

AP-CBS5000 Cellular Emergency Broadcasting Server

High Performance Cellular Emergency Broadcasting Solution

Preliminary Product Overview

(Without notice, following described technical spec. can be changed)



AddPac

AddPac Technology

Sales and Marketing

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- Product Overview
- Hardware Specification
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Product Overview

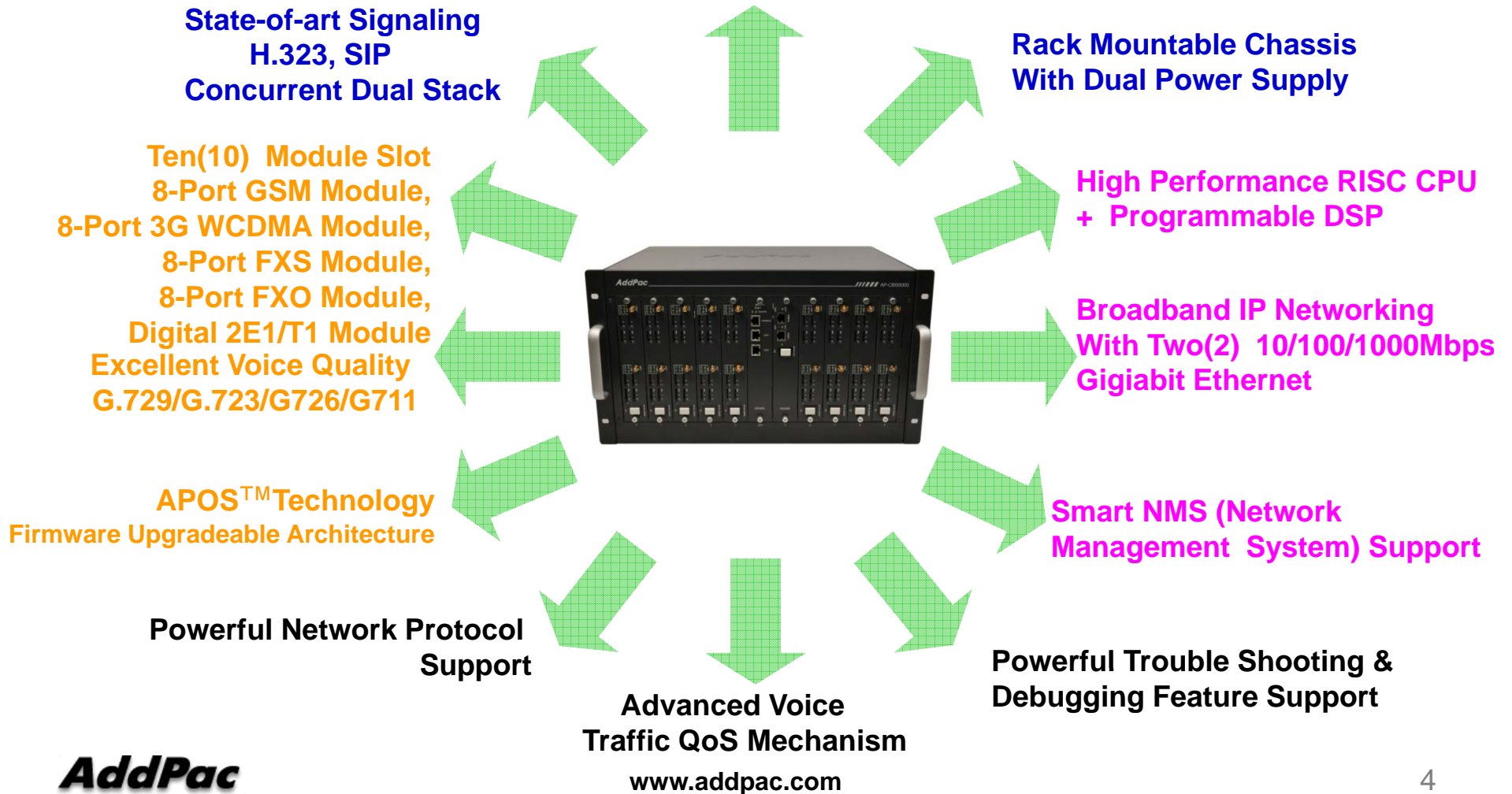
AP-CBS5000 Cellular Emergency Broadcasting Server

- Cellular Emergency Voice Broadcasting Server
- SMS Broadcasting Server
- Remote Voice Broadcasting Service Support via Cellular Terminal (IVR based Authentication, etc)
- Cellular Broadcasting Management System with Dedicate IP Terminal
- Voice Broadcasting Mailing Service
- Call by Call Pseudo Real-time Voice Broadcasting Service
- Ten(10) Module Slots for GSM/3G, Digital 2E1 Interface (Up to 80-Port GSM, 80-Port 3G WCDMA, CPU Module)
- H.323/SIP Dual Concurrent Stack Embedded
- High Performance RISC & Programmable DSP Architecture
- G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- 10/100/1000Mbps Gigabit Ethernet Interface
- One(1) RS-232C Port for Command Line Interface
- Firmware Upgradeable Architecture
- NMS(Network Management System) Support
- Advanced Voice QoS Mechanism
- Rack Mountable Chassis with Internal Power Supply
- Dual Redundancy Power Supply Architecture

Product Highlights

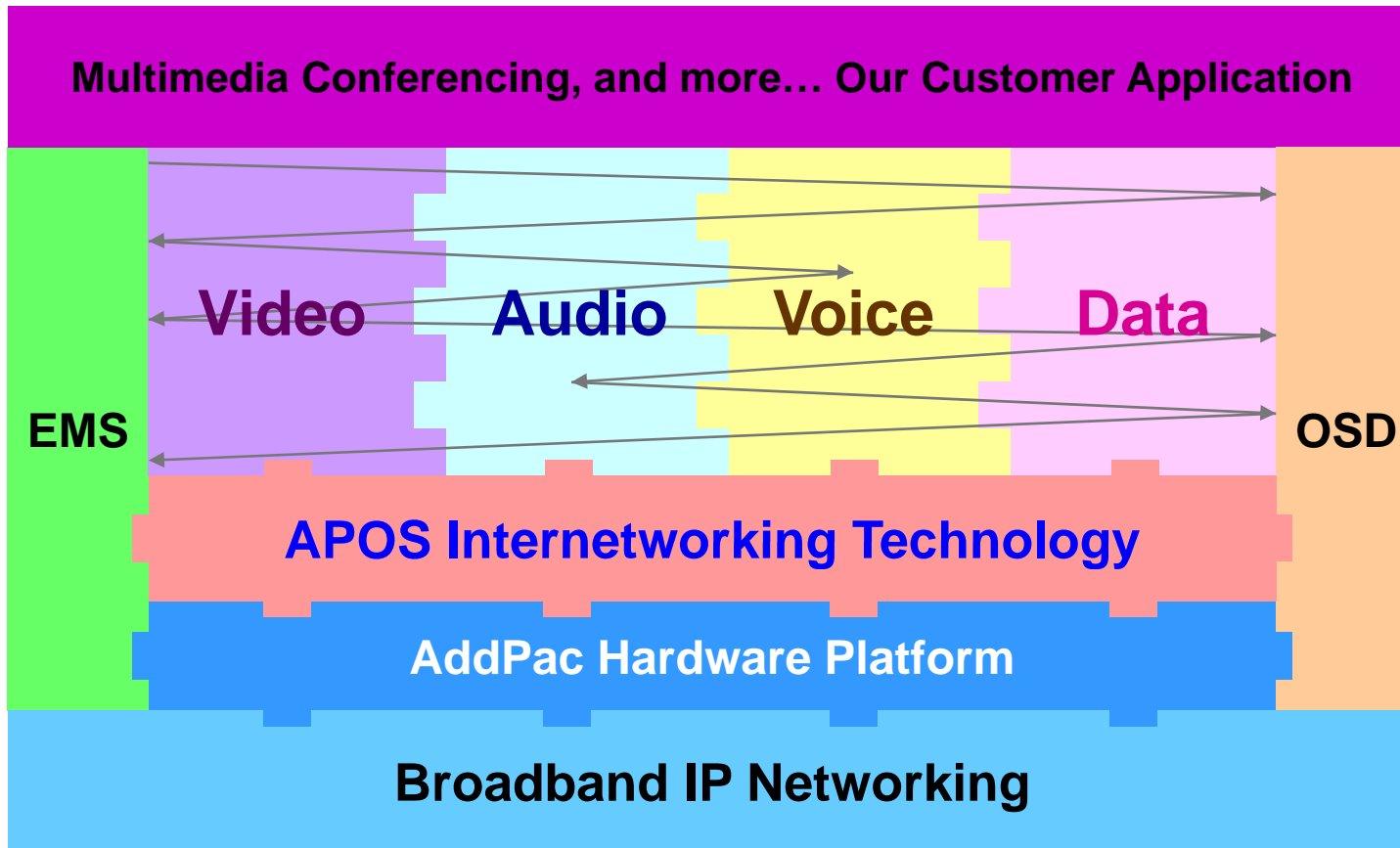
AP-CBS5000 Cellular Emergency Broadcasting Server

Powerful Multi-Port Cellular Broadcasting Server (up to 80 Channel GSM/3G WCDMA Interface)



APOS Technology

AP-CBS5000 Cellular Emergency Broadcasting Server



- APOS : AddPac Internetworking Operating System
- OSD : On- Screen Display
- EMS : Element Management System

Hardware Specification

AP-CBS5000 Cellular Emergency Broadcasting Server

RISC
CPU

High-end
DSP

- RISC Microprocessor Computing Power
- Ten(10) Module Slot for GSM/3G, Analog /Digital VoIP Interface
- 8-Port GSM Module(AP-N1-GSM8)
 - 8-Port SIM Card Slot
 - Two(2) GSM Antenna Interface (Internal 4 Channel Antenna Combiner x 2)
- 8-Port 3G Module(AP-N1-3G8)
 - 8-Port USIM Card Slot
 - Two(2) 3G Antenna Interface (Internal 4 Channel Antenna Combiner x 2)
- VoIP Interface Module (Hot-Swap)
 - 8-Port FXS, FXO Module (AP-N1-FXS8, AP-N1-FXO8)
 - Digital 2E1/T1 Module (AP-N1-2E1)
- Network Interface
 - Two(2) 10/100/1000Mbps Gigabit Ethernet (RJ45)
- RS232C Console Interface for CLI
- Run LED, LAN LED, Port LEDs
- Module Type Power Supply, Dual Power Supply(Option)



Hardware Specification

AP-CBS5000 Cellular Emergency Broadcasting Server

RISC
CPU

High-end
DSP

| AP-CBS5000 Cellular Emergency Broadcasting Server | Basic Specifications |
|---|---|
| Voice Interface | Ten(10) Module Slots for GSM/WCDMA, Analog/Digital VoIP Module |
| | AP-N1-GSM8, AP-N1-WCDMA4, AP-N1-FXS8, AP-N1-FXO8, AP-N1-FXS4O4, AP-N1-2E1 |
| Ethernet Interface | 2-Ports 10/100/1000Mbps Gigabit Ethernet Interface(RJ-45) |
| Flash Memory | 4Gbyte Flash Memory |
| Base Memory | 1Gbyte DDR2 |
| Power Requirement | Power Supply / VAC 110~220V, 50/60Hz, 150Watt Dual Power Supply (Dual PSU) |
| Operating Temperature | 0°C ~ 45°C (32 °F ~ 122°F) |
| Storage Temperature | -40°C ~ 85°C (-40°C ~ 185°F) |
| Relative Humidity | 5% ~ 95% (Non-condensing) |
| Dimensions | W×D×H (489mm x 344mm x 266mm) |
| Weight(kg) | 15Kg |

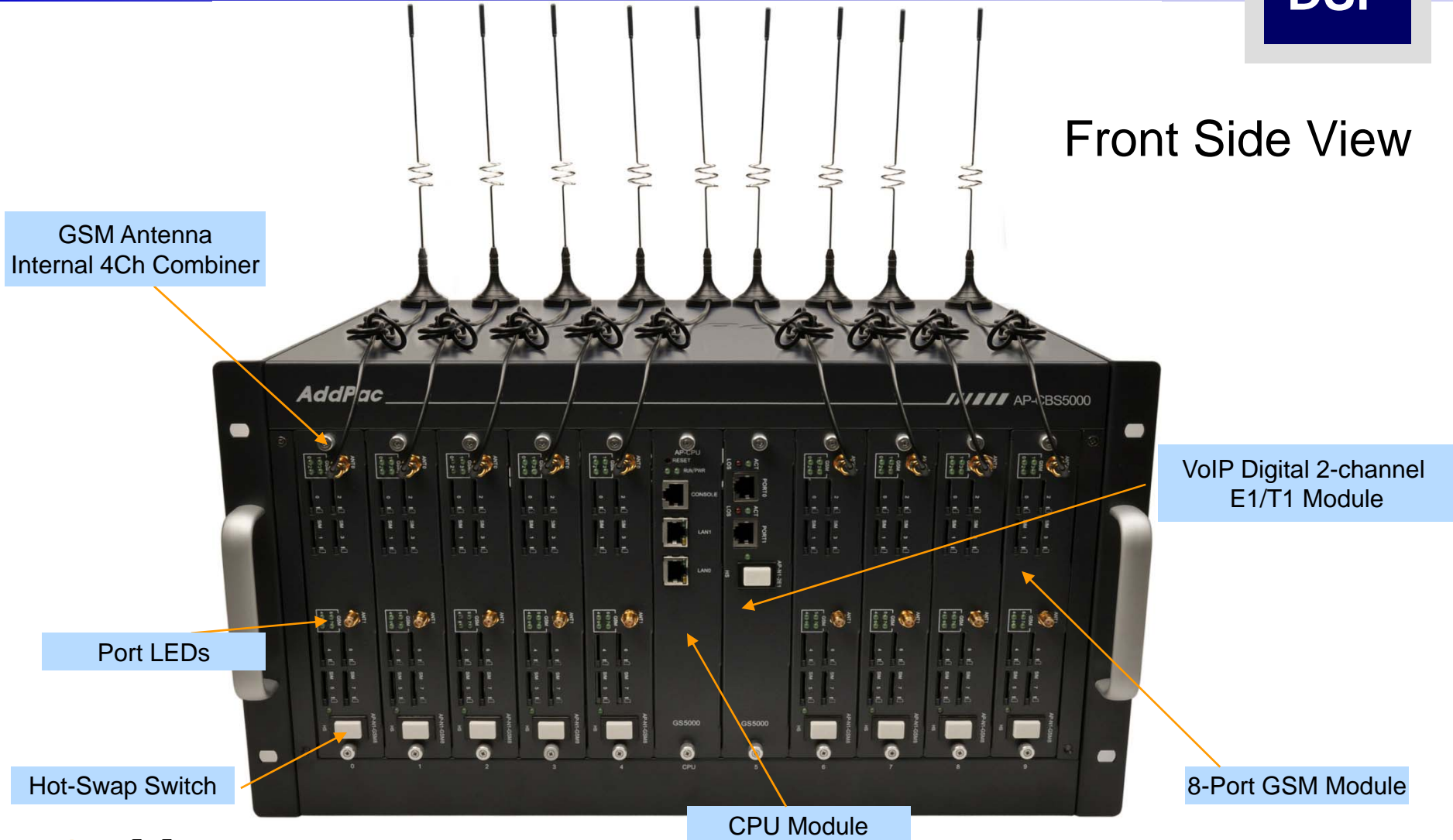
Hardware Specification

AP-CBS5000 Cellular Emergency Broadcasting Server

RISC
CPU

High-end
DSP

Front Side View



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Hardware Specification

AP-CBS5000 Cellular Emergency Broadcasting Server

RISC
CPU

High-end
DSP

Back Side View



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Hardware Specification

AP-CBS5000 Cellular Emergency Broadcasting Server

RISC
CPU

High-end
DSP

AP-CBS5000 Modules

AP-N1-GSM8 8-Port GSM Module



AP-N1-3G8 8-Port 3G WCDMA Module



AP-N1-FXS8 8-Port FXS Module



AP-N1-FXO8 8-Port FXO Module



AP-N1-2E1 2-Port Digital E1/T1 Module



Hardware Specification

AP-CBS5000 Cellular Emergency Broadcasting Server

RISC
CPU

High-end
DSP

SIM Card Slot



AP-N1-GSM8
(8-Port GSM Module)

GSM Antenna
Internal 4Ch Combiner

Port LEDs

GSM Antenna
Internal 4Ch Combiner

Hot-Swap Switch

Hardware Specification

AP-CBS5000 Cellular Emergency Broadcasting Server

RISC
CPU

High-end
DSP



AP-N1-2E1
(Digital E1/T1 Module)

Hardware Specification

AP-CBS5000 Cellular Emergency Broadcasting Server

Power Supply Module



Hardware Specification

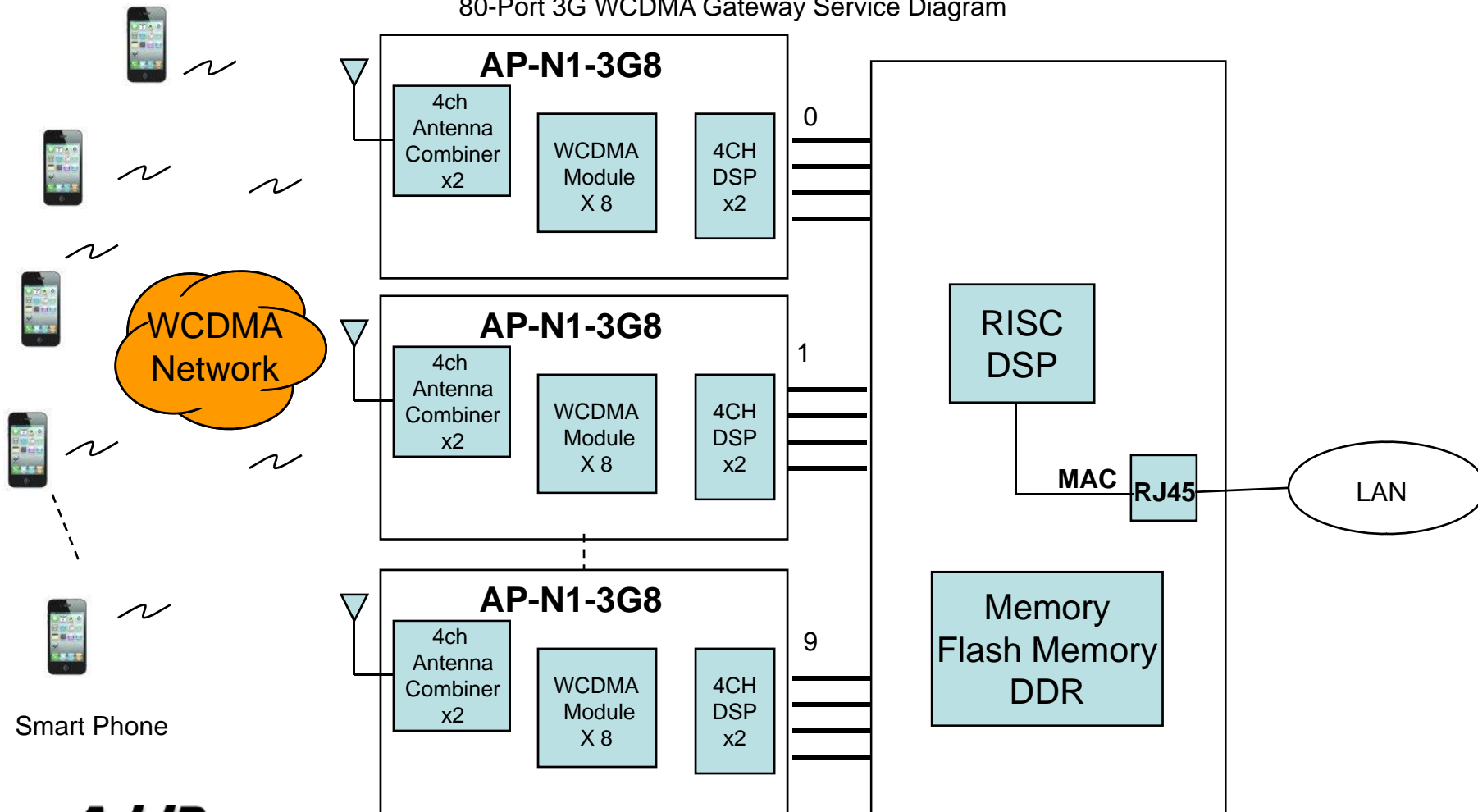
AP-CBS5000 Cellular Emergency Broadcasting Server

RISC
CPU

High-end
DSP

3G WCDMA Gateway Service Diagram

80-Port 3G WCDMA Gateway Service Diagram



Smart Phone

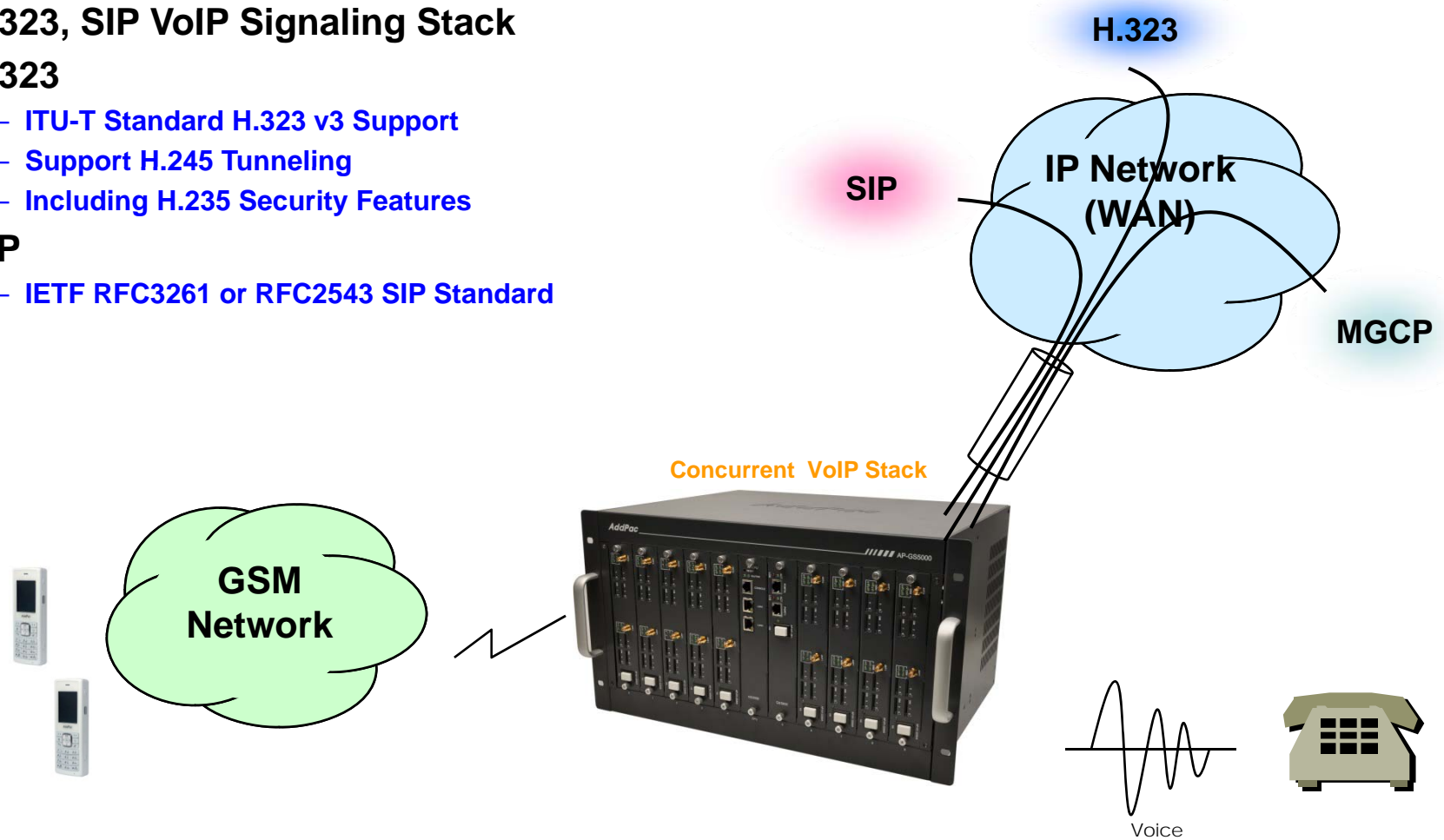
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VoIP (Voice over IP) Service

AP-CBS5000 Cellular Emergency Broadcasting Server

- H.323, SIP VoIP Signaling Stack
- 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



VoIP (Voice over IP) Service

AP-CBS5000 Cellular Emergency Broadcasting Server

- **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

VoIP (Voice over IP) Service

AP-CBS5000 Cellular Emergency Broadcasting Server

- **Voice Codec**

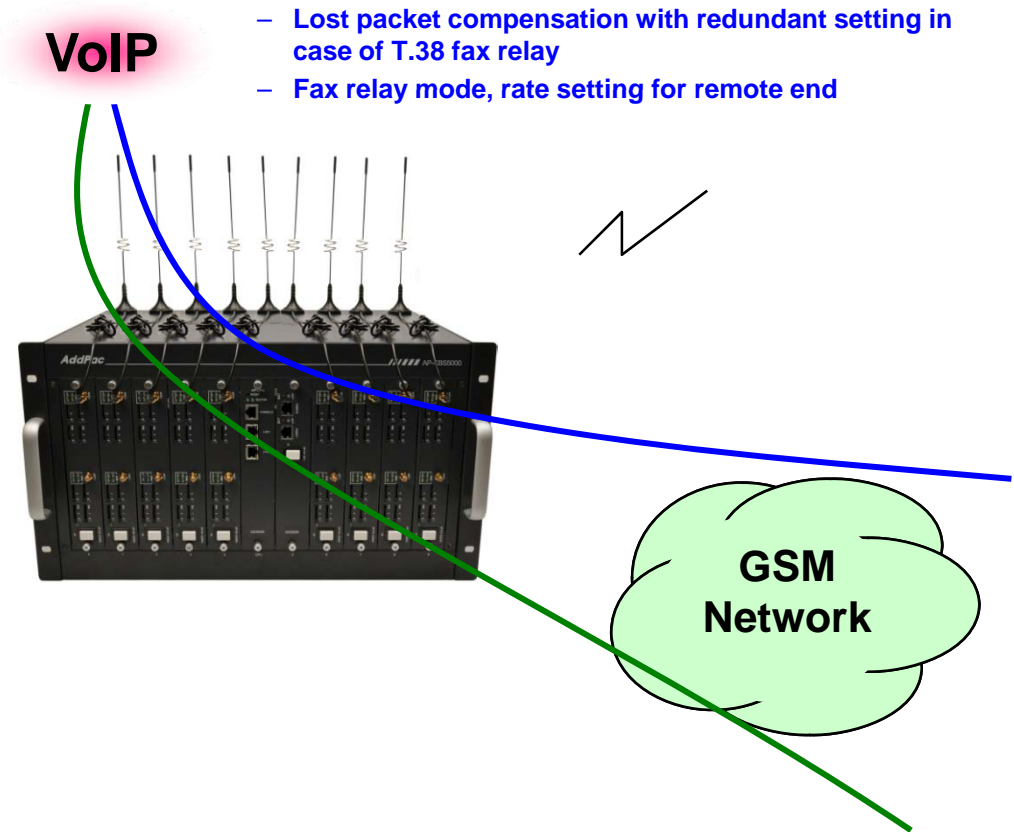
- G.711 A-Law, G.711 U-Law
- G.726 r16, G.726 r32
- G.729A
- G.723.1 r63, G.723.1 r53
- VAD (Voice Activity Detection) function support
- DTMF relay support (H.323, SIP, MGCP common) based on RFC2833

- **RTP**

- Redundant RTP packet transmission in case of severe packet loss
- Dynamic jitter buffer management and 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

- **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



VoIP (Voice over IP) Service

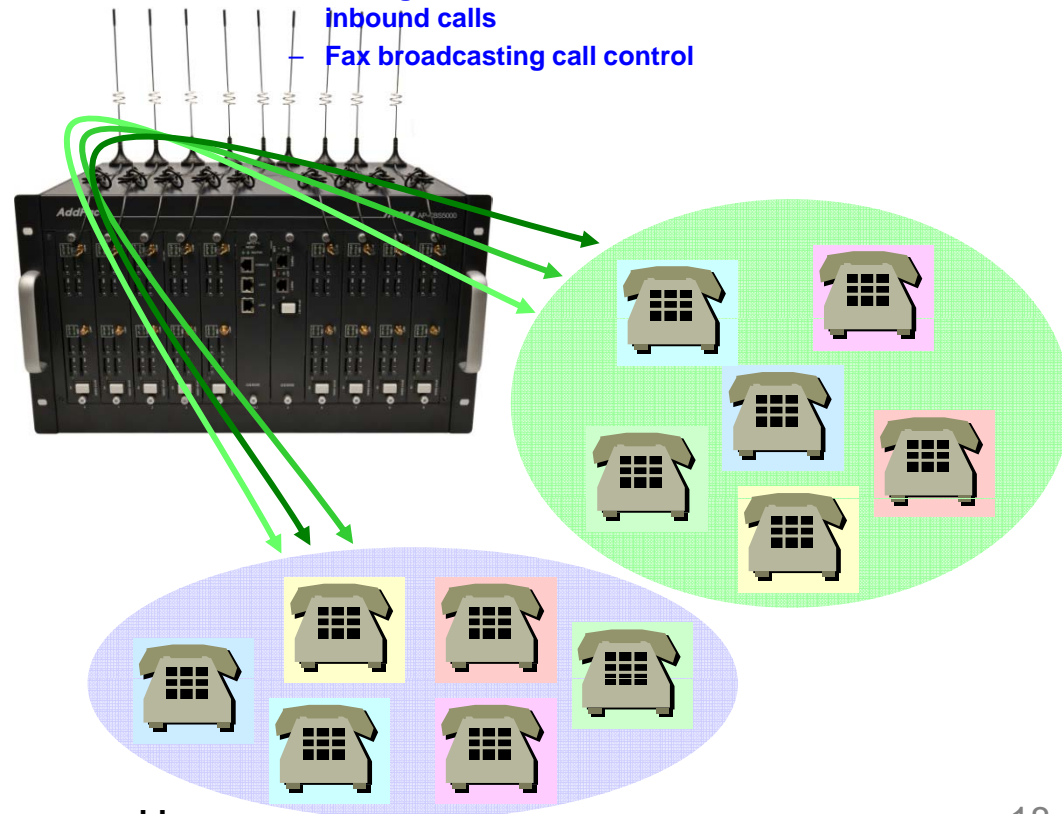
AP-CBS5000 Cellular Emergency Broadcasting Server

• 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.)

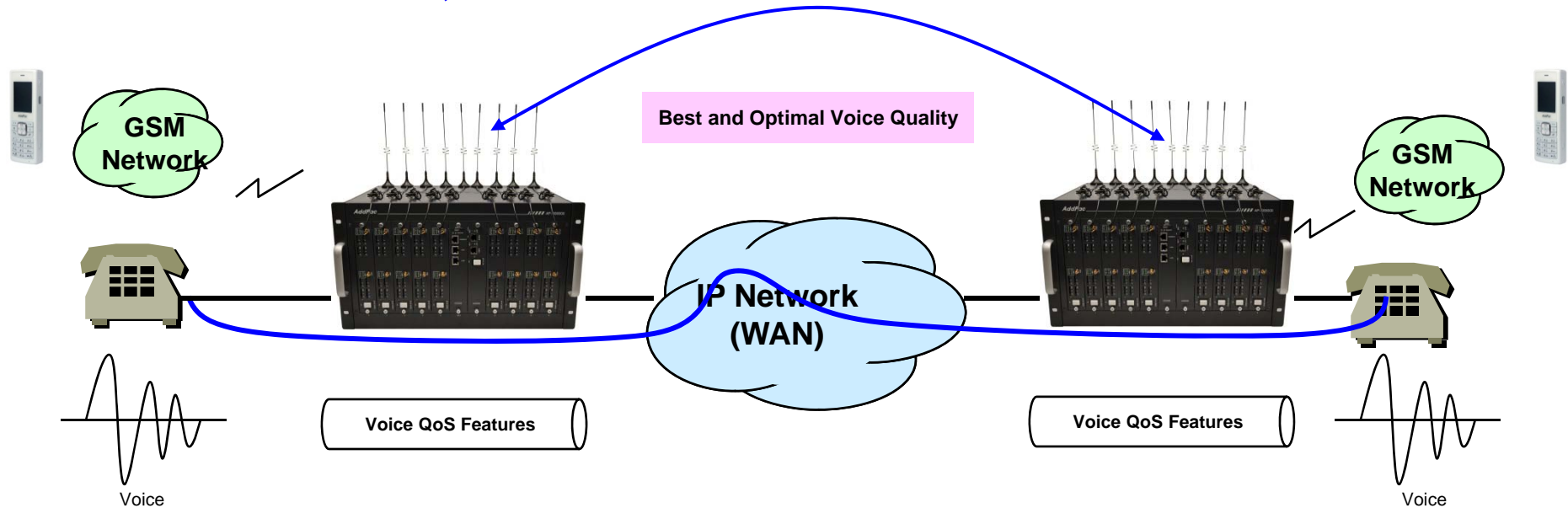
- Call transfer for internal calls
- Call pickup for internal calls
- Calling and called number conversion for VoIP outbound calls
- Calling and called number conversion for VoIP inbound calls
- Fax broadcasting call control



Advanced QoS Features

AP-CBS5000 Cellular Emergency Broadcasting Server

- 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



Network Protocols

AP-CBS5000 Cellular Emergency Broadcasting Server

Basic Network Protocols

- ARP, IPv4, TCP, UDP, ICMP, SCTP, IGMP, MLD

Routing Protocol

- IPv4 : Static

Service Protocol

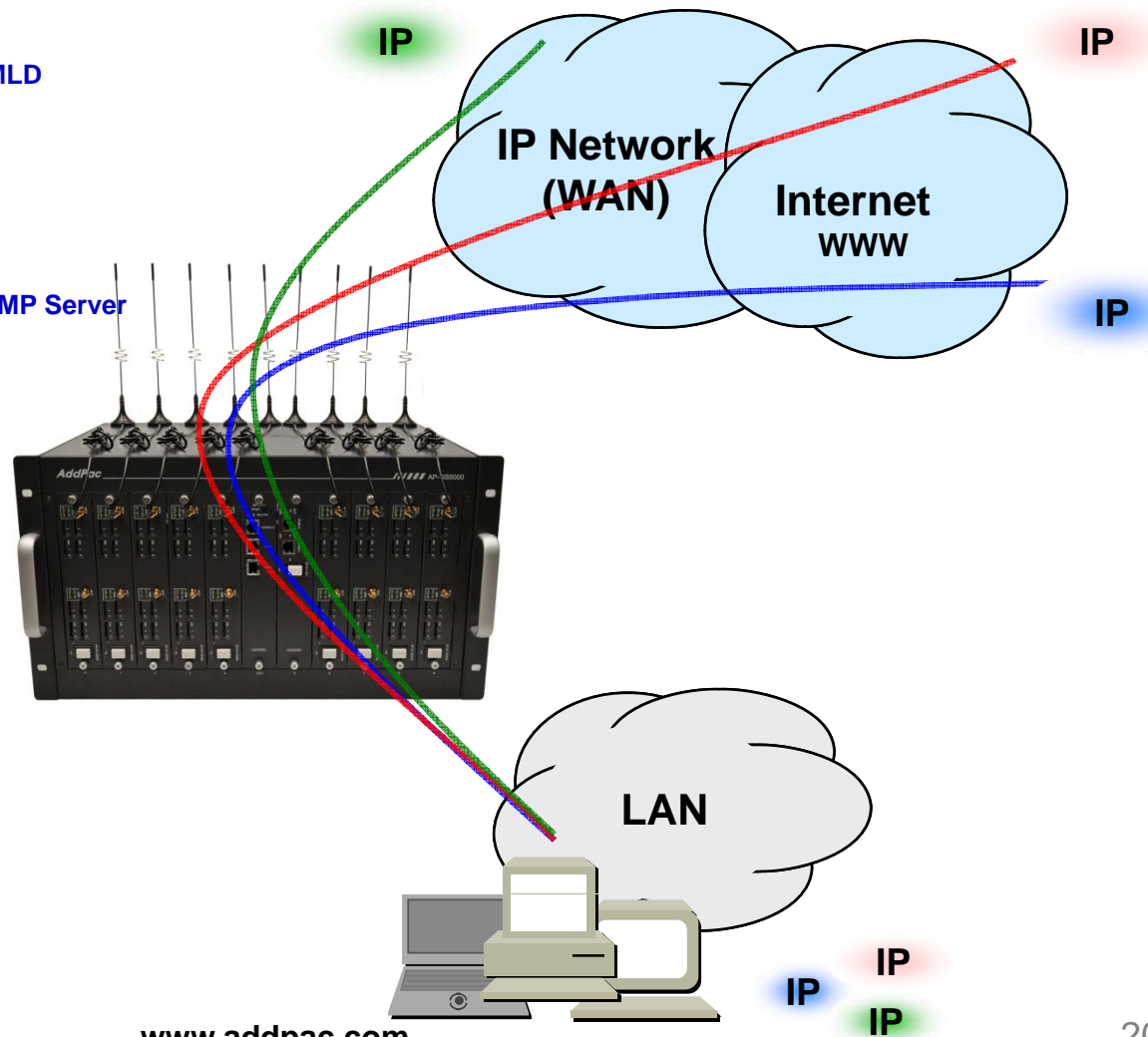
- FTP, Telnet, TFTP, DHCP Server/Relay, SNMP Server
- CDP (Cisco Discovery Protocol)
- DNS Resolver , DDNS(nsupdate)
- Bridge
- Syslog

IPv4 Address Configuration

- Fixed (Static)
- DHCP
- PPPoE

Miscellaneous

- Cisco Style CLI
- Standard & Extended IPv4 Access List
- Multi-level User Account Management
- IP accounting
- STUN Client



Network Management

AP-CBS5000 Cellular Emergency Broadcasting Server

- **SNMP**

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

- **Web-based Management**

- Smart Easy Setup
- Standard Voice Interface
- Standard PSTN Back-up Interface

- **Watch-dog Function**

- Hardware, Software watch-dog services

- **Remote Management**

- Telnet
- Rlogin

- **Auto Upgrade Service**

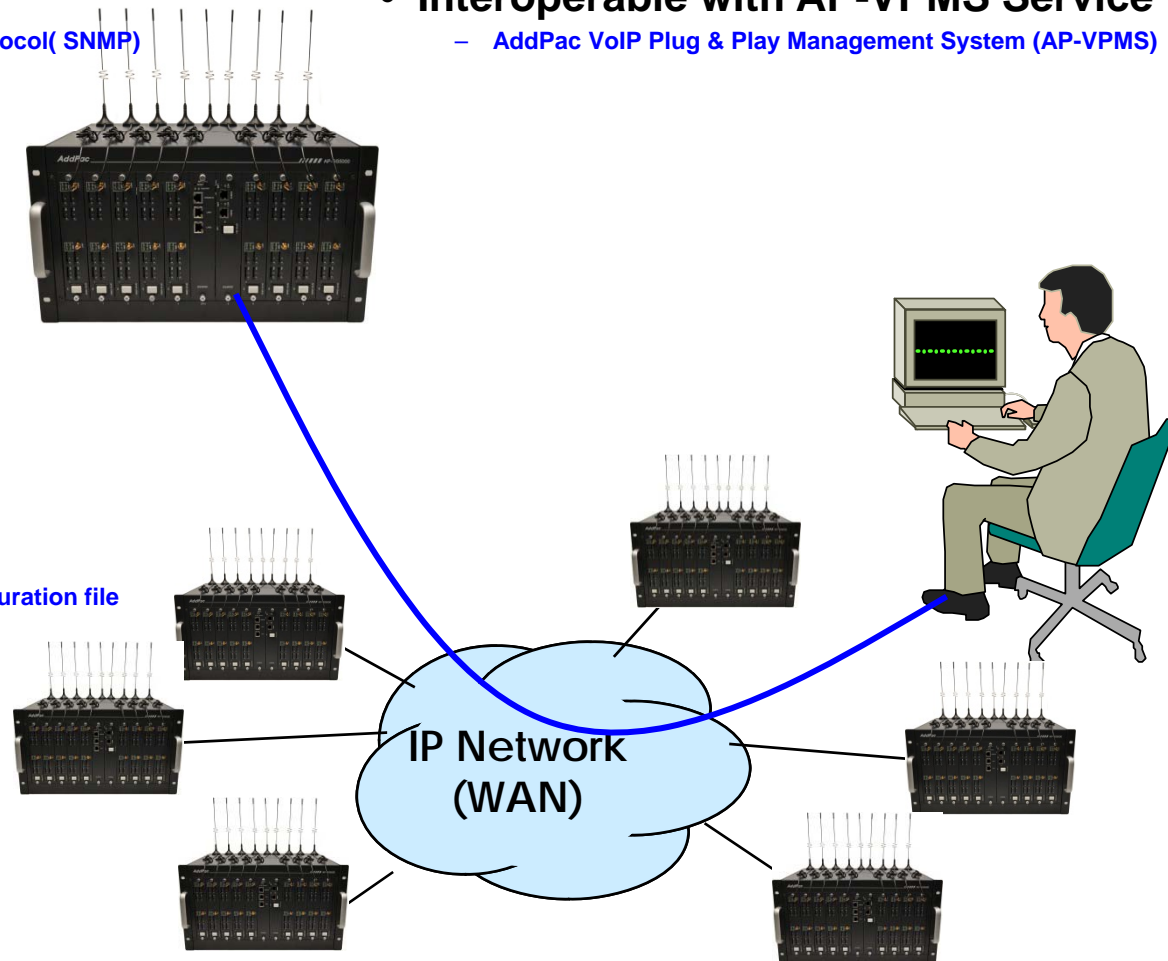
- HTTP server based APOS image and configuration file auto-upgrade support

- **Batch Job Function**

- Text based script downloading

- **Interoperable with AP-VPMS Service**

- AddPac VoIP Plug & Play Management System (AP-VPMS)

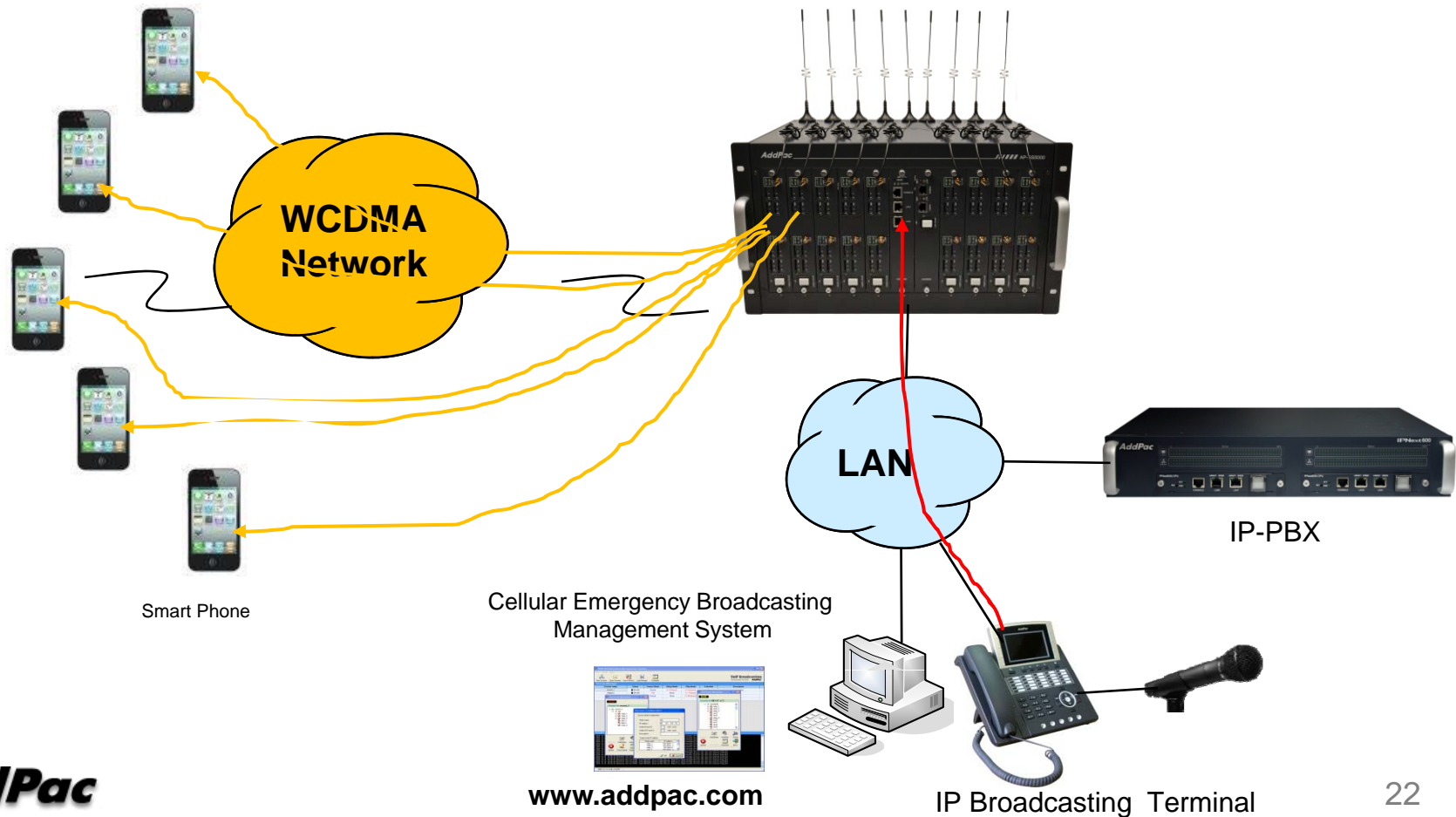


Standard Application

AP-CBS5000 Cellular Emergency Broadcasting Server

Network Diagram

AP-CBS5000 Cellular Emergency Broadcasting Server



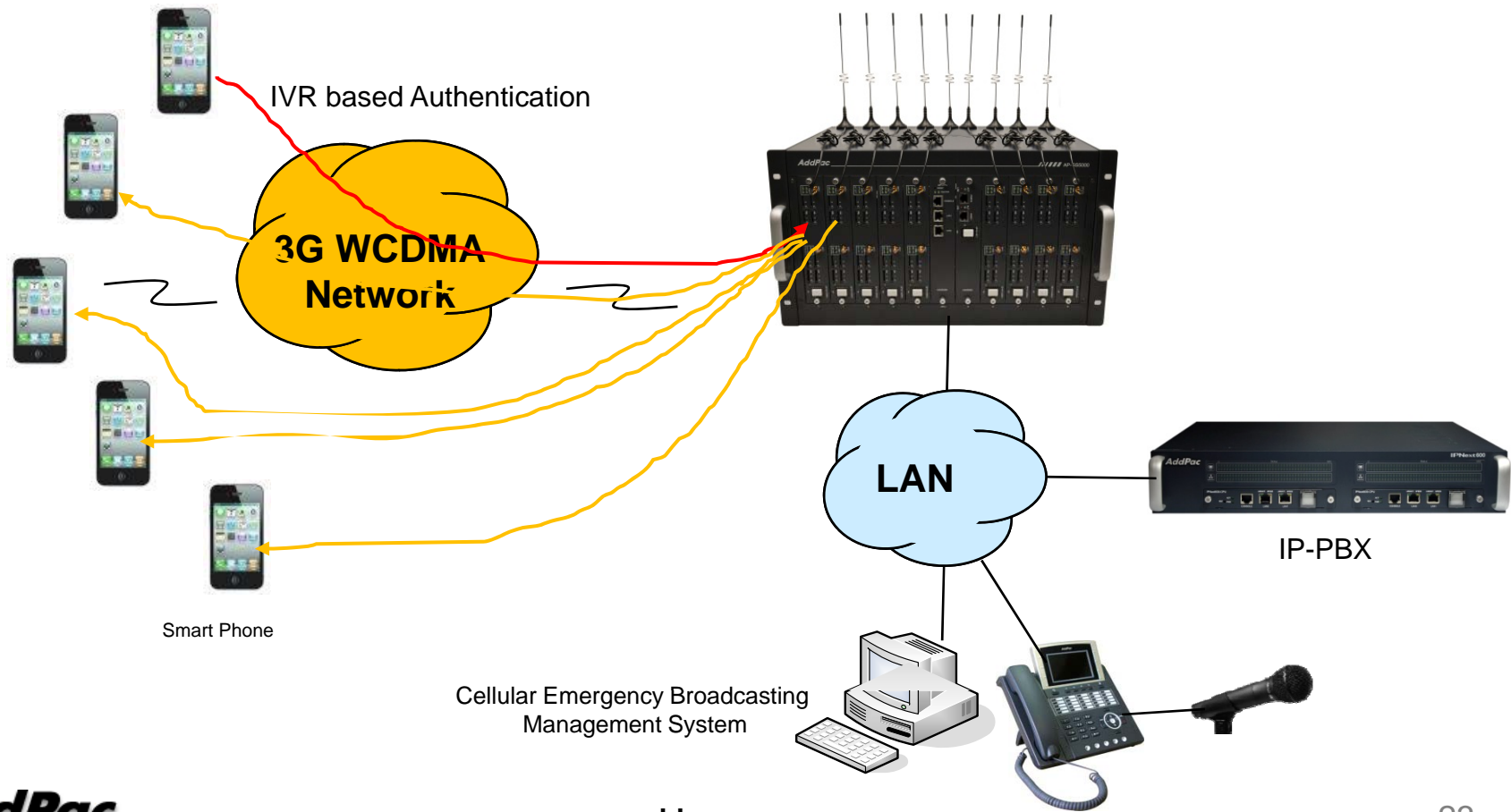
Standard Application

AP-CBS5000 Cellular Emergency Broadcasting Server

Remote Broadcasting Service

Remote Broadcasting Terminal(including SMS)

AP-CBS5000 Cellular Emergency Broadcasting Server



Ordering Information

- **AP-CBS5000 Cellular Emergency Broadcasting Server**
 - AP-CBS5000 Main Body
 - Ten(10) Module Slots for GSM, WCDMA, VoIP Module
 - RISC Microprocessor with High-end Programmable DSP Architecture
 - 2-port 10/100/1000Mbps Gigabit Ethernet(RJ45)
 - 1-Port RS232C Console Interface(RJ45)
 - Option Module : AP-N1-GSM8, AP-N1-3G8, AP-N1-FXS8, AP-N1-FXO8, AP-N1-2E1/T1, etc
 - Including Network Cable, Antenna, etc.
- **Built-in APOS Internetworking Software for AP-CBS5000**
- **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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