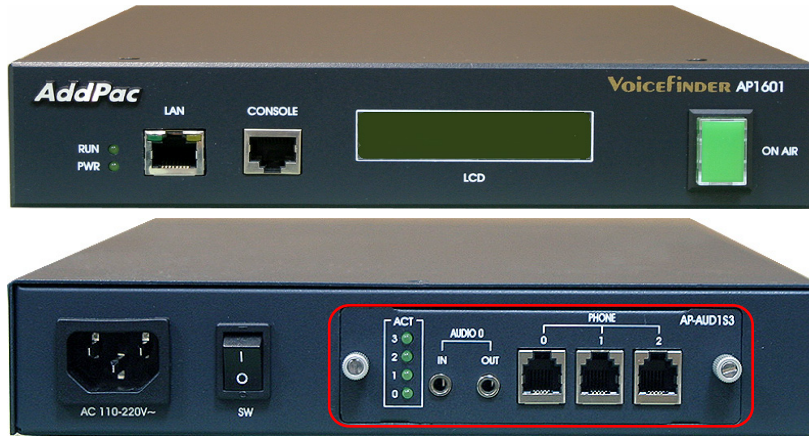
AP-AUDIO2 Module based Network

- 2-Pair Audio-In/Out Ports
- 3.5mm Female Analog Interface
- Available to receive & send 2-Channels Broadcasting
- Support Voice Level IP Broadcasting
- Sampling Rate: 8Khz

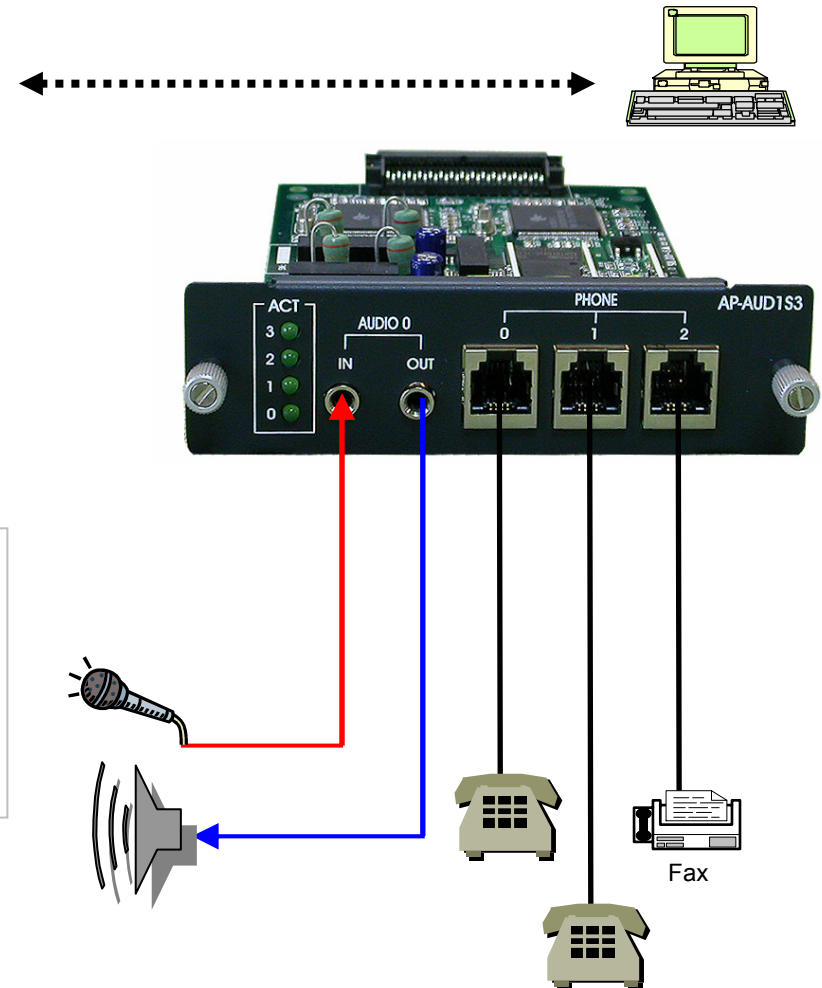


AP1601 System Configuration

AP-AUD1S3 Module Configuration

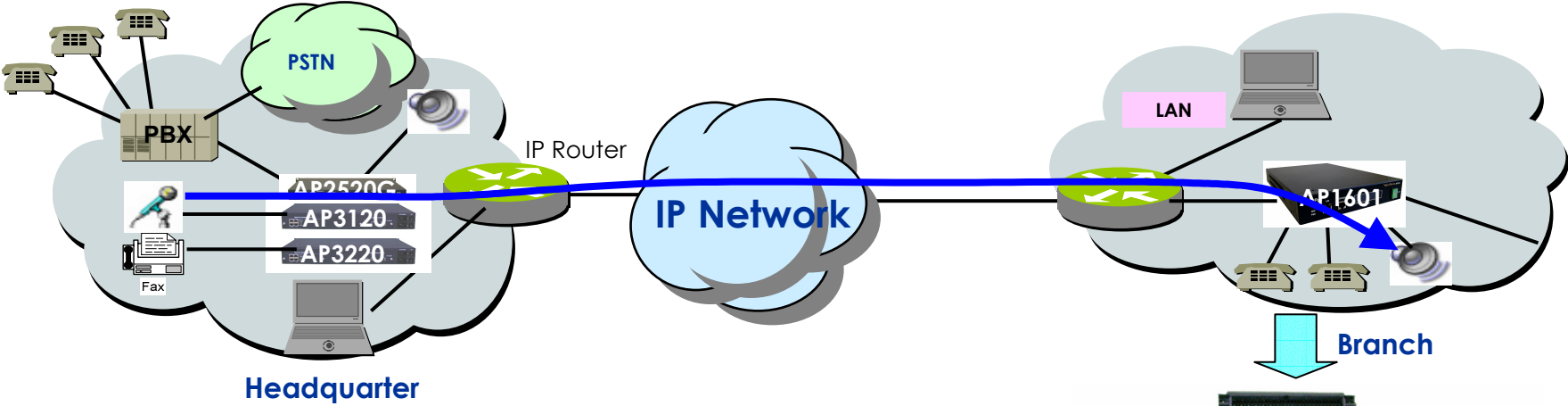


- 1-Pair Analog Audio-In/Out
- 3.5mm Female Stereo Audio Ports
- 3-Ports FXS Analog Interface for VoIP Services
- Realized Integrated Multi Terminal Service
- Support Audio Broadcasting and FAX Broadcasting including VoIP Services

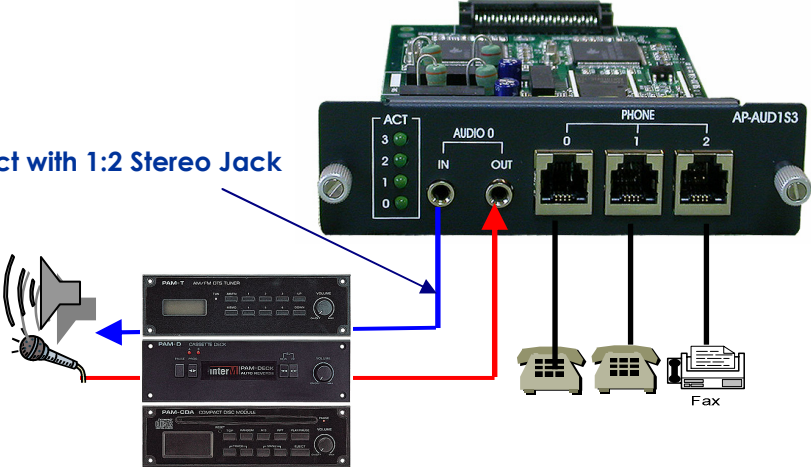


AP1601 System Configuration

AP-AUD1S3 based Network

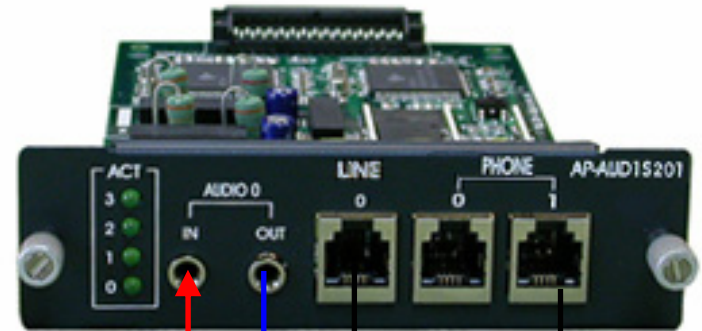
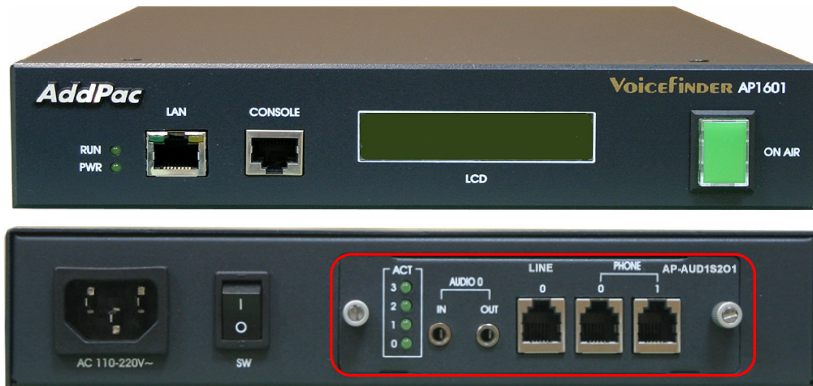


Connect with 1:2 Stereo Jack



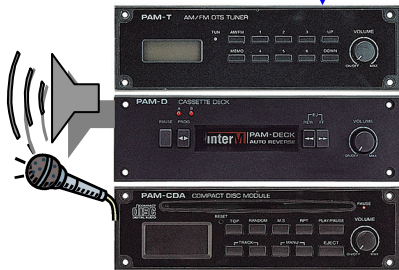
AP1601 System Configuration

AP-AUD1S2O1 Module Configuration

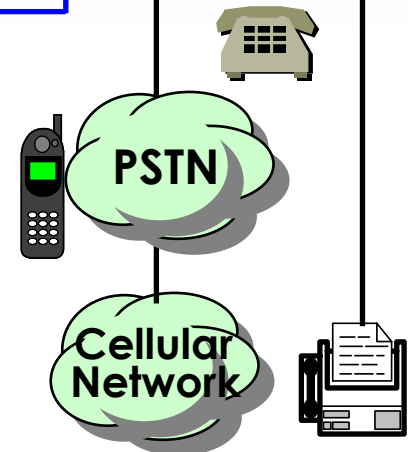


Connect with 1:2 Stereo Jack

Connect with 2:1 Stereo Jack



- 1 Pair Analog Audio-In/Out
- 3.5mm Female Stereo Audio Ports
- 2 Ports FXS, 1 Port FXO Analog Interface
- Remote Access Broadcasting via PSTN Phone & Cellular Phone
- Realized Integrated Multi Terminal Service
- Support Audio Broadcasting and FAX Broadcasting including VoIP Services

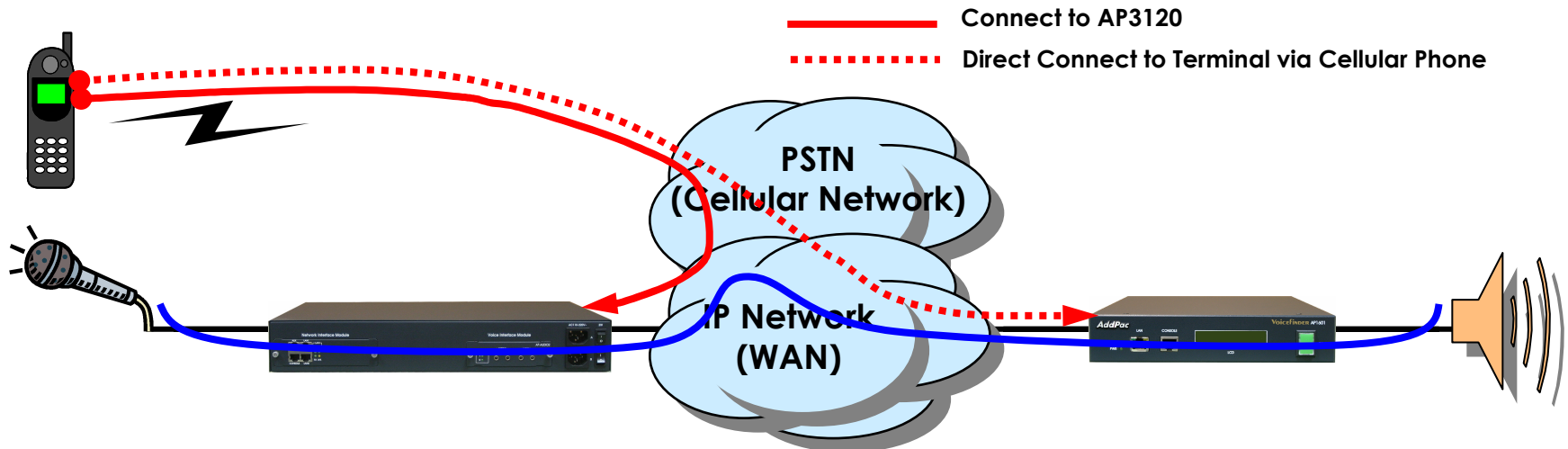


AP1601 System Configuration

AP-AUD1S2O1 Remote Access Broadcasting

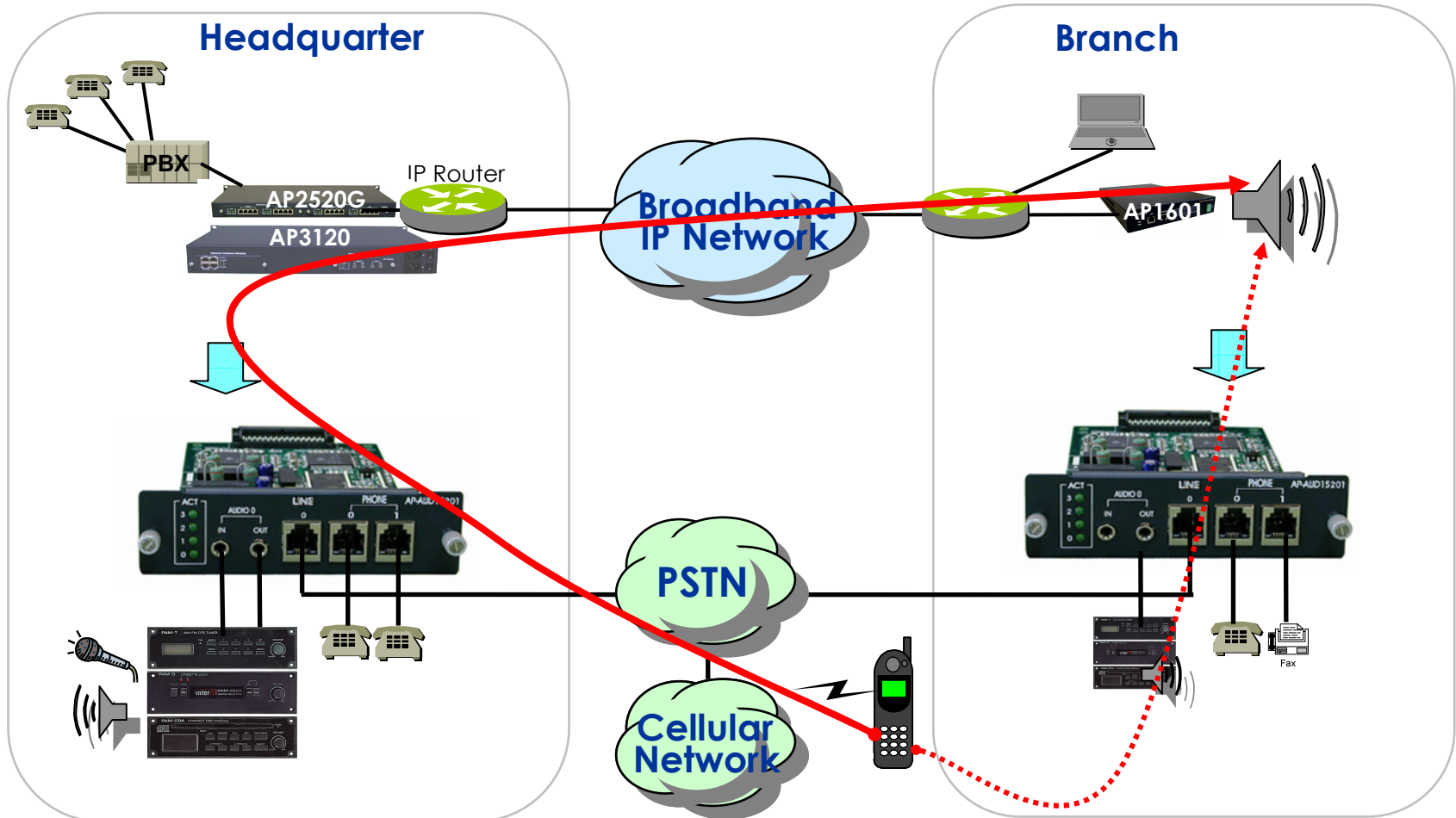
• Remote Access Broadcasting

- AP-AUD1S2O1 Module based AP3120
- Via Analog Phone and Cellular Phone
- Access Control with IVR Function
- Cellular Phone → FXO Port → Audio Streaming
- Available Direct Connect to Terminal (AP1601...)
- Support Broadcasting and VoIP Services Concurrently



AP1601 System Configuration

AP-AUD1S2O1 based Network



The Vision of Next Generation Audio Broadcasting

AP1601 Management Scheme



AP1601 Management Scheme

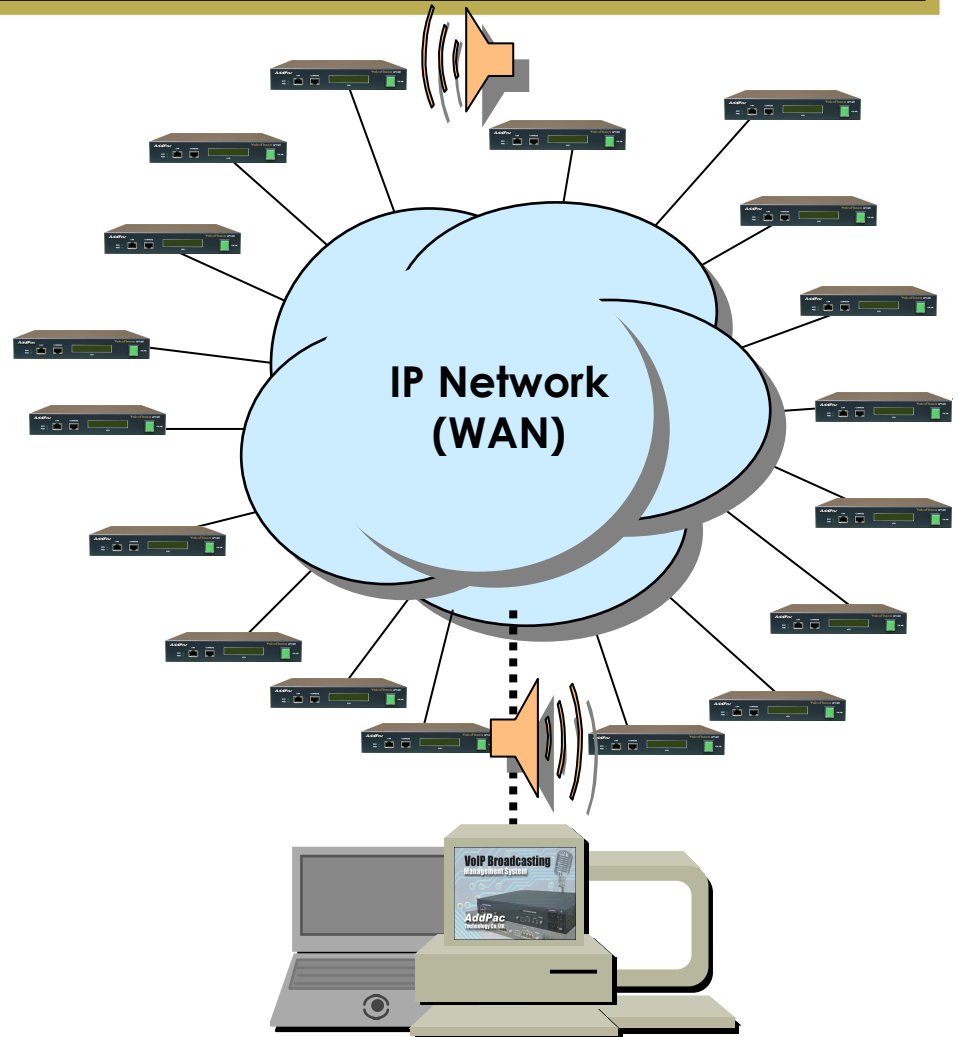
AP-BMS, Broadcasting Management System (1)

- **AP-BMS**

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

- **Requirements Hardware Platform**

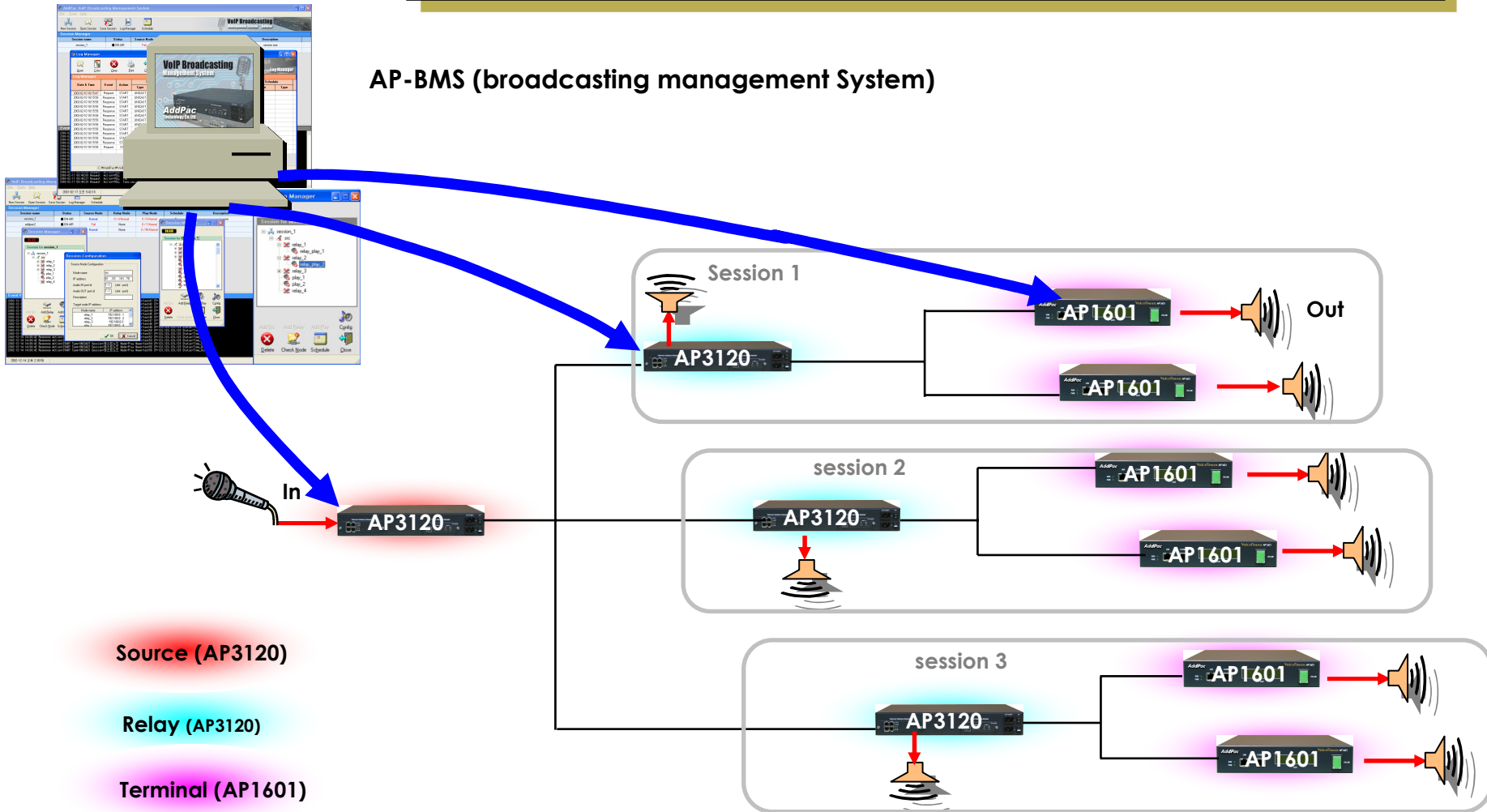
- Over 1GHz Intel Pentium 4 Machine
- Over 1GB Main Memory
- Over 40GB Hard Disk Memory
- Microsoft Windows Advanced Server or Windows 2000 Server or Windows XP Professional



AP1601 Management Scheme

AP-BMS, Broadcasting Management System (2)

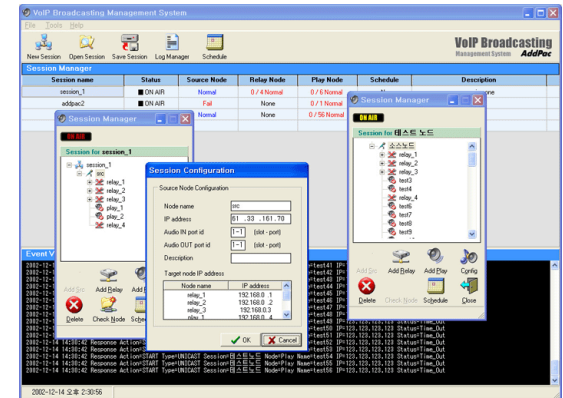
AP-BMS (broadcasting management System)



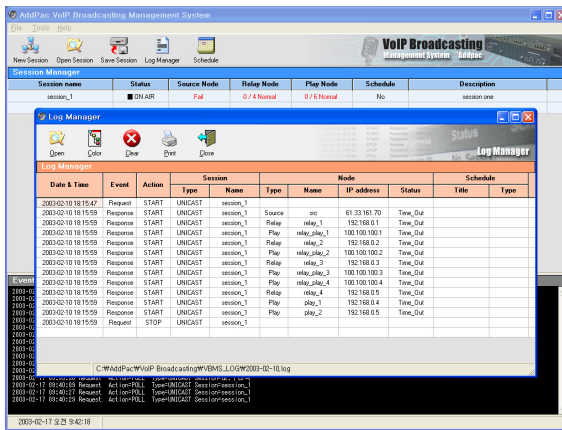
AP1601 Management Scheme

AP-BMS, Broadcasting Management System (3)

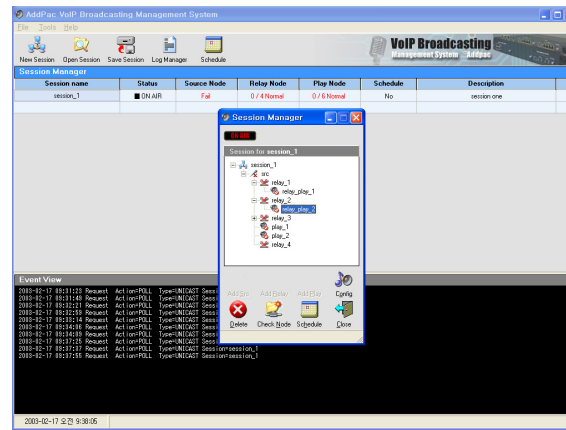
- **AP-BMS, GUI Management Software**
 - Service Group Configuration
 - Scheduled Broadcasting
 - Status Monitoring
 - Report Service
 - Embedded Media File Manager



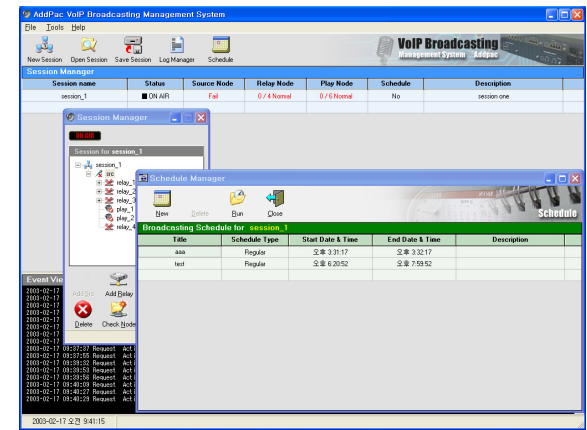
Main Interface



Report Manager



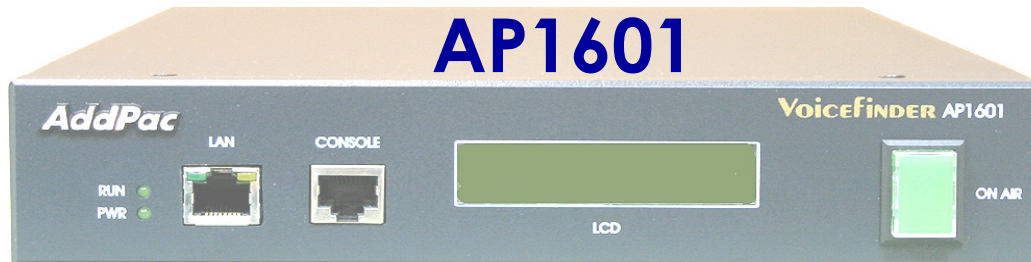
Service Group Configuration



Scheduled Broadcasting

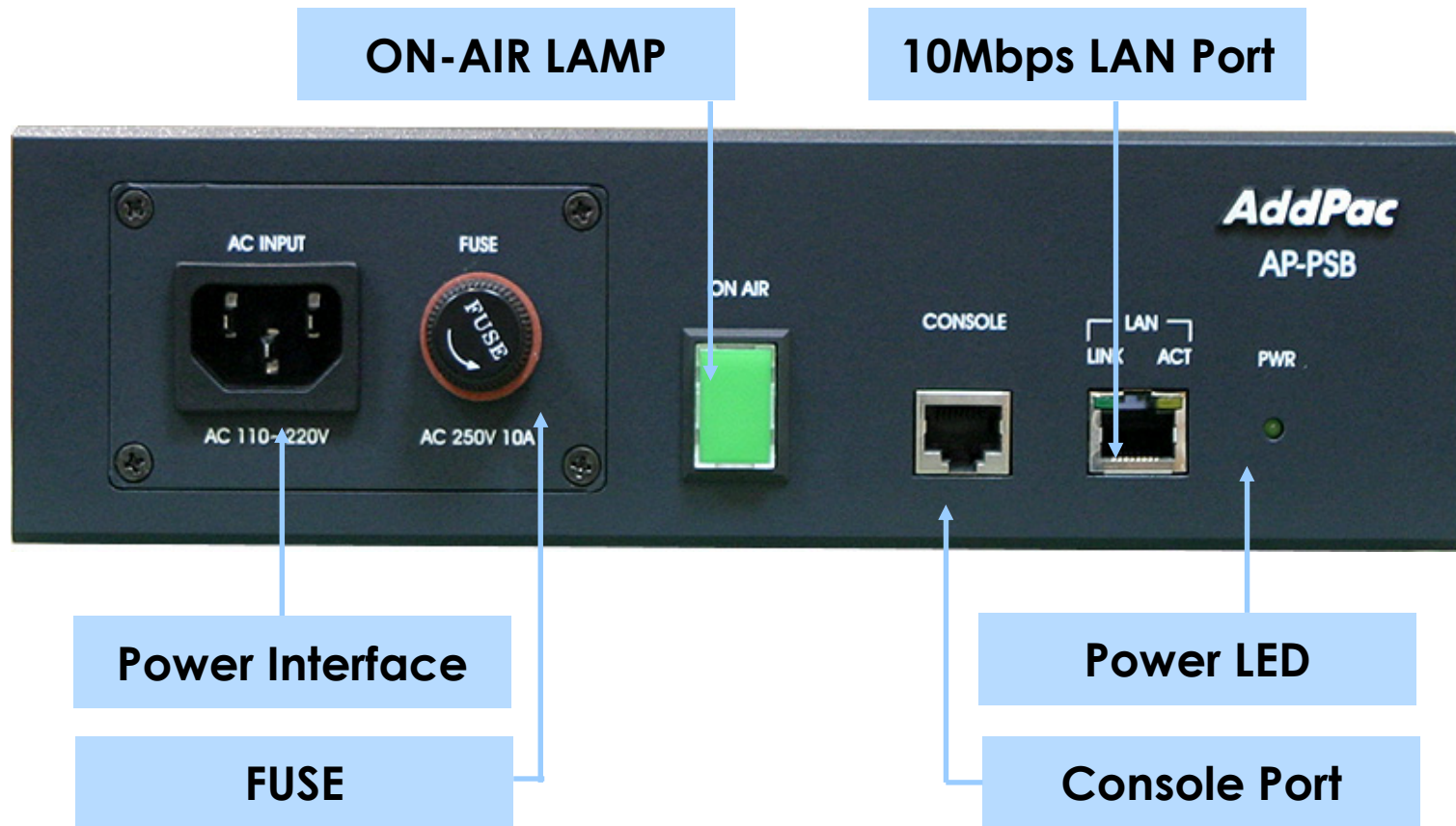
The Vision of Next Generation Audio Broadcasting

AP1601 Optional Components



AP1601 Optional Components

AP-PSB, Power Switching Box Network Interface (1)



AP1601 Optional Components

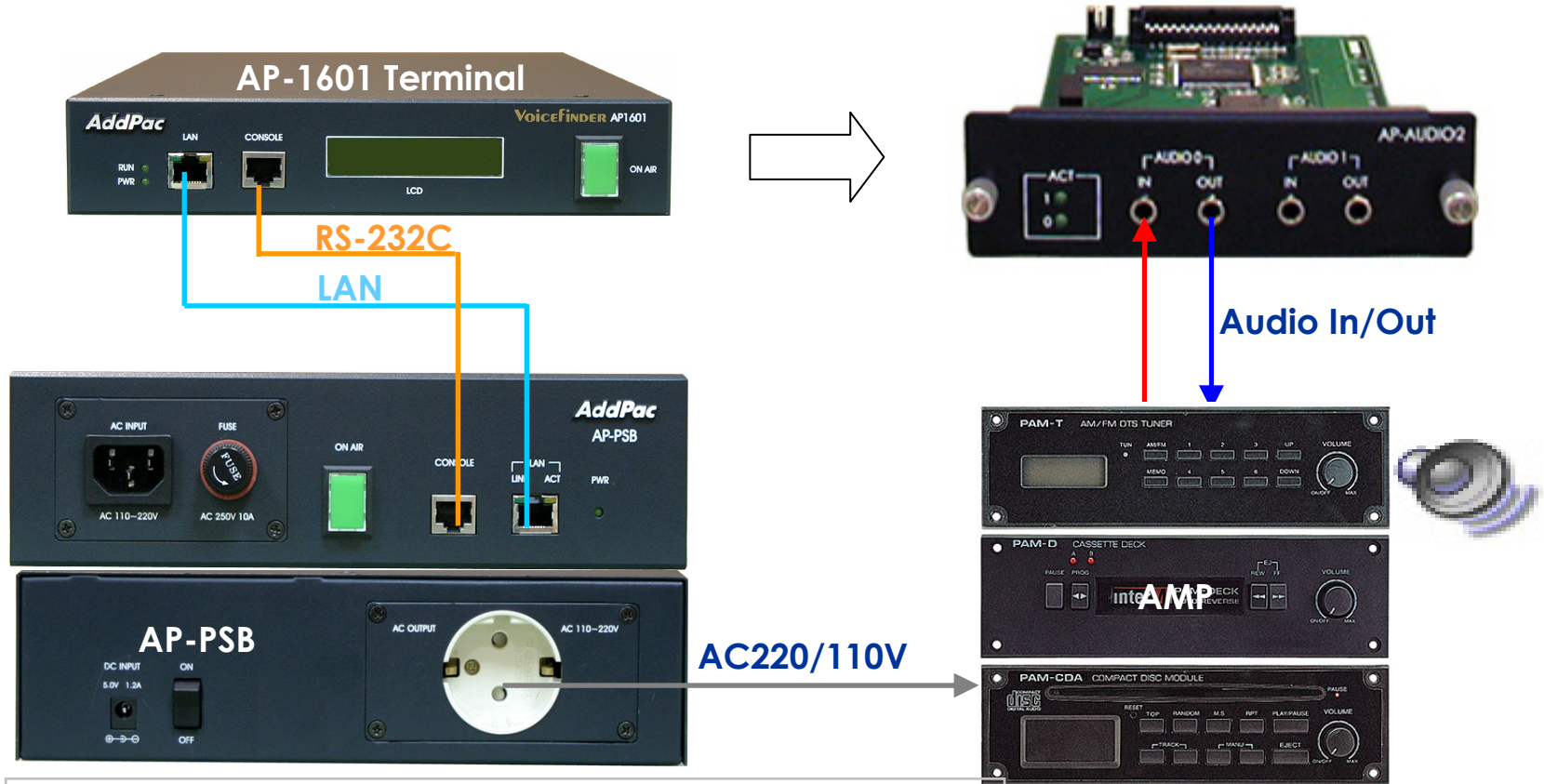
AP-PSB, Power Switching Box Network Interface (2)



Microprocessor	RISC CPU
Memory	Flash Memory : 512Kbyte / SDRAM Memory : 32MB
Network Interface	1-Port 10Mbps Ethernet Interface (1 x RJ45) 1-Port Asynchronous Serial Interface (1 x RJ45)
Power Interface	AC Inlet, AC Outlet (to Amplifier), DC Input, DC Output
Power Requirement	External Power Adaptor / 110~220VAC , 50/60Hz, 5Watt
Operating Temperature	0°C to +50°C (32° to 122°F)
Storage Temperature	-40°C to +85°C (-40° to 185°F)
Relative Humidity	5% ~ 95%

AP1601 Optional Components

AP-PSB, Power Switching Box Network Interface (3)



- Can used for amplifier power ON-OFF control as an accessory
- Power On-Off Control via RS-232C or LAN Port
- AP1601 will be operated as a Master equipment

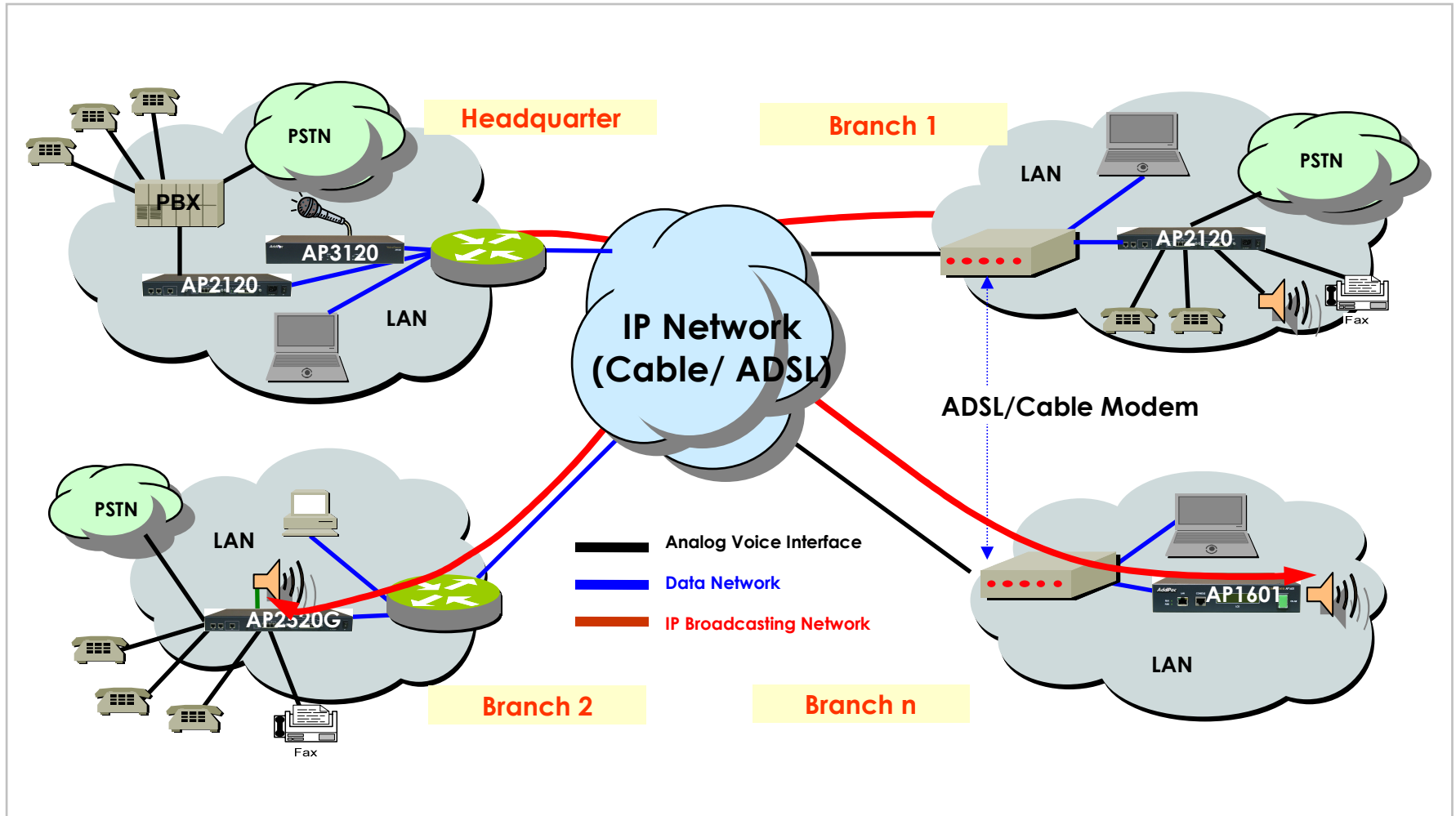
The Vision of Next Generation Audio Broadcasting

Network Configuration & Case Study



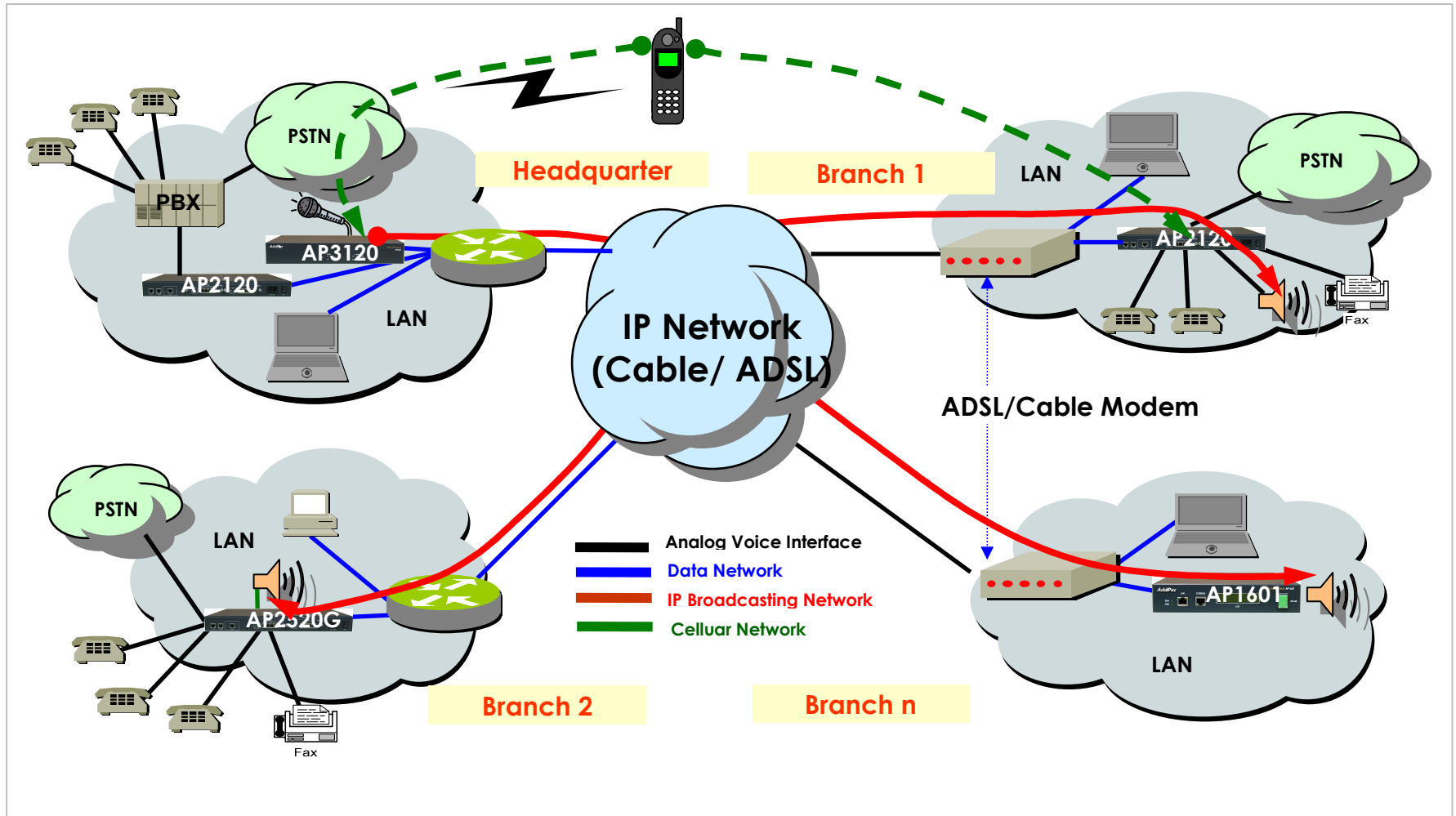
Network Configuration & Case Study

VoIP, Data and IP Broadcasting Network



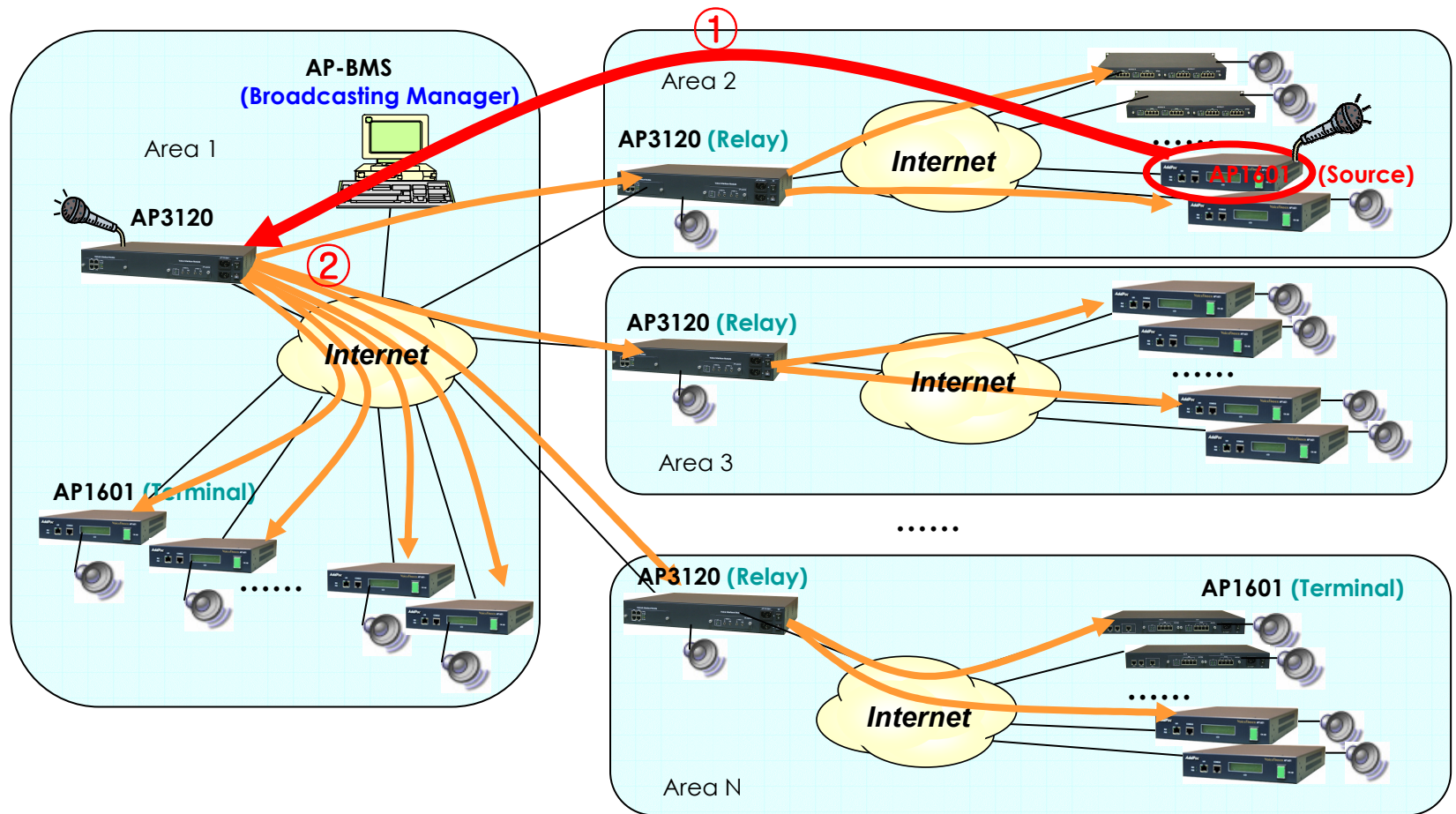
Network Configuration & Case Study

Remote Access Broadcasting Network



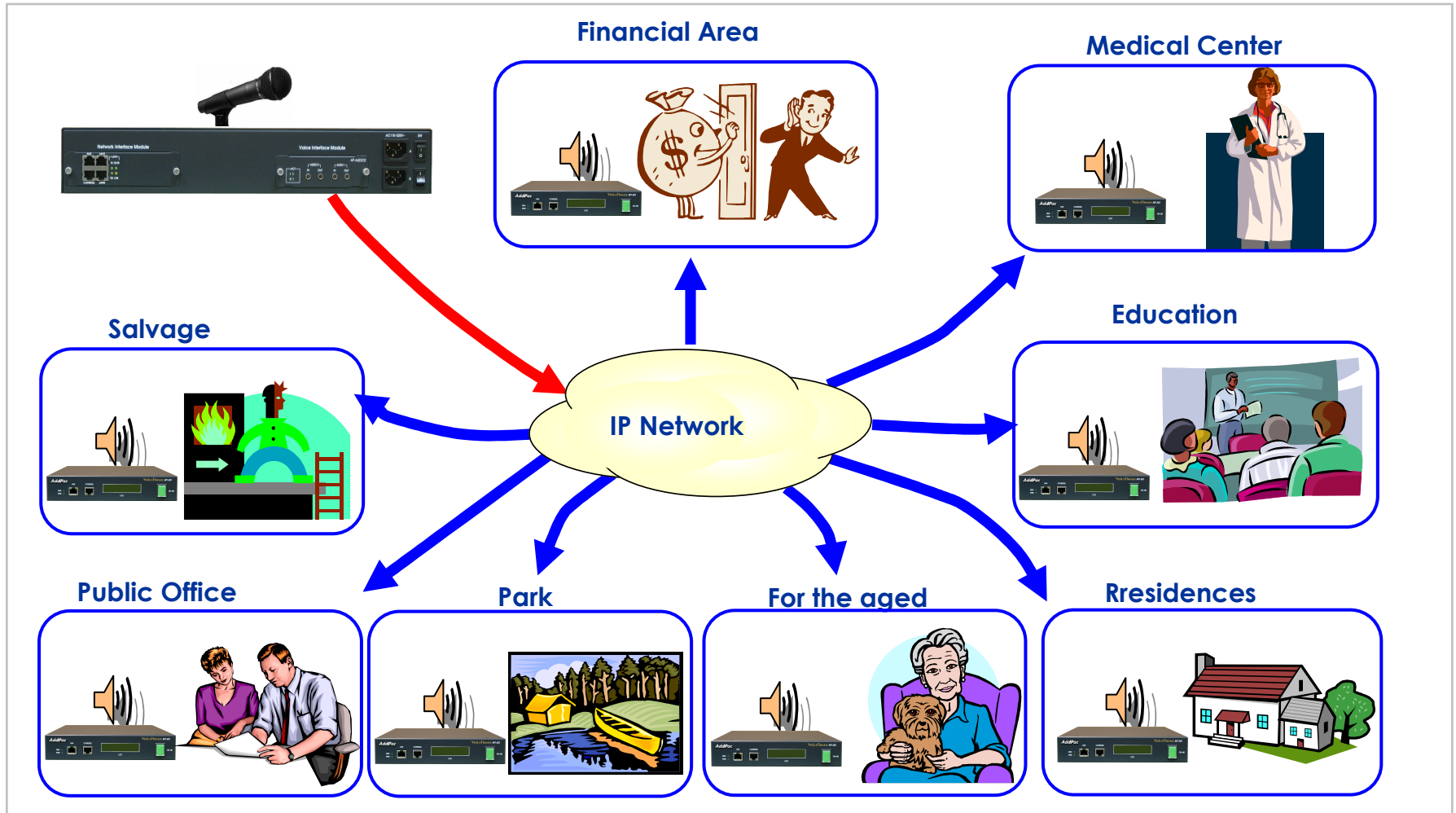
Network Configuration & Case Study

Terminal Side Source Line-in Configuration



Network Configuration & Case Study

Comprehensive Services



The Vision of Next Generation Audio Broadcasting

Appendix



Appendix

AP1601 hardware Specification

AP1601 Broadcasting Server	Basic Specifications
CPU	32Bit RISC Microprocessor
Audio Interface	AP-AUDIO2, AP-AUD1S3, AP-AUD1S2O1, AP-MP3
Voice Interface	3-Ports, or 2-Ports FXS((AP-AUD1S3/AUD1S3), 1-Ports FXO(AUD1S2O1) Interface
Ethernet Interface	1-Port 10/100Mbps Ethernet Interface(RJ-45)
Console Port	1-Port RS-232C Console Port(RJ-45)
Flash Memory	2MB High-speed Flash Memory
Base Memory	32MB High-speed SDRAM
Boot Memory	512KB Flash Memory
Power Requirement	VAC110~220V, 50/60Hz, 25Watt
Operating Temperature	0°C ~ 50°C (32 °F ~ 122°F)
Storage Temperature	-40°C ~ 85°C (-40°C ~ 185°F)
Relative Humidity	5% ~ 95% (Non-condensing)
Dimensions	65×441×323mm (H x W x D)
Weight (g)	1.2Kg

Appendix

Services Comparison Table

	IP based Broadcasting	Legacy Broadcasting
Network	IP Network including Internet	PSTN
Network Cost	Low	High
Protocol	IP Standard	Private Protocol
Scalability	Unlimited	Limited
Interactive Comm.	Yes	NO
Managing Cost	Low	High
Control Env.	GUI based SW	HW level Control
Remote Control	Yes	No
Easy Use	Yes	No
Audio Level Quality	Yes	NO
Sampling rate	8~22.5KHz	Only 8KHz

Appendix

AP1601 Ordering and Pricing

- **AP1601 IP Broadcasting Terminal**

- IP Broadcasting Terminal Hardware

- 32bit RISC CPU
- 1-Port Fast Ethernet
- 1-Port RS-232C Console
- Including Network Cable Set
- Built-in APOS Internetworking Software
- Including 1-Year Hardware Warranty

- AP1601-AUDIO2 2Pair Analog Audio-In/Out

- AP1601-MP3 2Pair Analog Audio-In/Out (High Quality Audio Band)

- AP1601-AUD1S3 1Pair Analog Audio-In/Out , FXS 3-Ports

- AP1601-AUD1S2O1 1Pair Analog Audio-In/Out , FXS 2-Ports, FXO 1-Port

- **Pricing**

- AddPac Technology Regional Sales Managers
- Authorized Sales and Marketing Representatives
- Please Contact www.addpac.com

Appendix

Detail information about IP Broad. Solution

- **AP3120 IP Broadcasting Server** → [Move to Web](#)
- **AP1601 IP Broadcasting Terminal** → [Move to Web](#)
 - **AP-AUDIO2 Audio Module** → [Move to Web](#)
 - **AP-MP3 High Quality Audio Band Module** → [Move to Web](#)
 - **AP-AUD1S3 Audio Module** → [Move to Web](#)
 - **AP-AUD1S2O1 Audio Module** → [Move to Web](#)
 - **AP-PSB Power switching Box** → [Move to Web](#)

- **Audio Band IP based Broadcasting Solution** → [Move to Web](#)
- **Voice Band IP based Broadcasting Solution** → [Move to Web](#)

Thank you !

www.addpac.com

sales@addpac.com

Phone : +82 2 568 3848

Fax : +82 2 568 3847