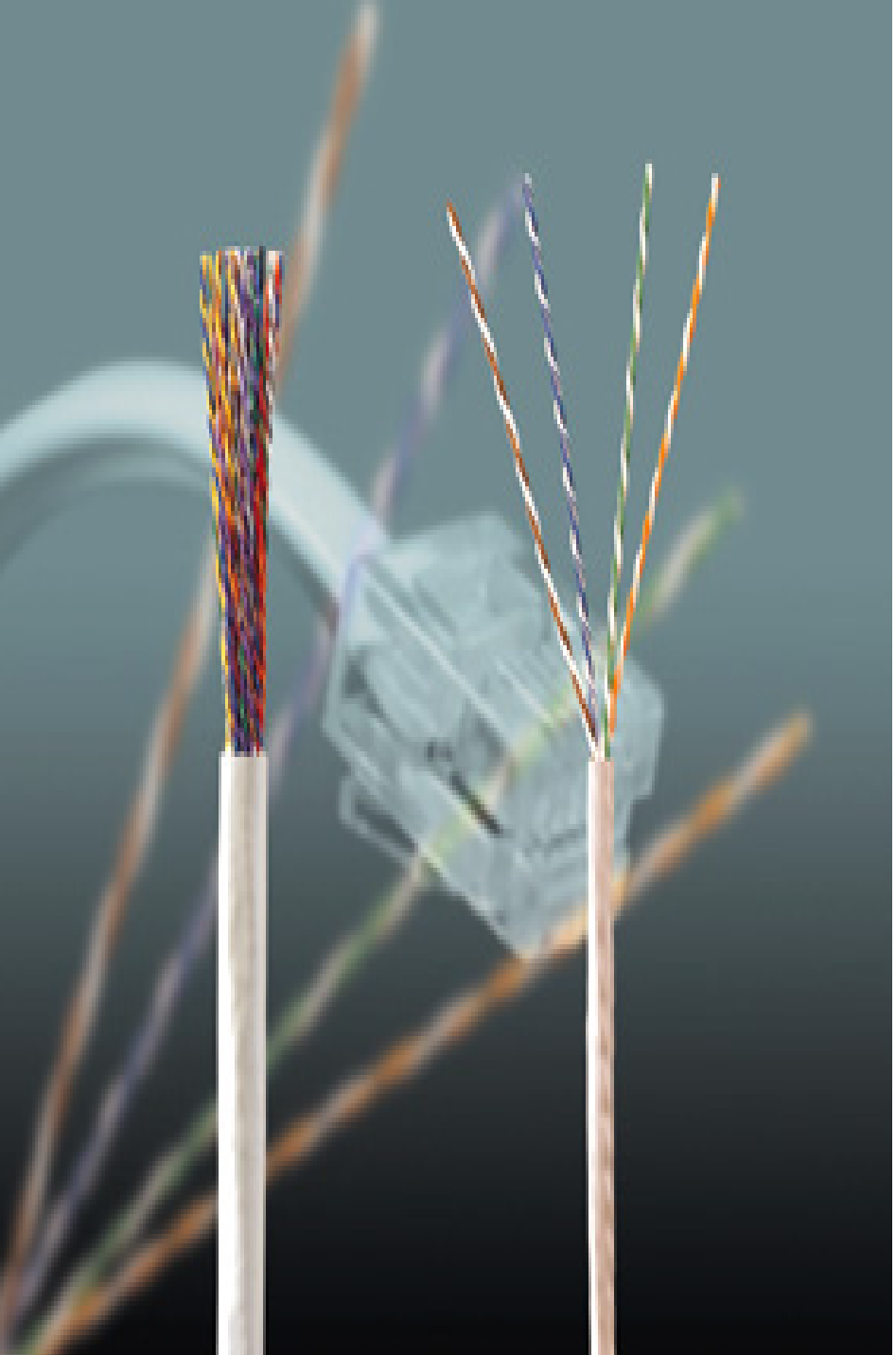


PassFinder

AP2830

Multi-service Router



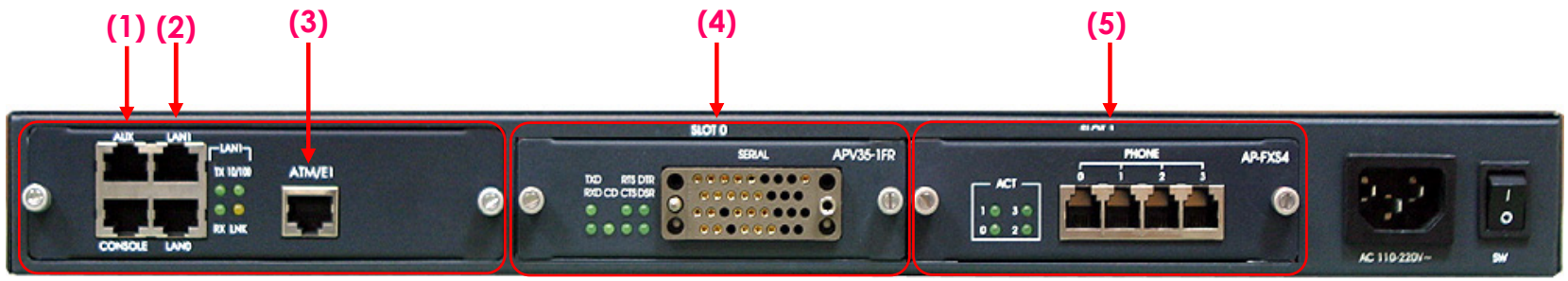
Technical Sales and Marketing

AddPac Technology

www.addpac.com

PassFinder AP2830 Multi-service Router

Multi-Service Router Connectivity



No.	Interface	Explanation
(1)	Asynchronous Serial	Two(2) RS-232C serial ports for Local system management
(2)	Ethernet	Two(2) 10/100Mbps Ethernet Ports for LAN interface
(3)	WAN Interface	1-Port E1 ATM Interface ,4-port Multiple E1/T1 ATM/IMA Interface, ATM-OC3 Metro ATM Interface, Metro Ethernet Interface
(4)	Module Slot 0	4-Port FXS, 4-Port FXO, 4-Port E&M, 1-Port Digital E1/T1, 1Port Frame-Relay Module, Audio, MP3 Module is available
(5)	Module Slot 1	

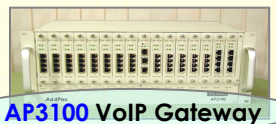
AddPac VoIP Products Road-Map

Multi-services Specific

Application Specific

Voice over IP Solutions

1/2/4/8/16~60-Ports Voice



AP3100 VoIP Gateway

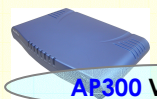
NGN VoIP



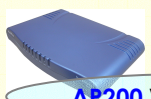
AP2120 VoIP Gateway



AP100x/1100 VoIP G/W Series



AP300 VoIP G/W Series



AP200 VoIP G/W Series

PSTN Dial-UP



AP160 VoIP Gateway

4/8/16, 30~120-Ports Voice



ATM Digital T1/E1

AP2850 Multi-service Router



ATM Digital T1/E1

AP2830 Multi-service Router



NEW Secure VoIP

AP2520S Secure VoIP Gateway



Digital T1/E1

AP2520R VoIP Router



Digital T1/E1

AP2520G VoIP Gateway



Digital T1/E1

AP2110 VoIP Gateway

VoIP Network Management SW



AP-VPMS S/W Solution

Voice & FAX Broadcasting System



AP3120 Voice Broadcasting System



AP3220 FAX Broadcasting System



AP1601 Voice Broadcasting Terminal

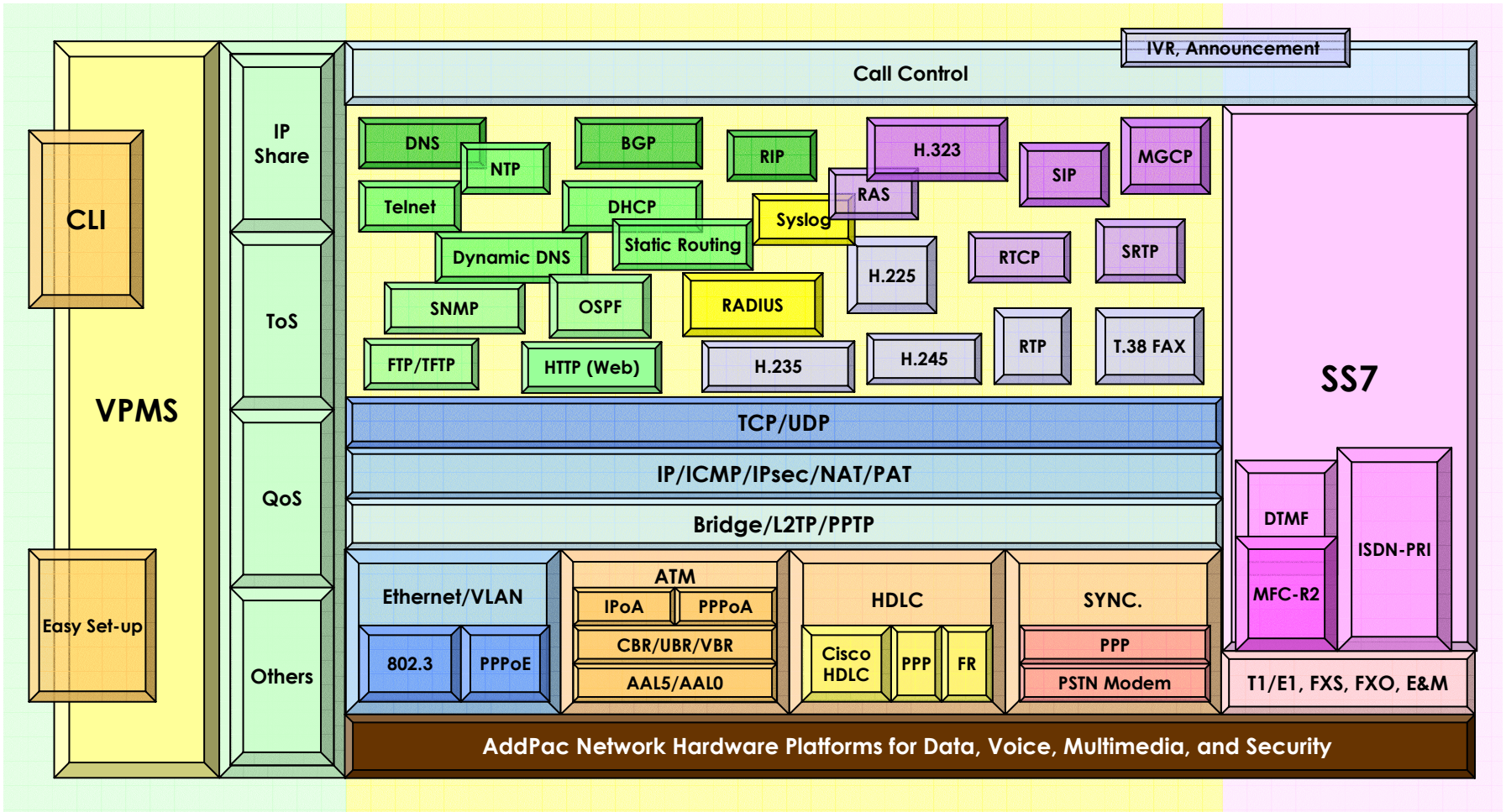
General Purpose VoIP Networking

VoIP & Data Networking

IP Application Solutions

AP2830 Multi-service Router Product Overview

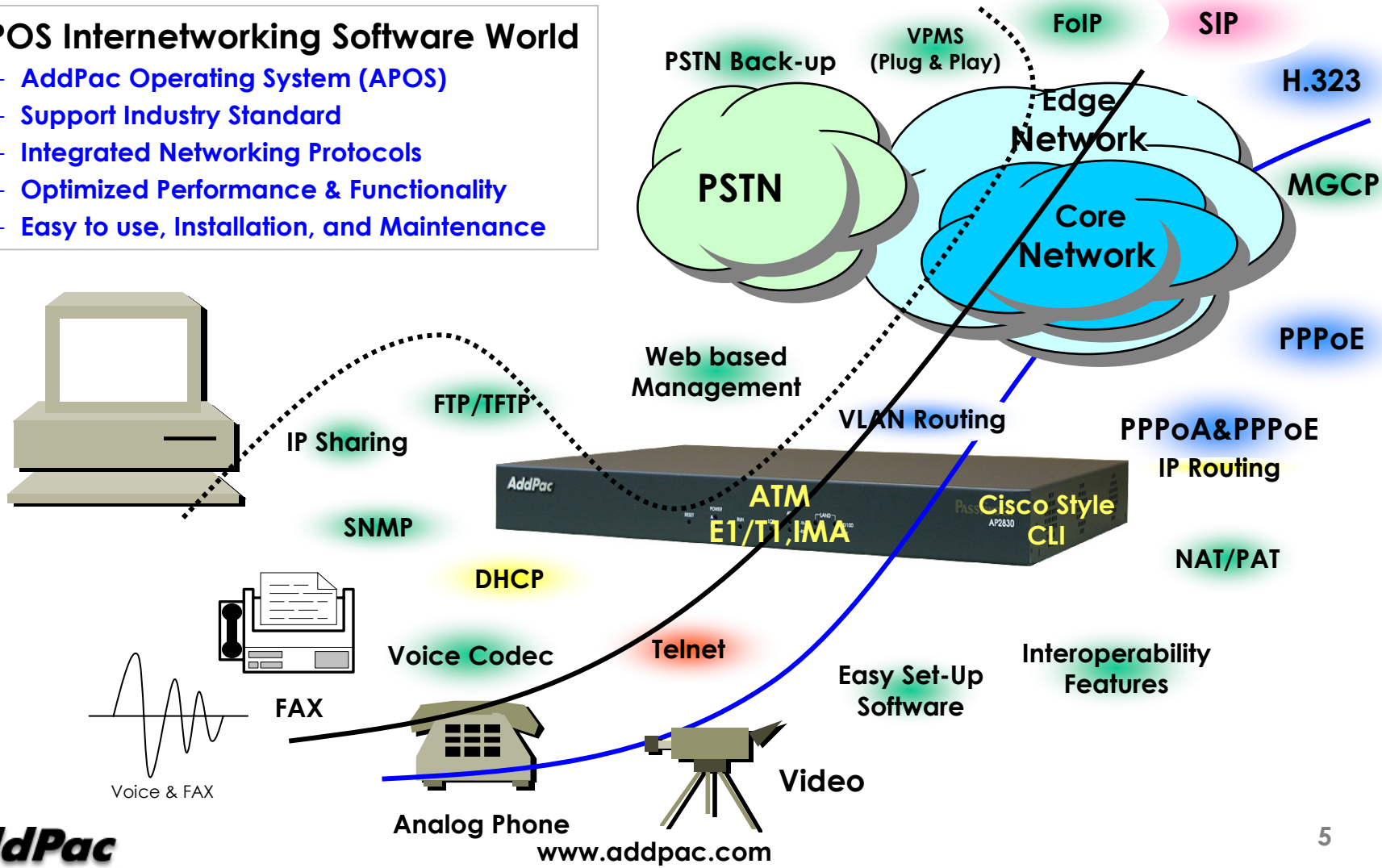
APOS Internetworking Protocol Stack



AP2830 Multi-service Router Product Overview

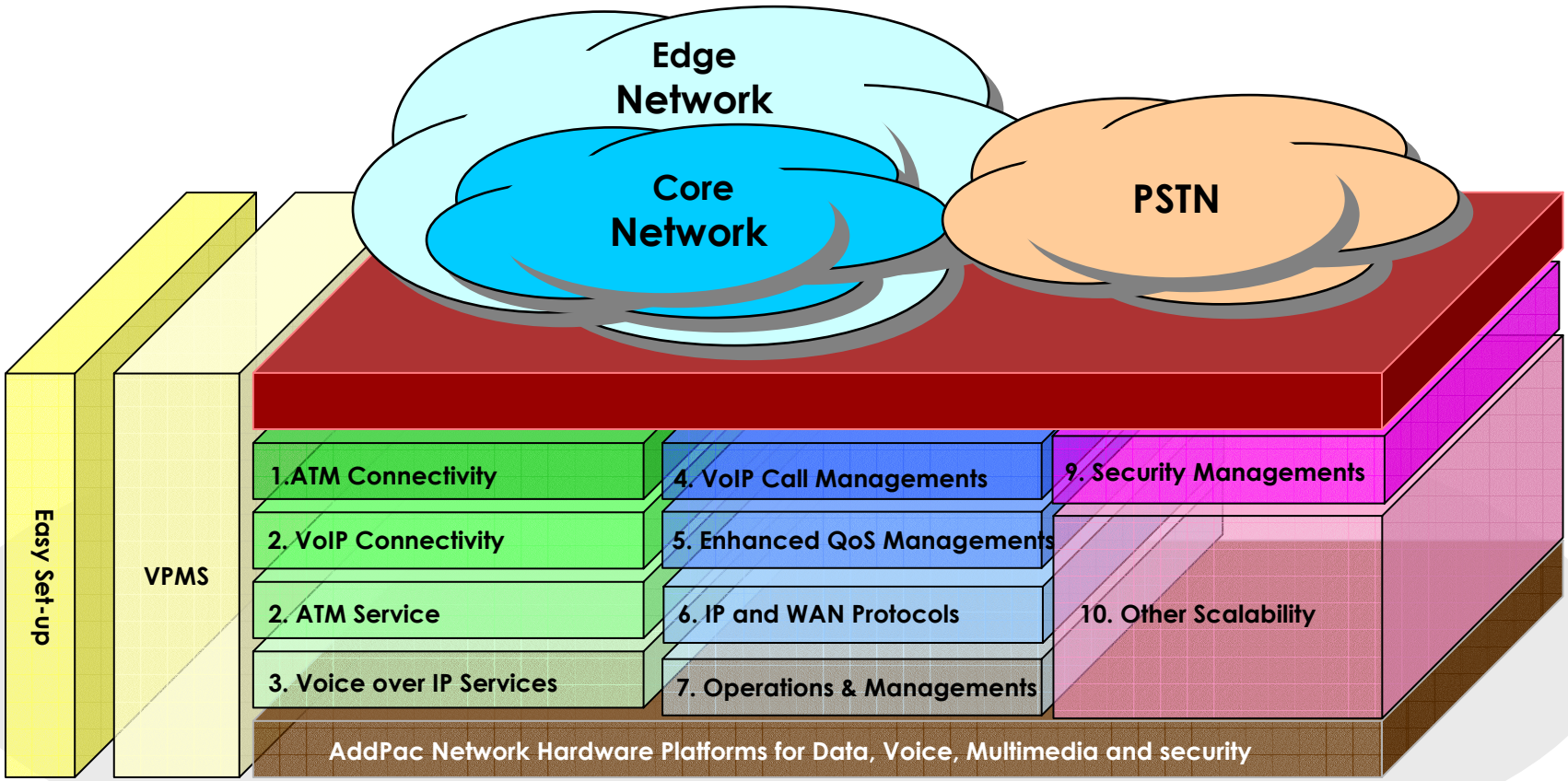
APOS Internetworking S/W World

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



AP2830 Multi-service Router Product Overview

APOS Internetworking S/W World (cont.)

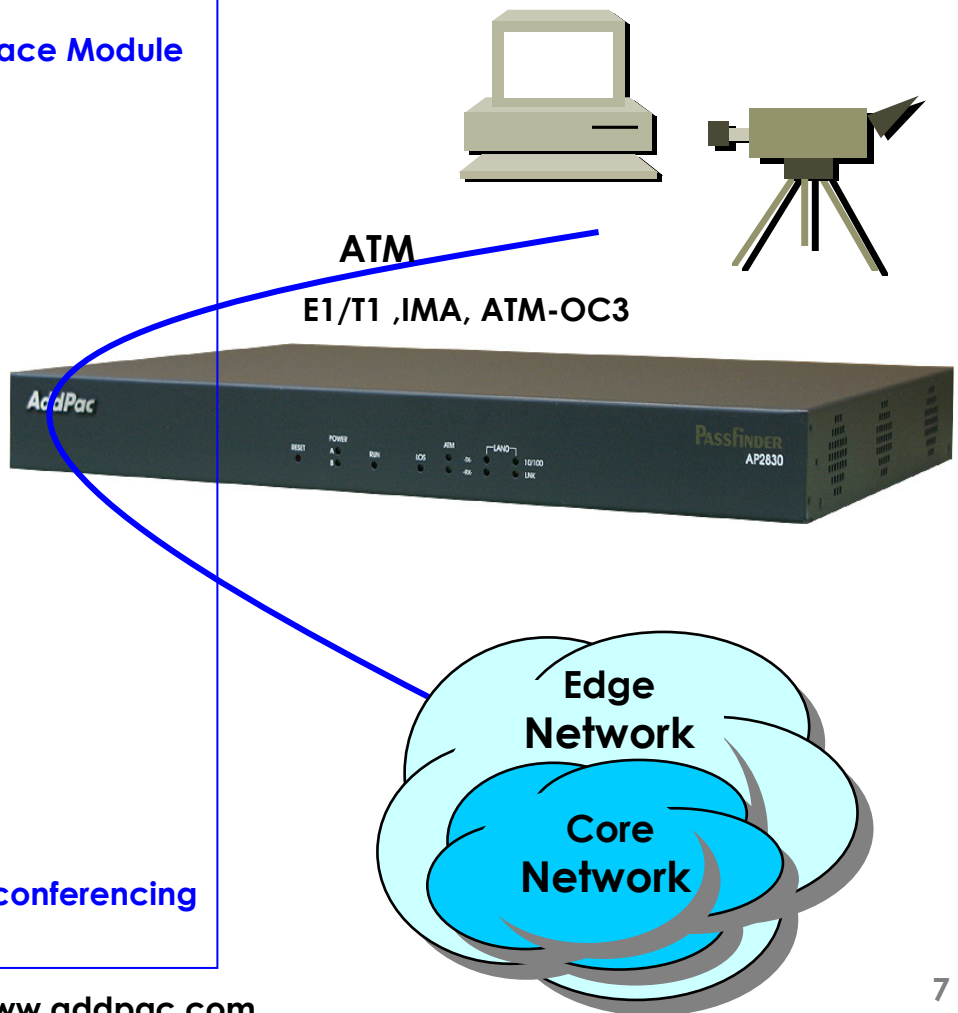


AP2830 Multi-service Router Product Overview

Multi-Service Router Connectivity

- **Network Interface Modules**
  - @ 4 E1 ATM(IMA,Independent E1)Network Interface Module
    - 4-port ATM Multiple E1/T1, IMA Interface Port
    - 2-Port 10/100Mbps Fast Ethernet Port
    - 2-Port RS232C Asynchronous Serial Port
  - @ 1 E1 ATM Network Interface Module
    - 1port E1/T1 ATM Port
    - 2-port 10/100Mbps Fast Ethernet Port
    - 2-port RS232C Asynchronous Serial Port
  - @ ATM-OC3 Network Interface Module
    - 1port ATM-OC3 Port
    - 2-port 10/100Mbps Fast Ethernet Port
    - 2-port RS232C Asynchronous Serial Port
  - @ Ethernet Network Interface Module
    - 2-port 10/100Mbps Fast Ethernet Interface
    - 2-port RS232C Asynchronous Serial Port

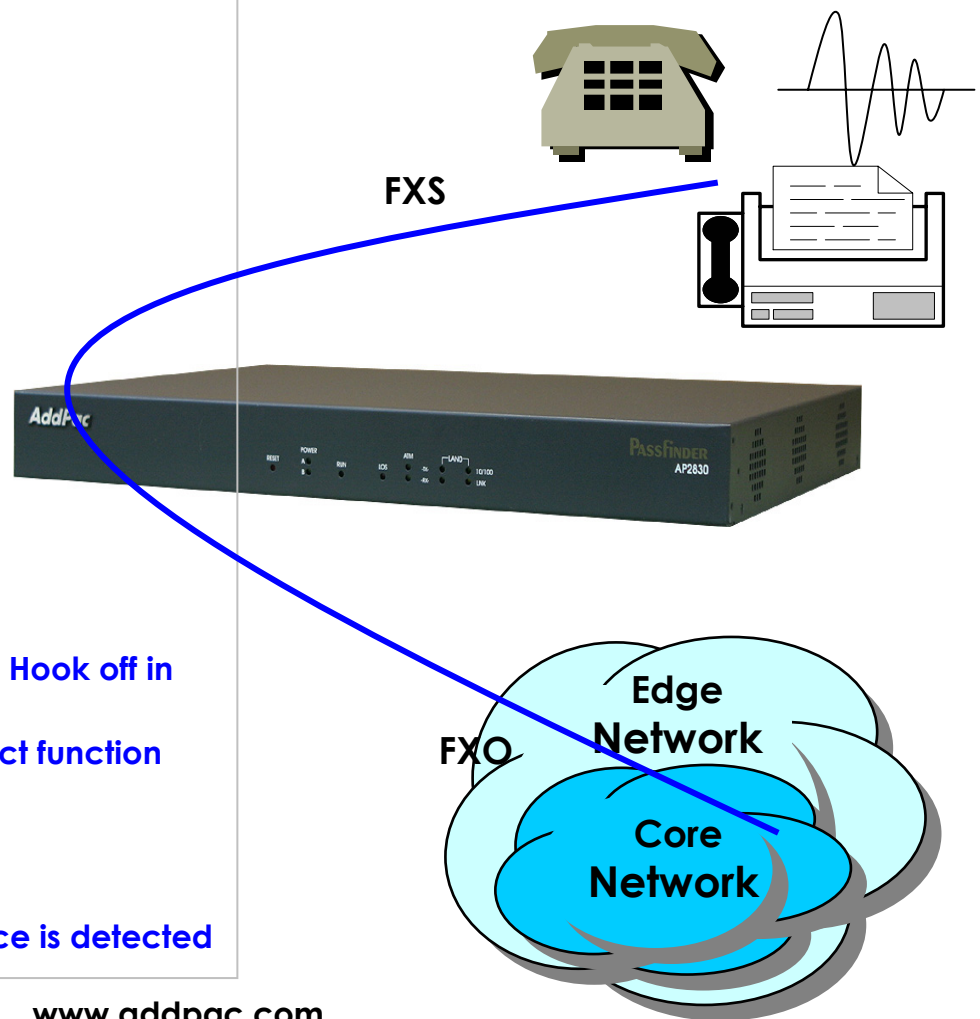
- **AP-FRV35 (1-port Frame-Relay)**
  - 1-port Frame-Relay Network Card
  - Support various application such as video conferencing solutions



AP2830 Multi-service Router Product Overview

Multi-service Router Connectivity

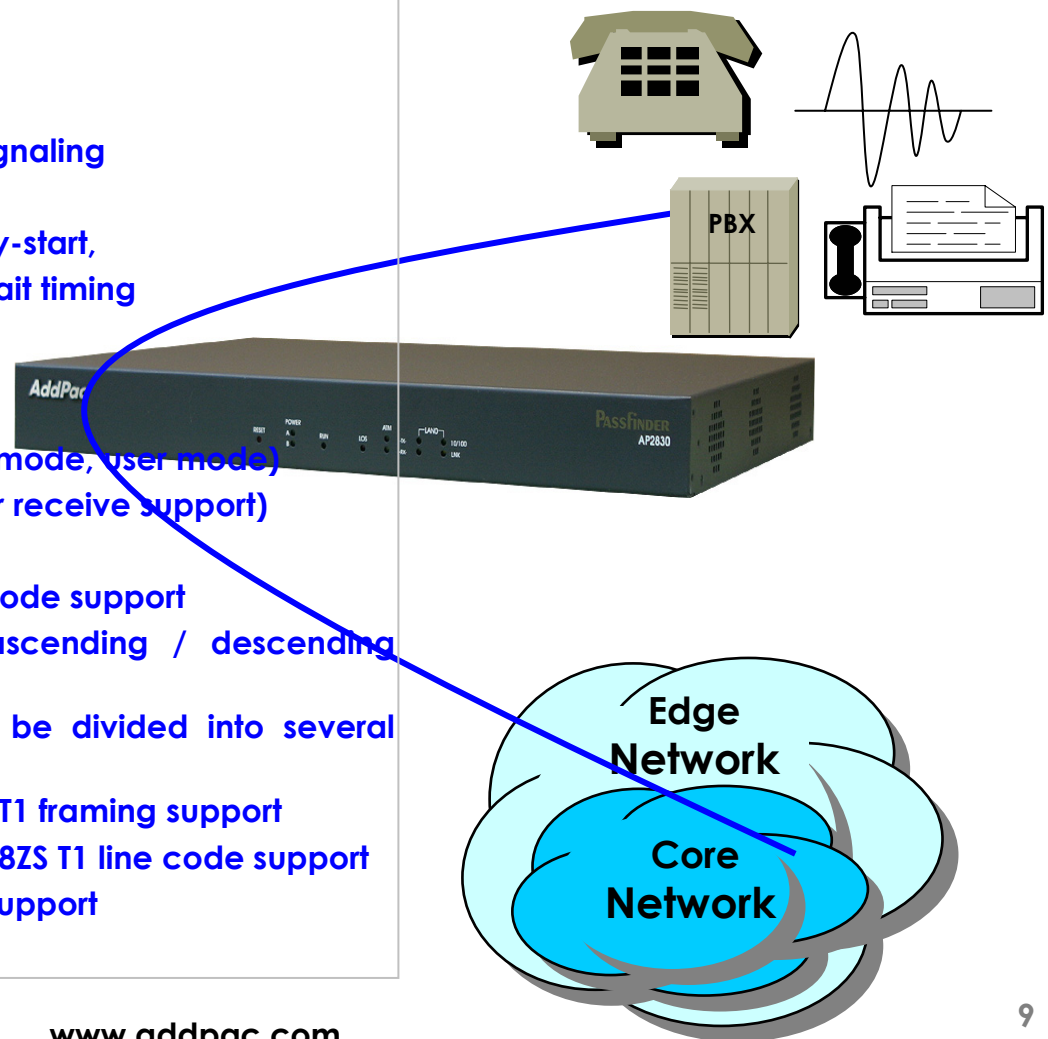
- **FXS**
  - RJ-11 Hardware interface
  - Polarity inverse generation function
  - Caller-id generation function
  - Busy-out function support
  - Ring cadence setting function
  - Ring frequency setting function
  - European type II telephone support
  - Surge protect support
- **FXO**
  - RJ-11 Hardware interface
  - Polarity inverse detection function
  - Caller-ID detection function
  - Busy-out function support
  - PSTN backup or busy-out function with Hook off in case of power down
  - Clear down tone registration and detect function
  - Hook flash timing setting function
  - Ring detect timeout setting function
  - Ring number setting function
  - For outbound calls, connect when voice is detected



AP2830 Multi-service Router Product Overview

Multi-service Router Connectivity

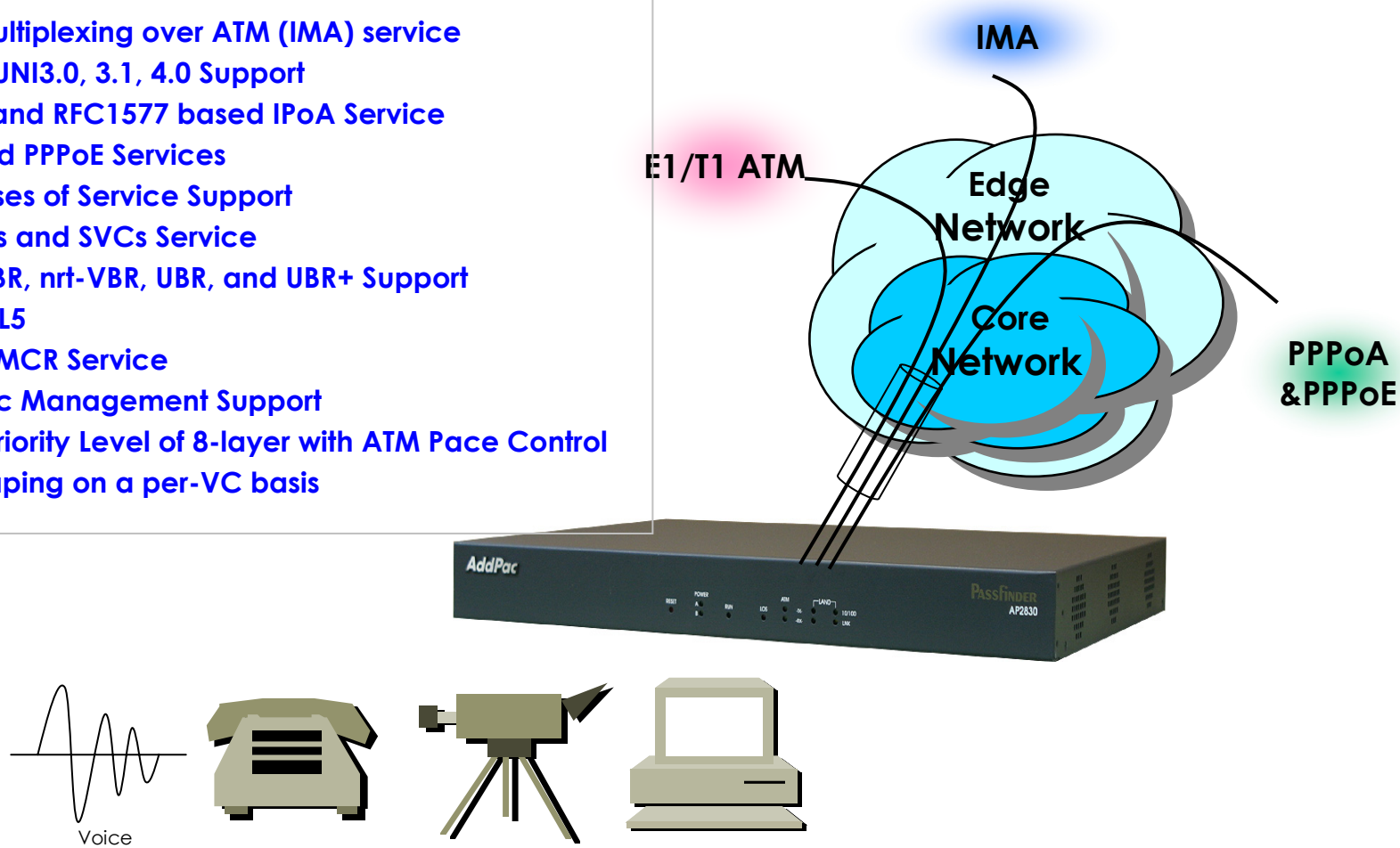
- **E&M**
  - Type 1, 2, 3, 5 support
  - 2-wire, 4-wire support
  - Delay-dial, Immediate, Wink-wait signaling support
  - DIalout-delay, Delay-duration, Delay-start, Wait-wink, Wink-duration, Wink-wait timing setting support
- **E1/T1**
  - ISDN PRI signaling support (network mode, user mode)
  - R2 signaling support (calling number receive support)
  - DTMF signaling support
  - Clock source master mode, slave mode support
  - In case of channel allocation, ascending / descending random support
  - One physical E1/T1 interface can be divided into several logical channel groups
  - Super frame, extended super frame T1 framing support
  - AMI, AMI-BELL, AMI-GTE, AMI-DDS, B8ZS T1 line code support
  - Immediate, Wink-start T1 CAS type support



AP2830 Multi-service Router Product Overview

ATM Service

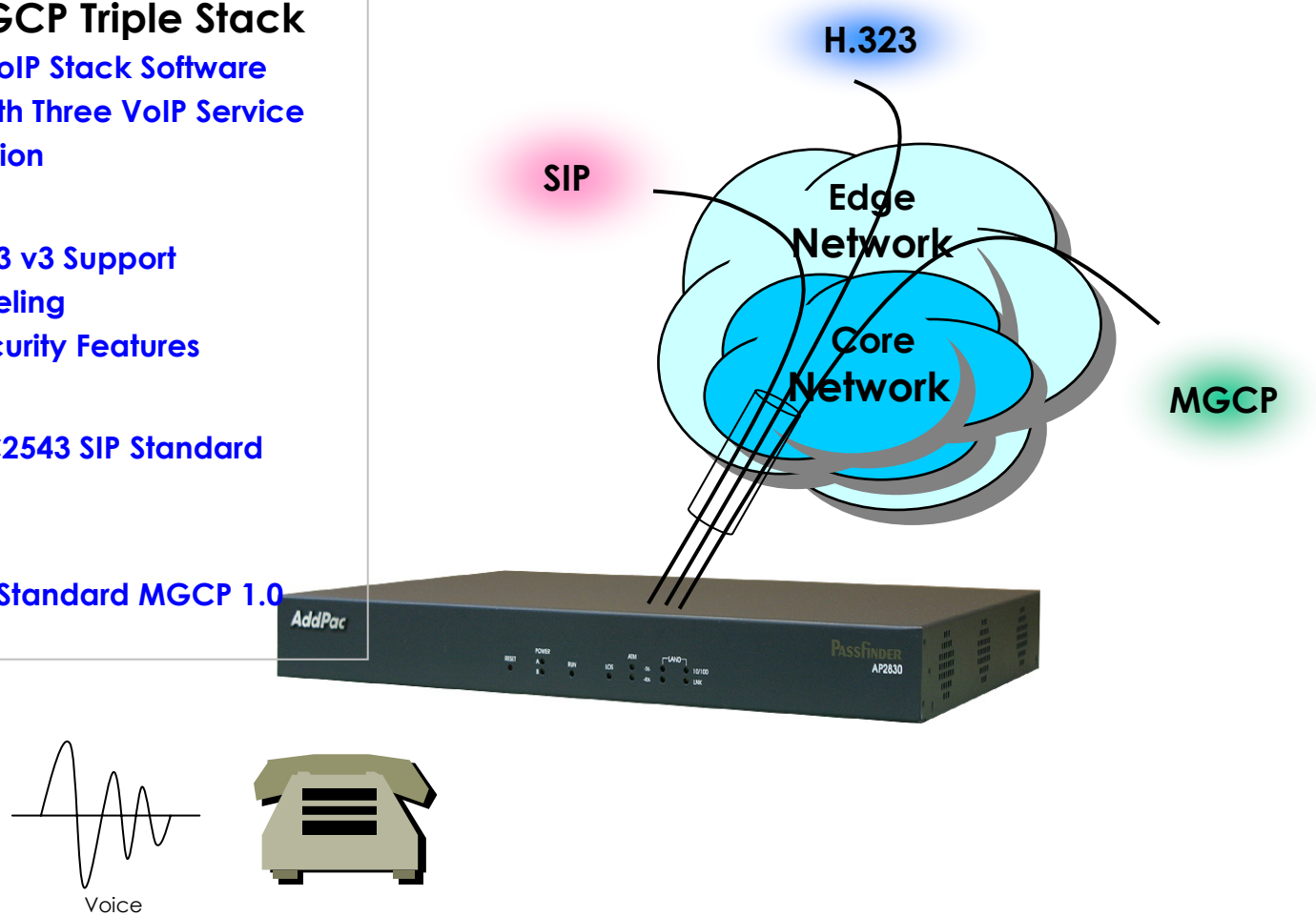
- Inverse Multiplexing over ATM (IMA) service
- ATM PVC UNI3.0, 3.1, 4.0 Support
- RFC1483 and RFC1577 based IPoA Service
- PPPoA and PPPoE Services
- ATM Classes of Service Support
  - -ATM PVCs and SVCs Service
  - -CBR, rt-VBR, nrt-VBR, UBR, and UBR+ Support
  - -AAL0 ,AAL5
- PCR and MCR Service
- ATM Traffic Management Support
- provide Priority Level of 8-layer with ATM Pace Control
- Traffic shaping on a per-VC basis



AP2830 Multi-service Router Product Overview

Voice over IP Service

- **H.323, SIP, and MGCP Triple Stack**
  - Concurrent Triple VoIP Stack Software
  - Single Hardware with Three VoIP Service
  - New APOS-NX Version
- **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
- **MGCP**
  - IETF RFC2705bis-02 Standard MGCP 1.0



AP2830 Multi-service Router Product Overview

Voice over IP Service (cont.)

- **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
  - canMapAlias support
  - Technical prefix (supported prefix) support
  - Public IP assignment in NAT environment



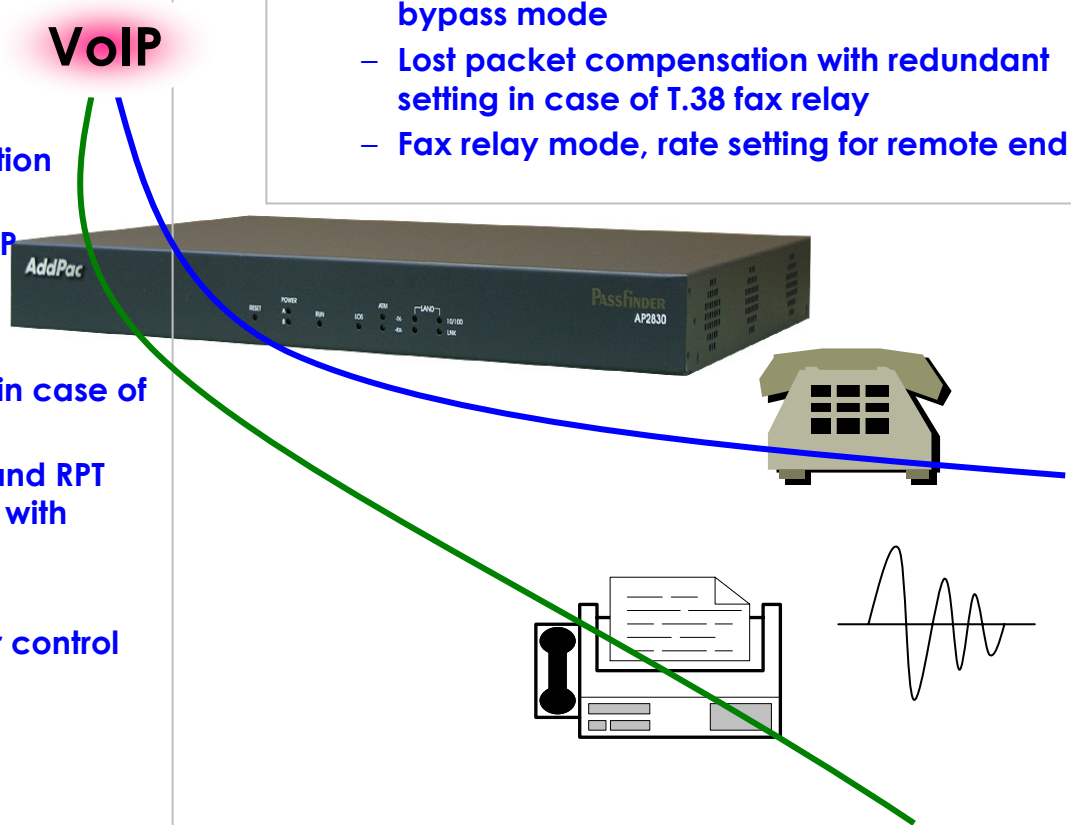
- **SIP**
  - Gateway-based / Endpoint-based registration support
  - Secondary proxy-server assignment function
  - SIP signaling port change function
  - SIP proxy server assignment according to the domain name
  - T.38 real-time fax relay support
  - DTMF relay support with RFC2833 / OPTION message
  - Re-INVITE support
- **MGCP**
  - Secondary call agent assignment function
  - Default package assignment
  - Announcement Server Package, Generic Media Package, Handset Package, Line Package, Trunk Package support
  - MGCP call agent assignment according to the domain name
  - T.38 real-time fax relay support
  - DTMF relay support based on RFC2833

AP2830 Multi-service Router Product Overview

Voice over IP Service (cont.)

- **Voice Codec**
  - 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, MGCP common) based on RFC2833
- **RTP**
  - 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
  - In-band ring-back tone support
  - Virtual ring-back tone support
  - Tone parameter change support

- **FAX**
  - Fax relay mode supporting T.38, inband-T.38, bypass mode
  - Lost packet compensation with redundant setting in case of T.38 fax relay
  - Fax relay mode, rate setting for remote end

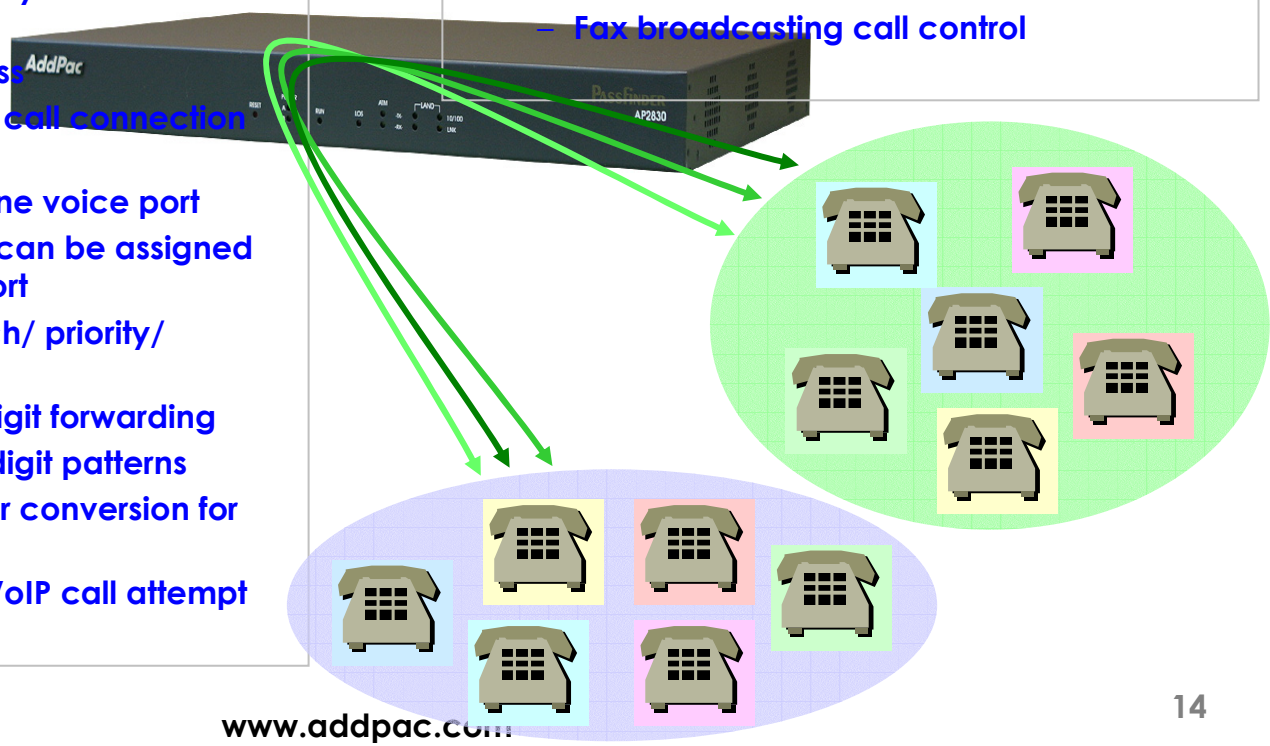


AP2830 Multi-service Router Product Overview

VoIP Call Managements

- 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, MGCP 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

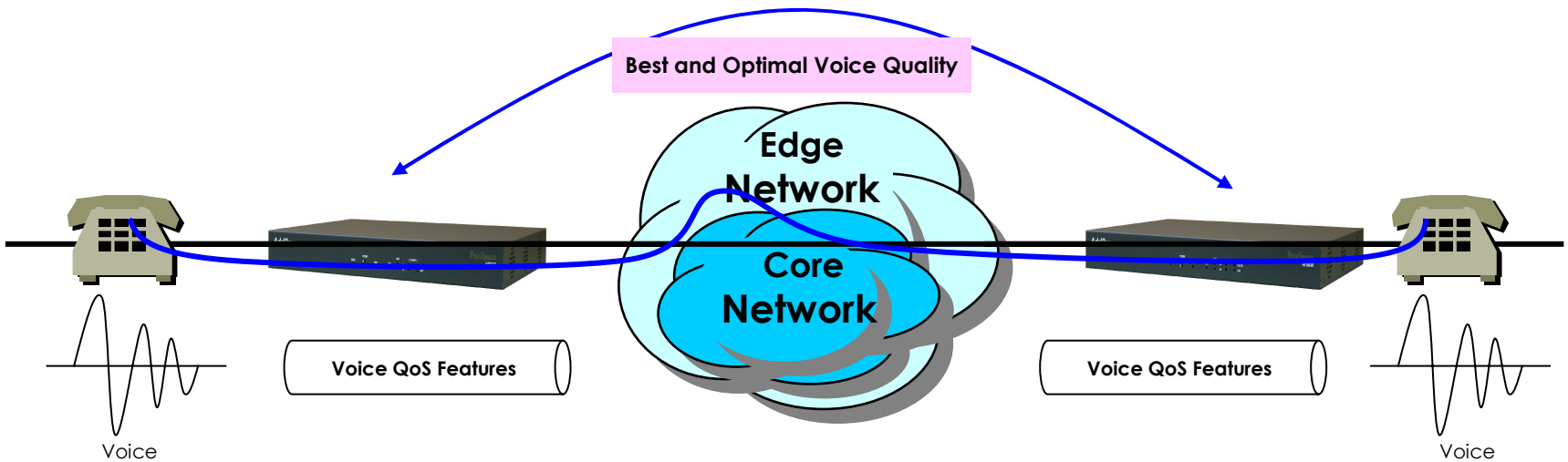


AP2830 Multi-service Router Product Overview

Enhances QoS Managements

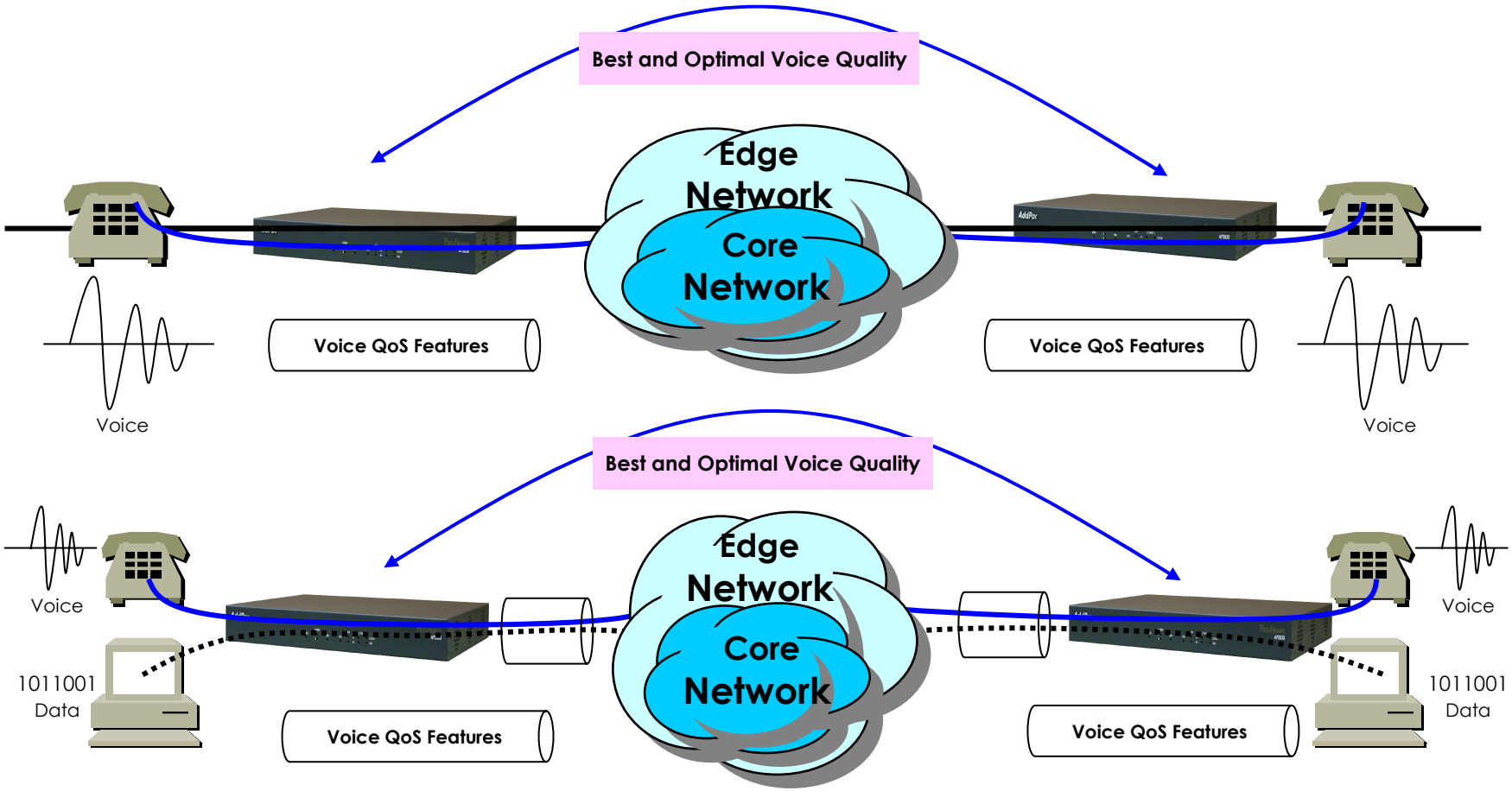
- Enhances Transmit Voice QoS Features
  - Voice Traffic Priority Queuing
  - QoS Service Profiling
  - Providing Virtual Network Transmit Algorithm
  - Real-time Voice Traffic QoS Support
  - RTP Packet Transmit Interval Control
  - Supporting RTP Packet Redundancy Scheme
  - IP Header Control such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

- Enhances Receive Voice QoS Features
  - Dynamic Jitter Buffer Management
  - Error Concealment
  - Support T.38 FAX Data Error Recovery Scheme



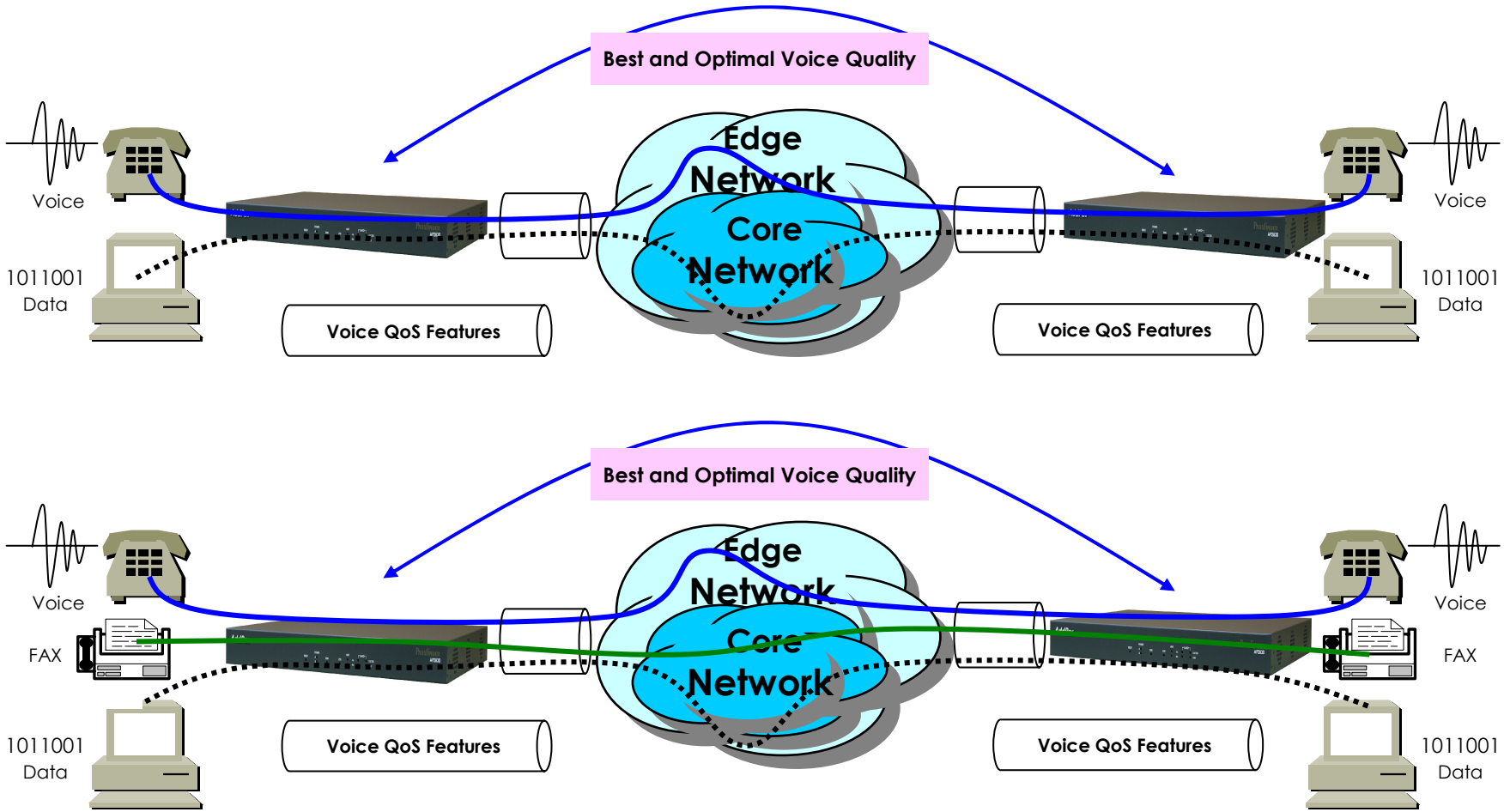
AP2830 Multi-service Router Product Overview

Enhances QoS Managements (cont.)



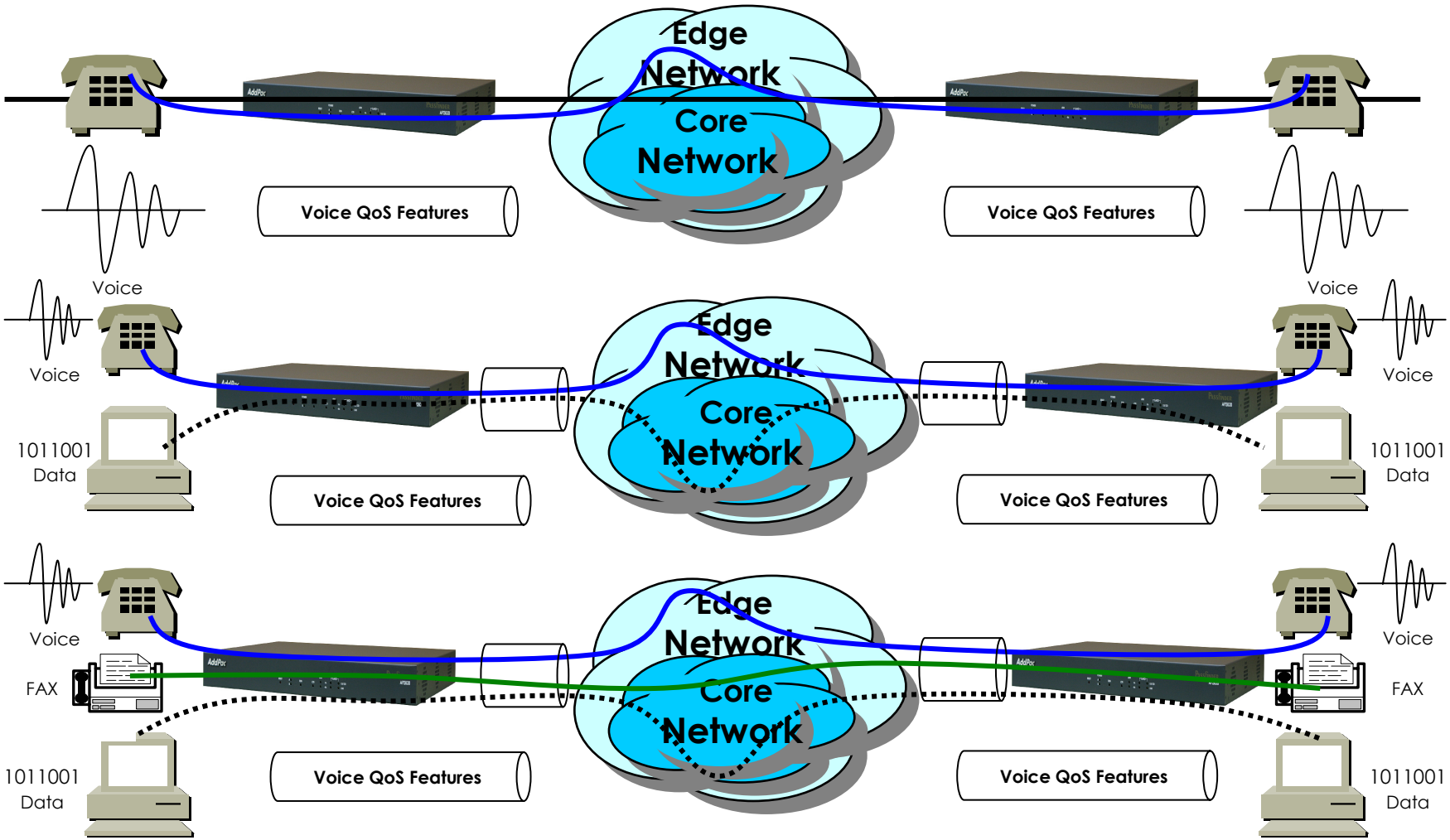
AP2830 Multi-service Router Product Overview

Enhances QoS Managements (cont.)



AP2830 Multi-service Router Product Overview

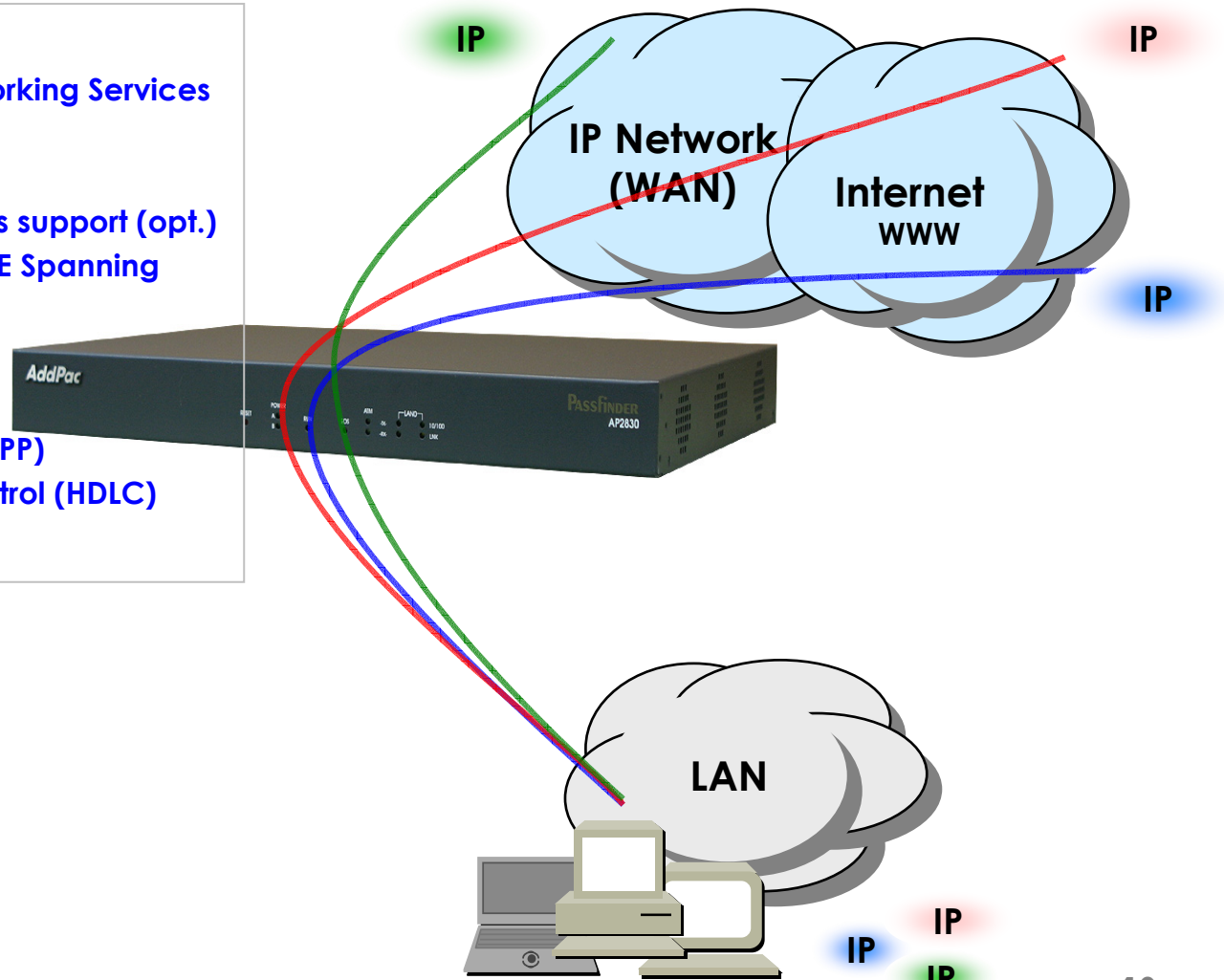
Enhances QoS Managements (cont.)



AP2830 Multi-service Router Product Overview

IP and WAN Protocols

- **IP Routing Protocols**
  - Multi-protocol Internetworking Services
  - Static IP routing
  - RIP v1/v2 (opt.)
  - OSPF v2 routing protocols support (opt.)
  - Transparent Bridging (IEEE Spanning Tree Protocol)
- **WAN Protocols**
  - Point-to-Point Protocol (PPP)
  - High-level Data Link Control (HDLC) Protocol

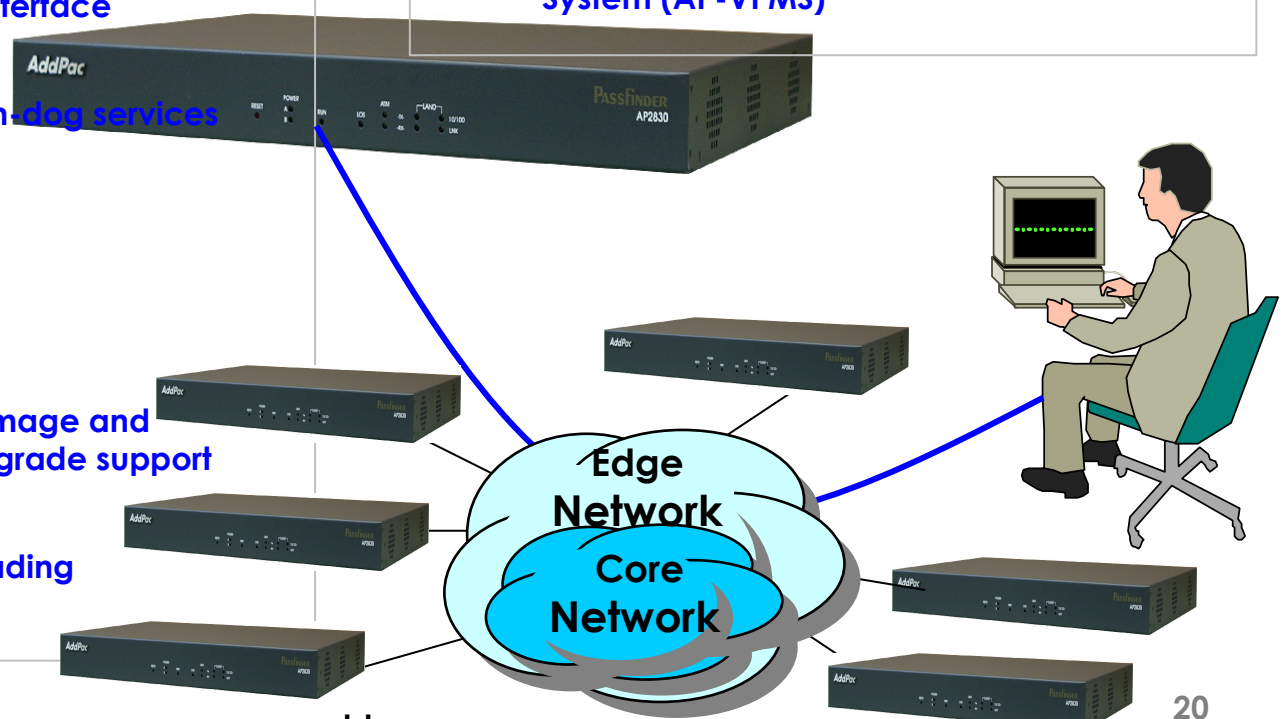


AP2830 Multi-service Router Product Overview

Network Managements

- **SNMP**
  - Standard Simple Network Management Protocol(SNMP) Agent support
  - MIB v1 and v2 Support
- **Web-based Management**
  - Standard Voice Interface
  - Standard PSTN Back-up 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

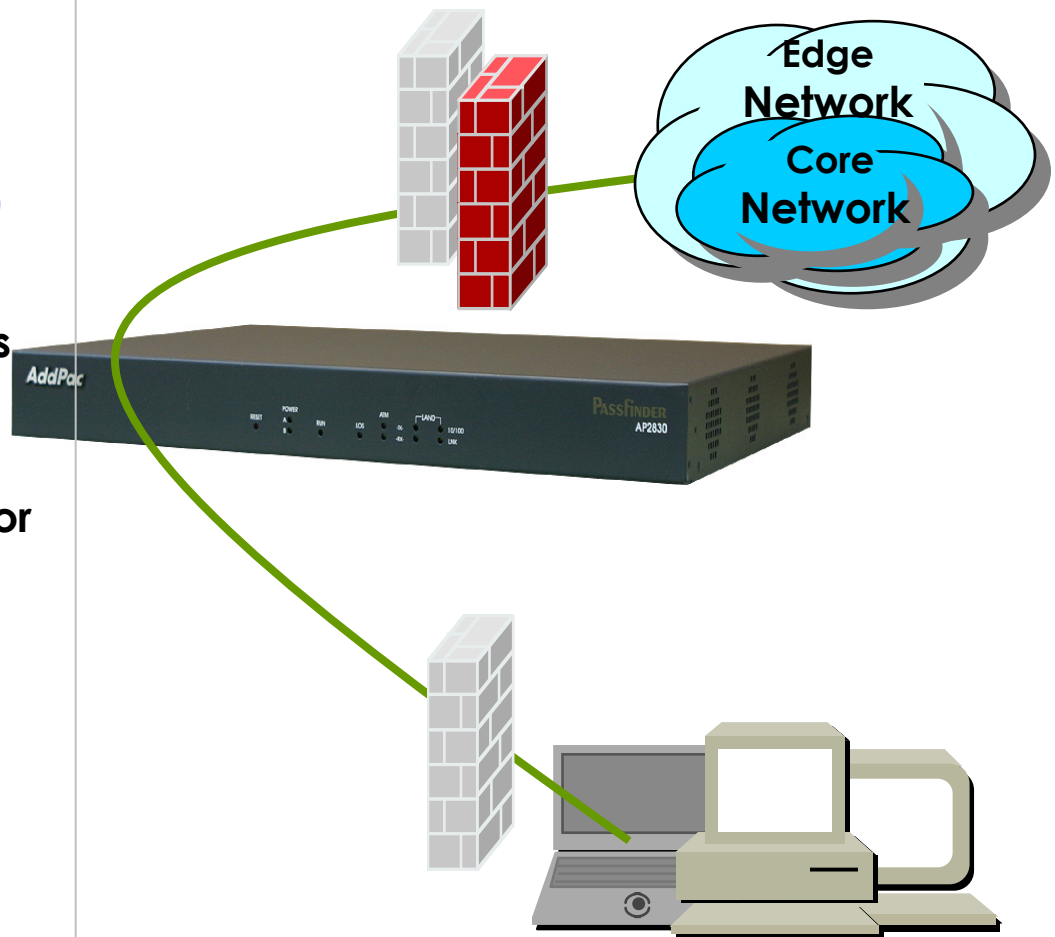
- **Easy Set-up Service**
  - MS Windows Graphical User Interface (GUI) based installation Software Solution
  - Easy installation Set-up service
- **Interoperable with AP-VPMS Service**
  - AddPac VoIP Plug & Play Management System (AP-VPMS)



AP2830 Multi-service Router Product Overview

Security Managements

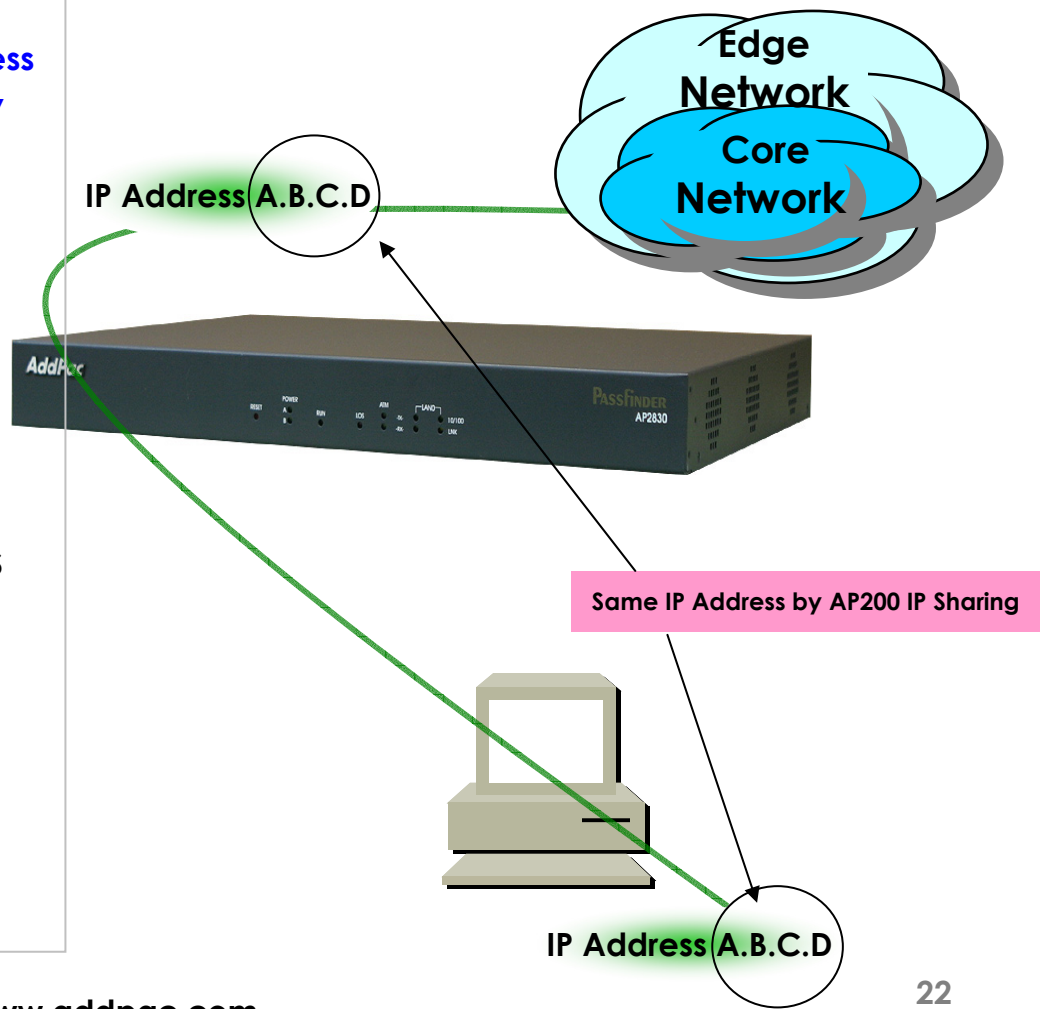
- IP packet filtering
- IP access list
- User authentication function
  - Password Authentication Protocol (PAP)
  - Challenge Handshake Authentication Protocol (CHAP)
- Enable/Disable specific protocols
- Auto-square connect of console and Telnet session
- Account Management function for multi-level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



AP2830 Multi-service Router Product Overview

Network Scalability

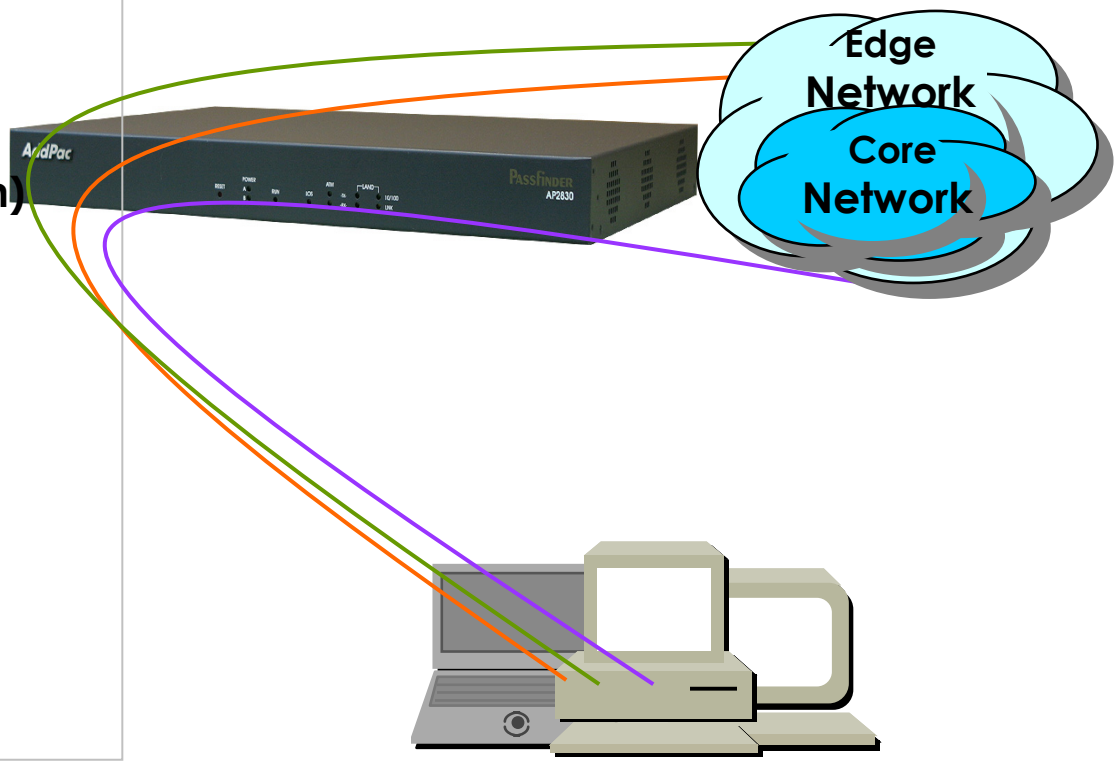
- IP Sharing Feature
  - Single IP Address, Multiple IP Network Access
  - Public IP Address Sharing by VoIP Gateway
- IP Sharing Network Environment
  - Support Legacy Network Environment
  - xDSL Modem based Broadband Network
  - Cable Modem based Broadband Network
  - Leased line Network Environment
- Both support Fixed and Dynamic IP
- Support Standard Network Protocols
  - PPPoE
  - PPTP
  - PPPoA
  - DHCP



AP2830 Multi-service Router Product Overview

Network Scalability (cont.)

- Bridging Service
  - Spanning Tree Bridging protocol (IEEE) support
- DHCP
  - Server and Relay
- IP Accounting
- PAT (Port Address Translation)
- NAT (Network Address Translation)
- Cisco Style CLI (Command Line Interface)
- PPTP (Point-to-Point Tunneling Protocol)
- NTP (Network Time Protocol)
- FTP/TFTP
  - Server and Client support
- DNS
  - Dynamic DNS Client support

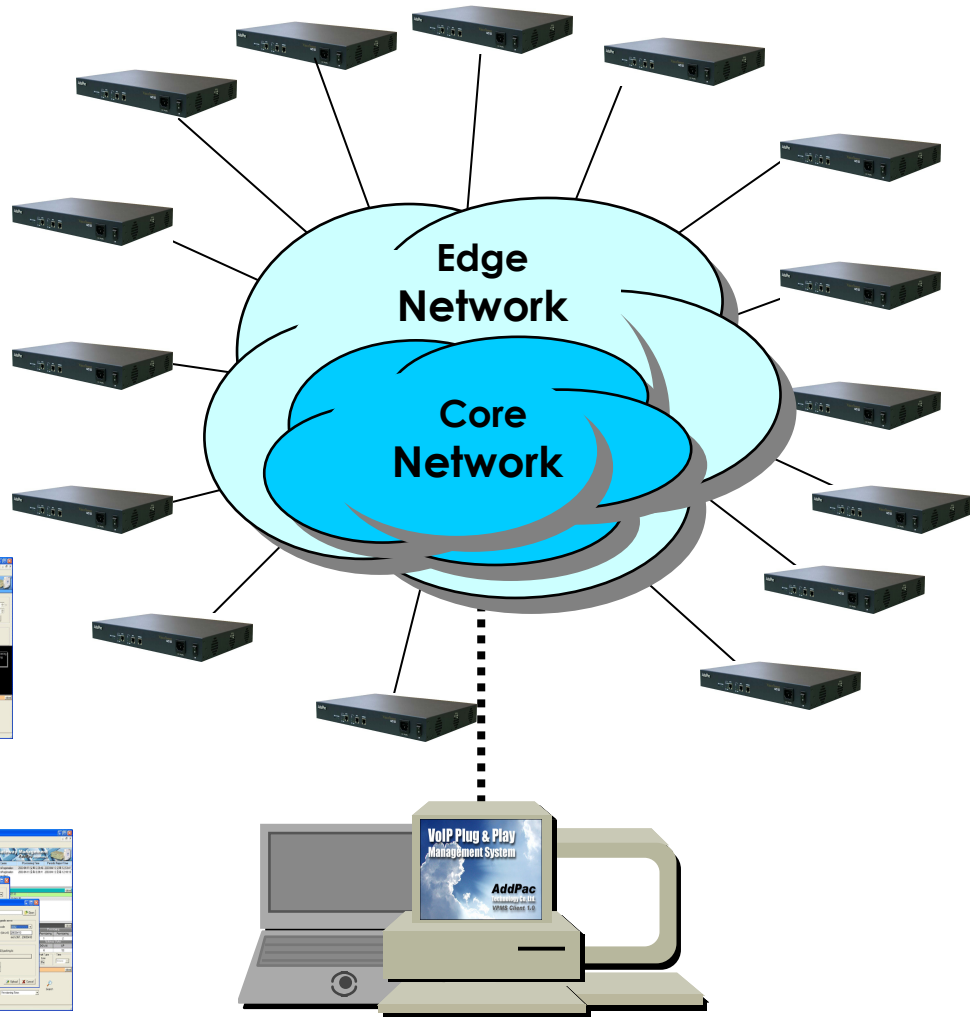


AP2830 Multi-service Router Product Overview

VoIP Plug & Play System (VPMS)

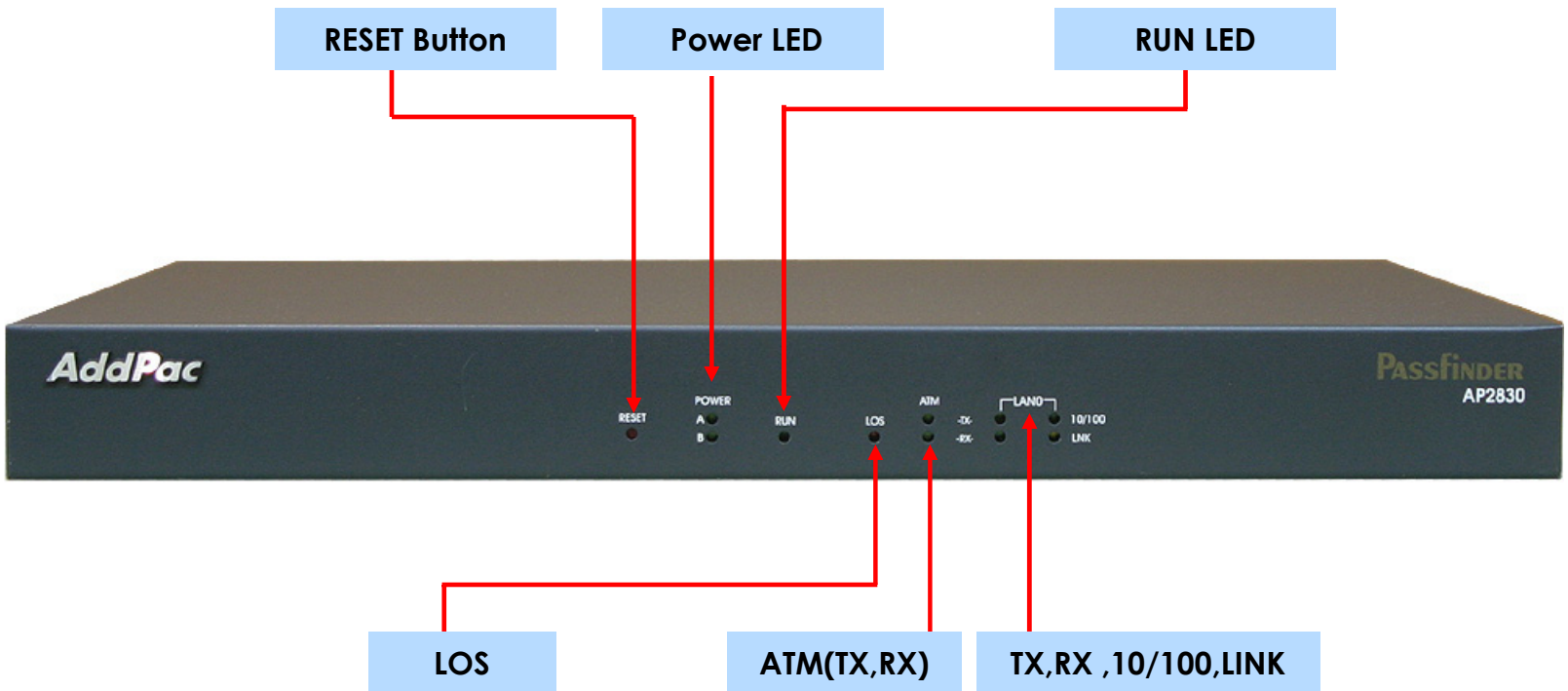
- AddPac AP-VPMS Support
  - AddPac VoIP Plug & Play System (VPMS)
  - Best EMS Solutions for AddPac VoIP G/W
- Requirements Hardware Platform
  - Over 1GHz Intel Pentium 4 Machine
  - Over 1GB Main Memory
  - Over 40GB Hard Disk Memory
  - Microsoft Windows Advanced Server or Windows 2000 Server or Windows XP Professional
  - DBMS : Microsoft MS-SQL Server 2000





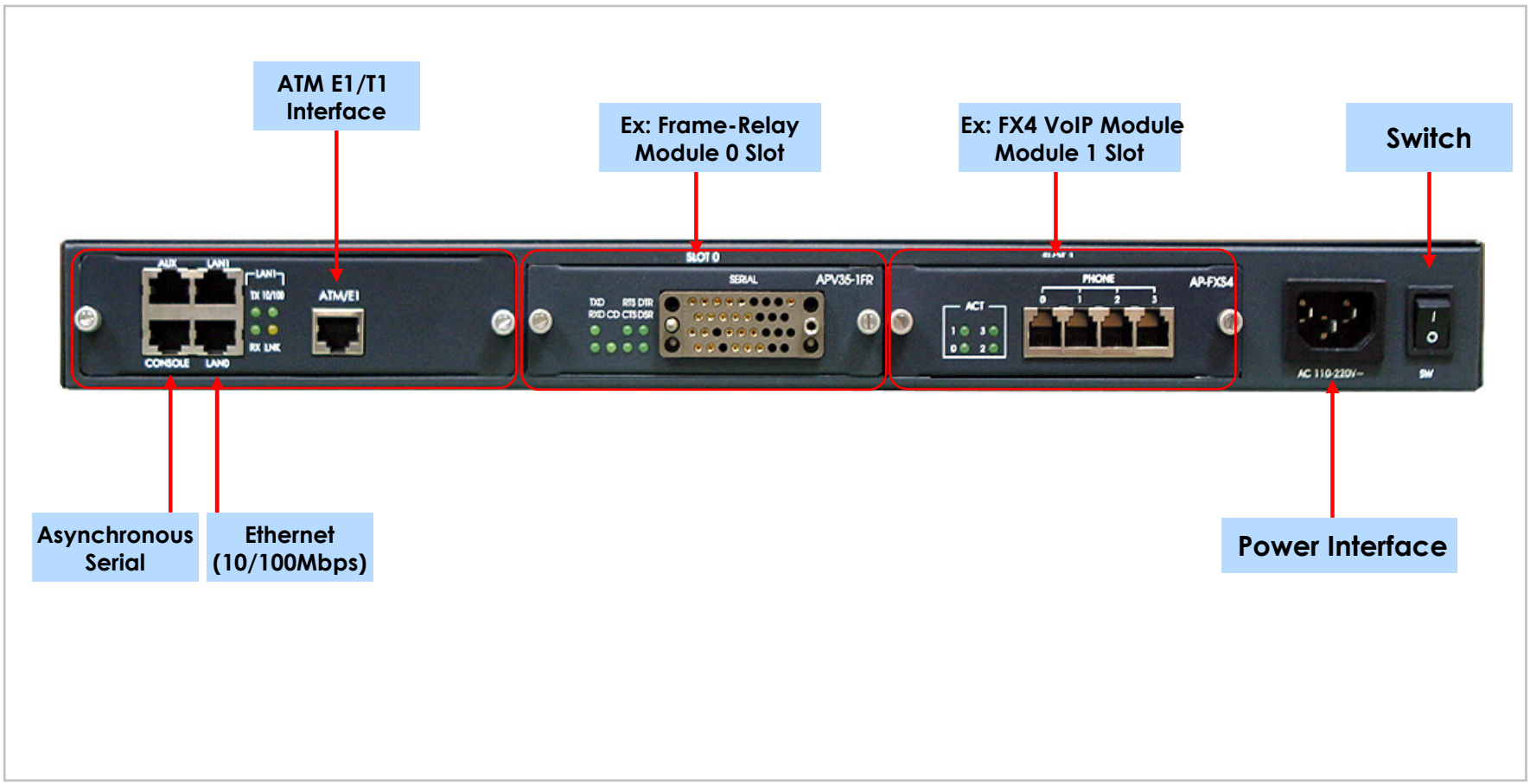
AP2830 Multi-service Router Product Overview

AP2830 Network Configurations



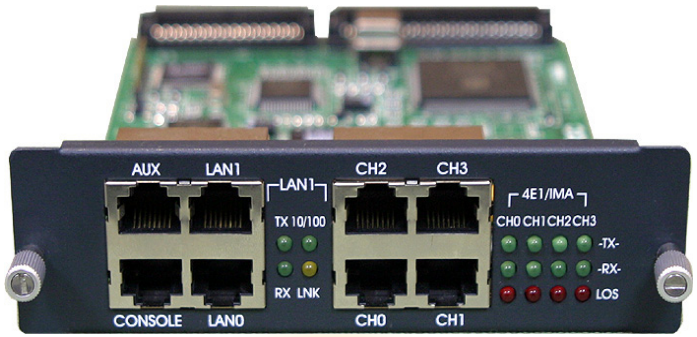
AP2830 Multi-service Router Product Overview

AP2830 Hardware Specification



AP2830 Multi-service Router Product Overview

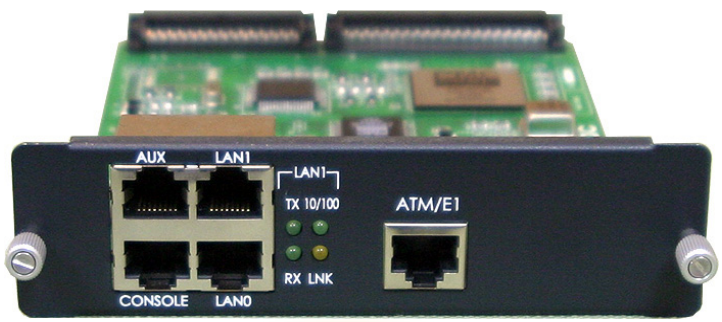
AP2830 Network Interface Module



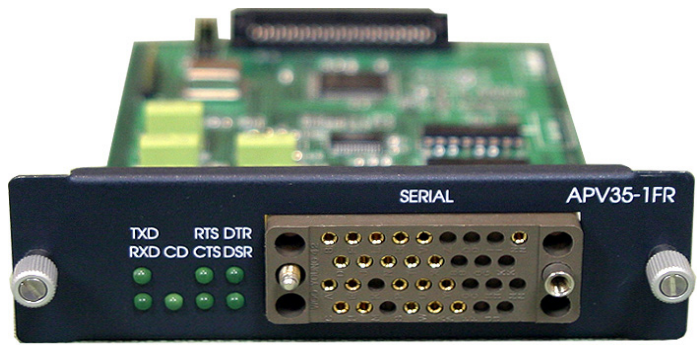
4-Port Multiple E1/T1 ATM Interface / IMA Interface
2-Port 10/100Mbps Fast Ethernet Interface
2-Port Asynchronous Serial Interface



2-Port 10/100Mbps Fast Ethernet Interface
2-Port Asynchronous Serial Interface



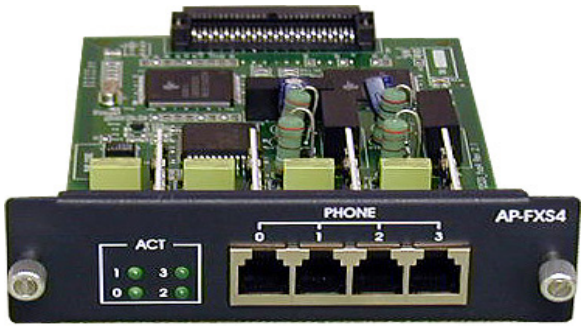
1-Port ATM E1/T1 Interface
2-Port 10/100Mbps Fast Ethernet Interface
2-Port Asynchronous Serial Interface



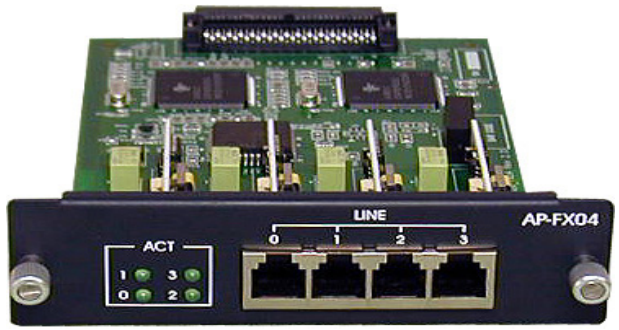
- AP-FRV35 (1-port Frame-Relay)

AP2830 Multi-service Router Product Overview

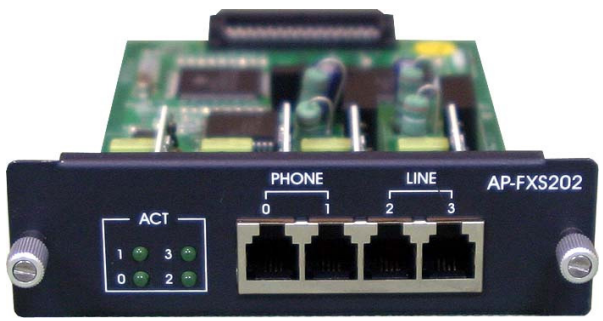
AP2830 Analog Voice Module



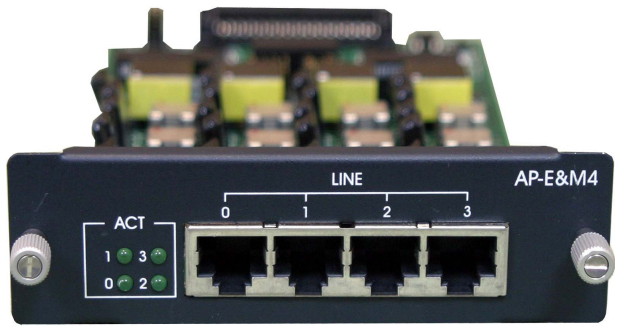
AP-FXS4 Module



AP-FXO4 Module



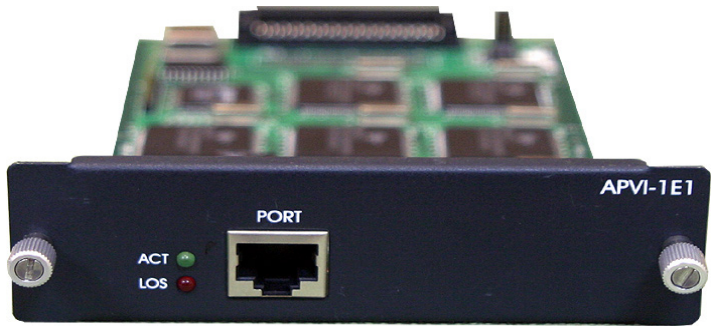
AP-FXS2, FXO2 Module



AP-E&M4 Module

AP2830 Multi-service Router Product Overview

AP2830 Digital Voice Module



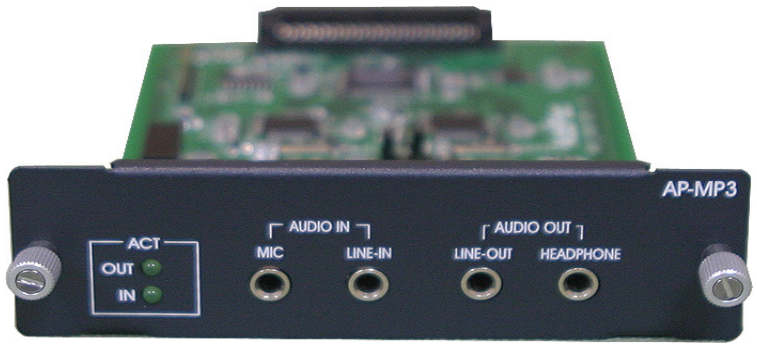
AP-E1 Module



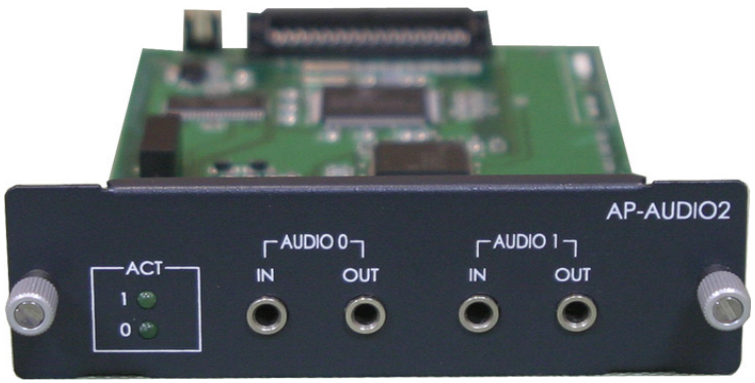
AP-T1 Module

AP2830 Multi-service Router Product Overview

AP2830 IP Broadcasting Module



AP-MP3 Module (High Quality)



AP-AUDIO2 Module



AP-AUDIO1,FXS3 Module

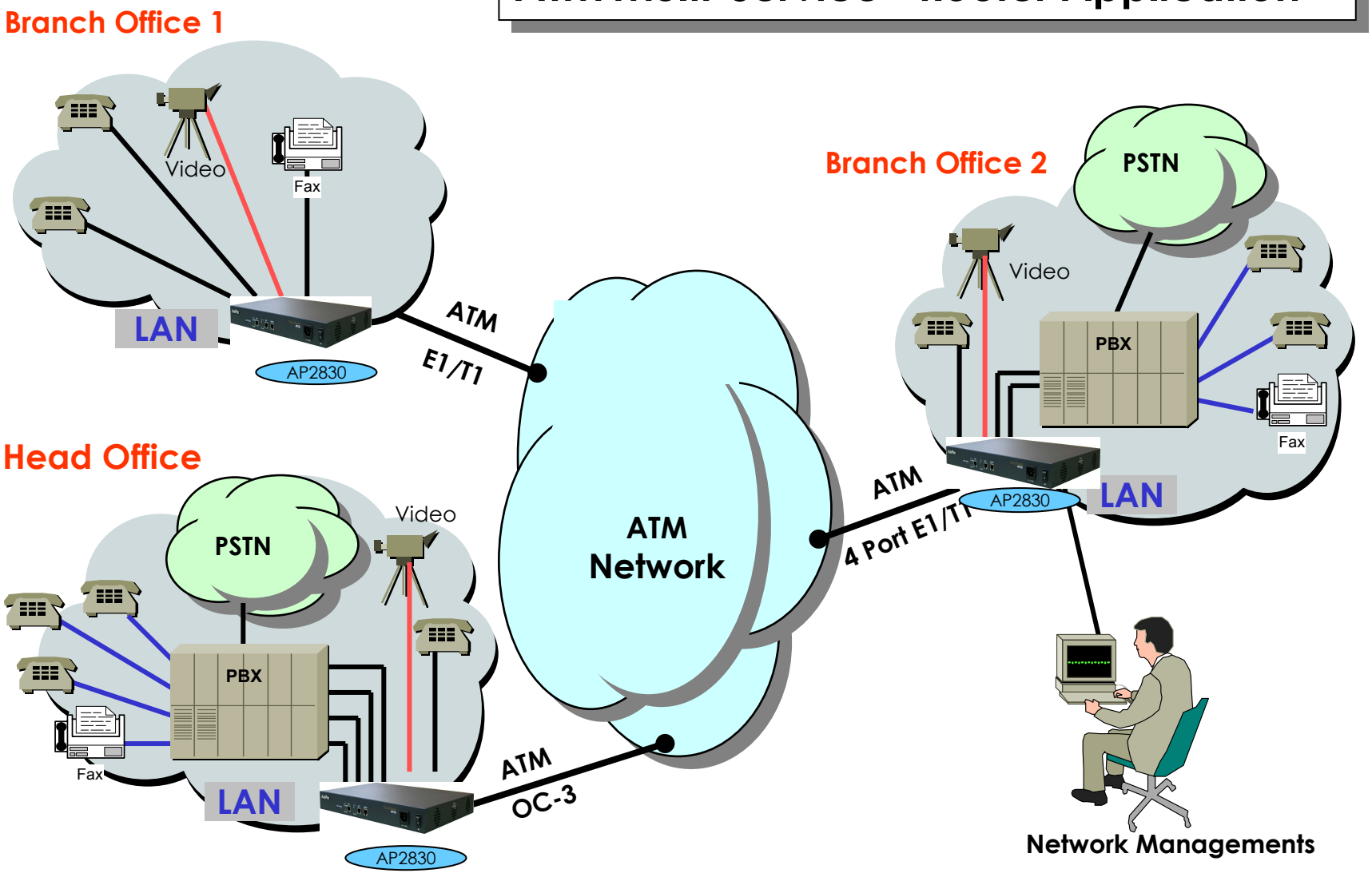
AP2830 Multi-service Router Product Overview

AP2830 Hardware Specification

AP2830 Multi-service Router	Basic Specifications
Microprocessor	Power PC 64Bit RISC Microprocessor
Number of Slot	One(1) Network Module and Two(2) Multi-service Module Slots
Network Interface Module	4-Port Independent E1/T1 or IMA Interface Module 1-Port E1 ATM Interface Module ATM-OC3 Metro ATM Interface Module Ethernet Interface Module
Multi-service Modules	4-Port FXS, FXO, E&M Module s 2-Port FXO & 2-Port FXS Module MP3, AUDIO, AUDIO&FXS Modules 1-Port Digital E1 Module 1-Port Digital T1 Module 1-Port Frame-Relay Module
Memory	8MB Flash Memory, 64MB SDRAM Main Memory, 8MB ATM Local Memory, 512KB Boot Memory
Power Input	VAC 110~220V Free Voltage, 50/60Hz,Dual Power Supply Unit
Operating Temperature	0°C ~ 55°C
Storage Temperature	-40°C ~ 85°C
Width x Depth x Height	435 mm x 248 mm x 43 mm ,2U x 19" Rack Mountable Chassis

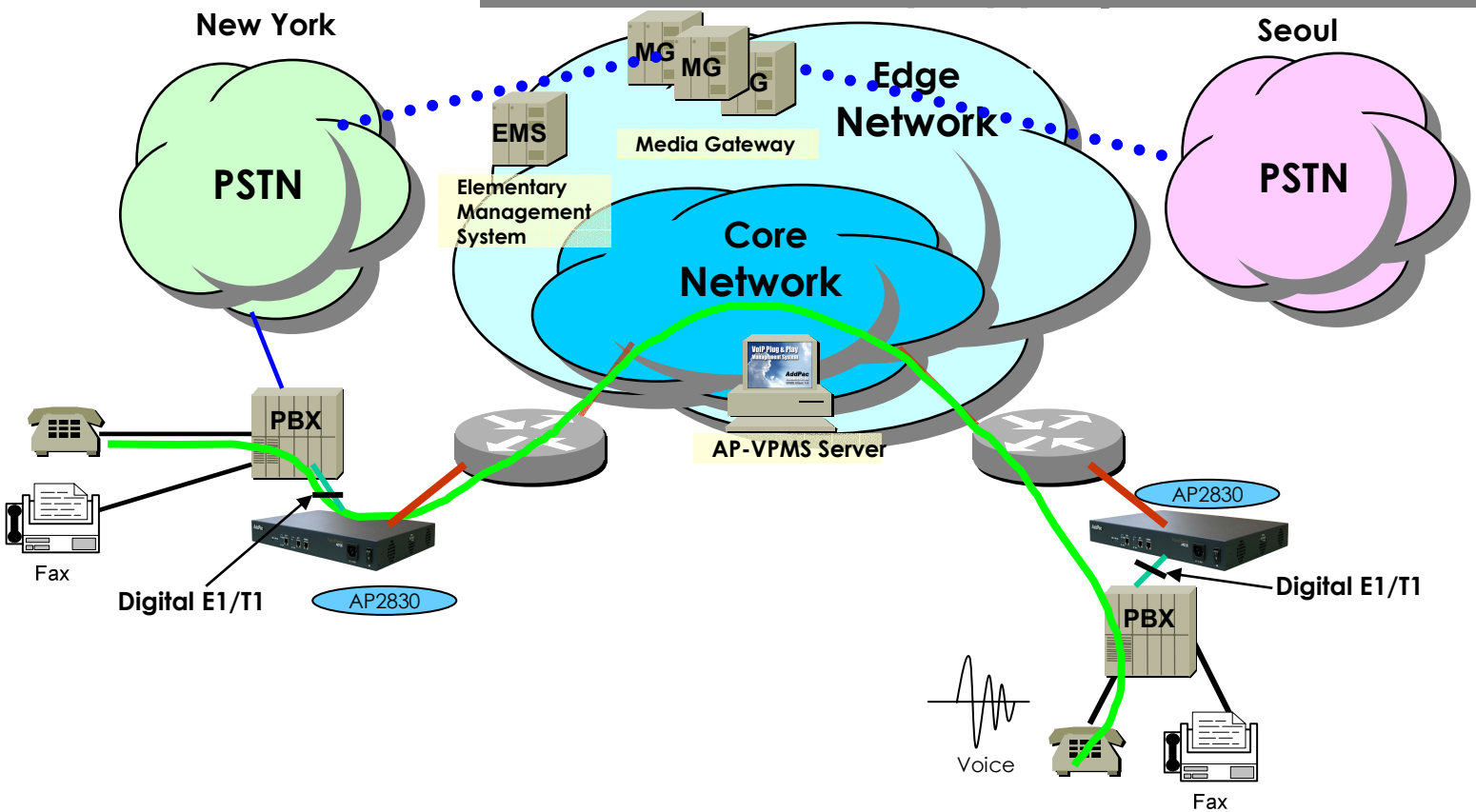
AP2830 Voice Networking Configuration

ATM Multi-Service +Router Application



AP2830 Voice Networking Configuration

VoIP Gateway Appl. (Inter-office calls)



Voice Call Flow

PSTN Interface

Voice+Data, Ethernet or WAN Interface

TRUNK n x E1 Voice Interface for PSTN Interworking

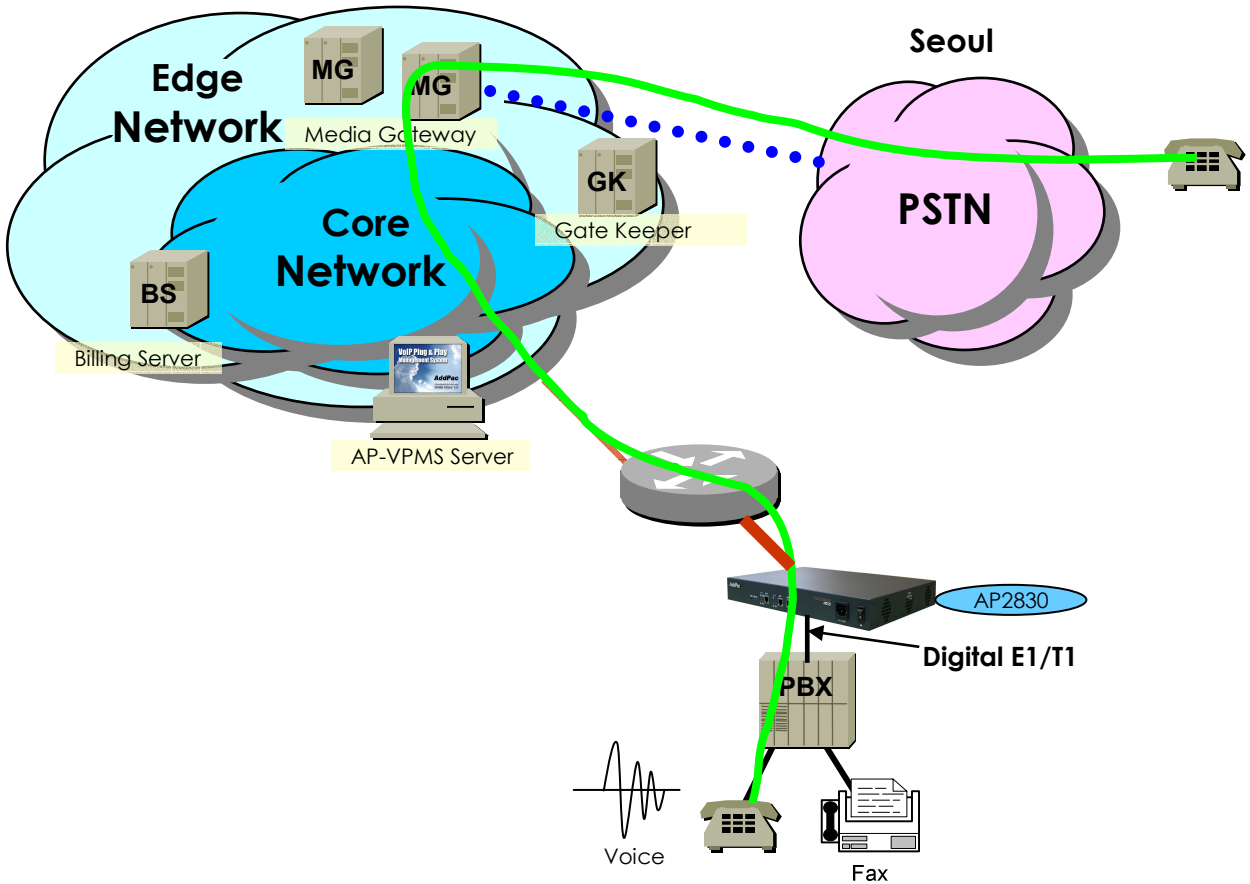
Leased Line/ATM/Frame-Relay/IP Router, xDSL/Cable Modem, etc.

AddPac AP2830 Multi-service Router

Analog Phone

AP2830 Voice Networking Configuration

VoIP Gateway Appl.(VoIP to PSTN Inter-working Call Flow)



FXS Analog Voice Interface

Voice Call Flow

Voice+Data, Ethernet or WAN Interface

TRUNK n x E1 Voice Interface for PSTN Interworking

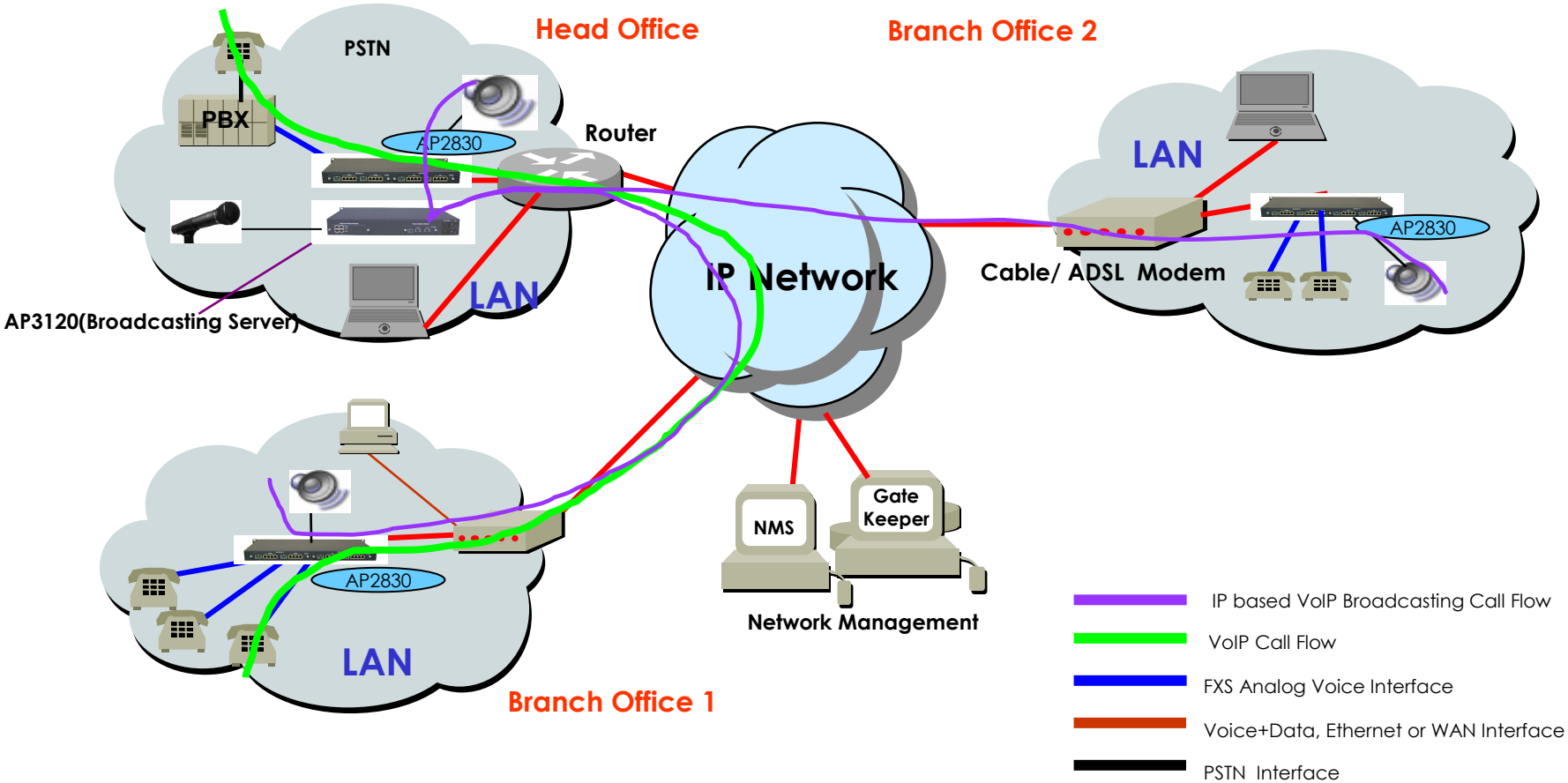
Leased Line/ATM/Frame-Relay/IP Router, xDSL/Cable Modem, etc.

AddPac AP2830 Multi-service Router

Analog Phone

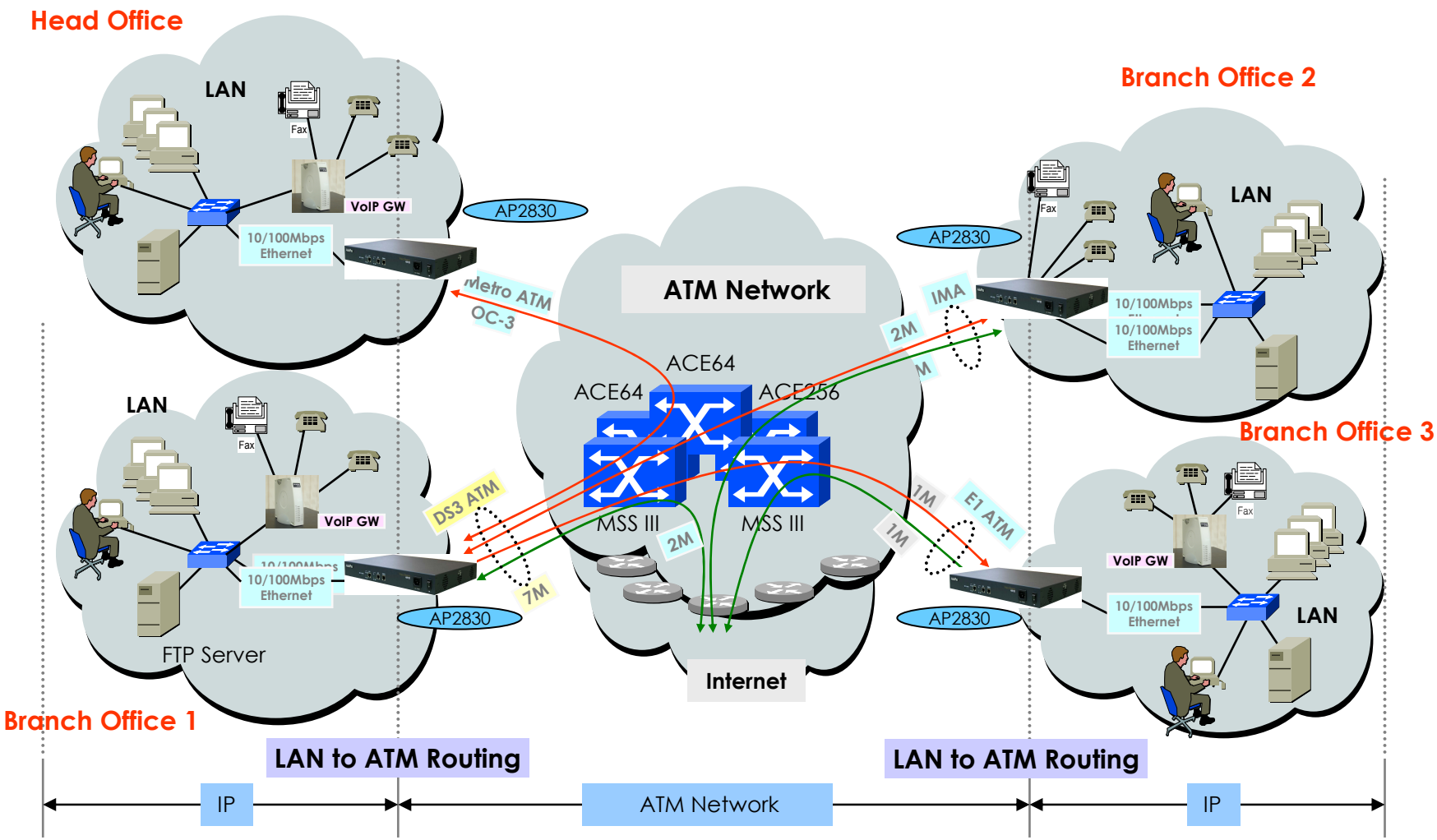
AP2830 Voice Networking Configuration

VoIP Gateway + Broadcasting Terminal Application



AP2830 Voice Networking Configuration

ATM Router Application



AP2830 Multi-service Router Product Overview

AP2830 Ordering and Pricing

- **AP2830 Multi-Service Router**
  - Multi-Service Router
    - 64bit RISC CPU, 8MB Flash, 64MB SDRAM, 8MB Local Memory
    - APOS v5.xx with Operation Manual
    - Including CAB-LAN, CAB-CON



One(1) Network Interface Slot

- 28xx-IMA 4-Port ATM IMA Interface Module
- 28xx-E1 1-Port FXS Interface Module
- 28xx-OC3 1-Port ATM-OC3 Interface Module
- 28xx-LAN LAN Interface Module

Two(2) Multi-Service I/O Slots

- 28xx-FXS4 4Port FXS Interface Module
- 28xx-FXS4 4Port FXS Interface Module
- 28xx-FXO4 4Port FXO Interface Module
- 28xx-E&M4 4Port E&M Interface Module
- 28xx-FXS2O2 2Port FXS & 2Port FXO Interface Module
- AP-MP3 High Quality MP3 Audio Broadcasting Module
- AP-AUDIO2 Voice Band 2-Channel Broadcasting Module
- AP-AUD1S3 Voice Band Audio Port + VoIP 3-Port FXS Module
- APV1-1E1V 1-port Digital E1 ISDN-PRI Network Module
- APV1-1T1V 1-port Digital T1 ISDN-PRI Network Module
- AP-FRV35 1-port Frame-Relay Interface Module

AP2830 Multi-service Router Product Overview

AP2830 Comparison Table

	AP2830 Multi-service Router
▶ Analog VoIP Module	Up to 2
▶ Digital E1 /T1 VoIP Module	Up to 2
▶ Asynchronous Port	1
▶ 1-port Frame-Relay Real-time	1
▶ 10/100 Mbps Ethernet Ports	2
▶ Console Port	1
▶ CPU	Power PC 64Bit RISC
▶ Flash Memory	8Mbyte
▶ Base Memory	64Mbyte
▶ Internetworking OS	APOS
▶ H.323, SIP, MGCP VoIP Protocol, T38 FAX	YES
▶ PPPoE, PPTP Network Protocols	YES
▶ Enhanced QoS Management Feature	YES
▶ IP Routing Protocols Including NAT	YES

Thank you !

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