# GSM based Voice Recording Solution


AddPac

**AddPac Technology**

Sales and Marketing

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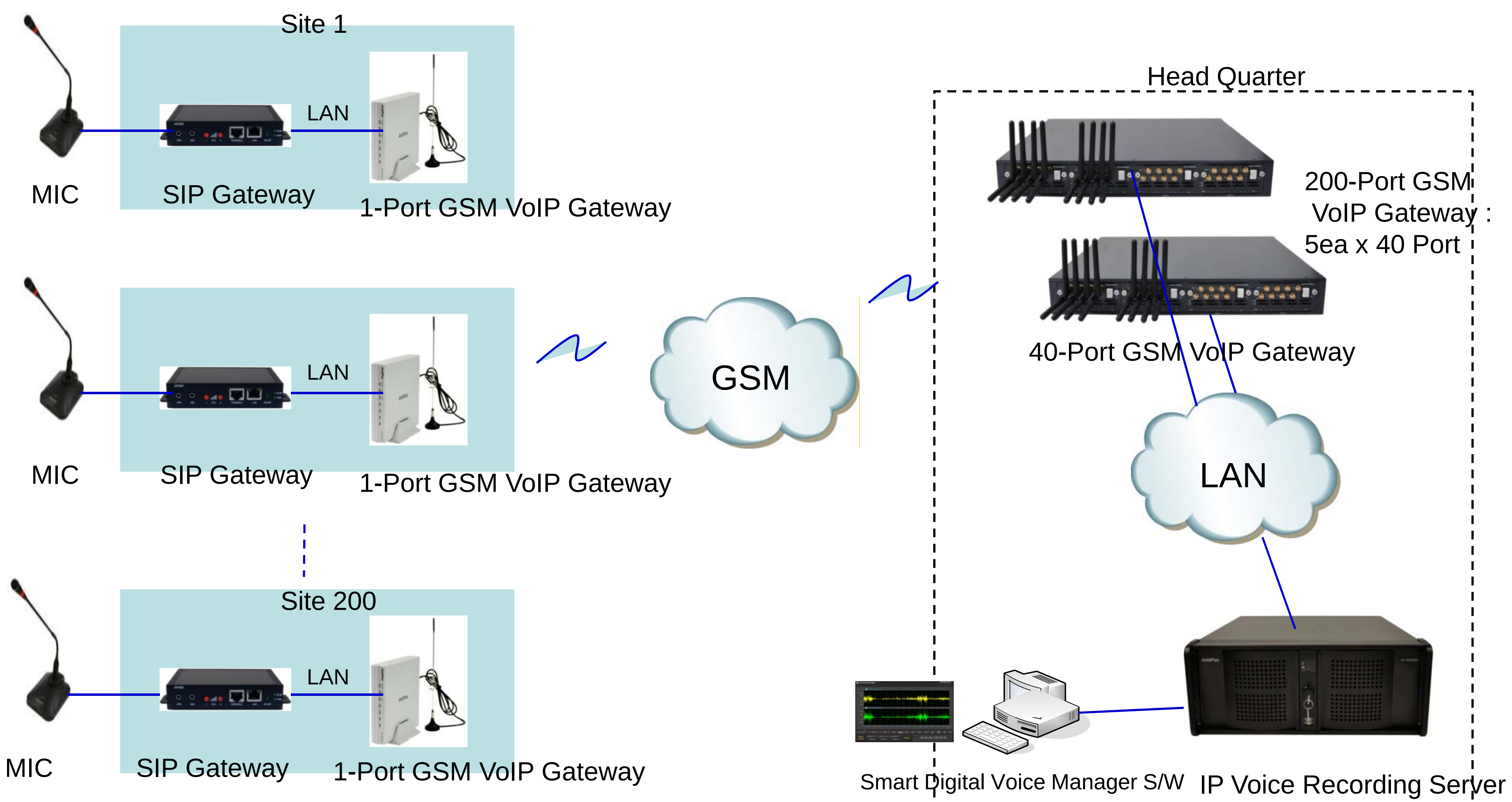
# Contents

# Network Diagram



# GSM based Voice Recording Solution

| IP Voice Recording Server<br>AP-NR3000 | SIP Gateway<br>With MIC interface<br>AP601 | GSM VoIP Gateway<br>For Center<br>AP-GV3200 | GSM VoIP Gateway<br>For Site<br>AP-GS1001 |
|---|---|---|---|
|  |  | <br> |   |
| Linux based Voice Recording Server and Management Software. | Embedded Hardware based SIP Gateway with MIC Interface<br>Voice Codec,G.711, G.726 | 40-Port GSM VoIP Gateway<br>8-Port GSM Module<br>CPU Module Type H/W. | 1-Port GSM VoIP Gateway<br>SIP Protocol<br>Field Proven |

# AP-NR3000
# IP Voice Recording Server

# Product Overview

## AP-NR3000 Network Voice Recoding Server

- IP based Network Voice Recording Server
- Linux Operating System
- Powerful Management and User Friendly Features
- High-performance Voice Recoding Service
- External Media Gateway(ex:AP-MG3000) Interworking Support
- Firmware Upgradeable Architecture
- One(1) 10/100/1000Mbps Gigabit Ethernet Interface
- One(1) DVD Writer for Audio File Backup
- Up to Four(4) 3.5Inch SATA Hard Disk Interface Support
- USB Interface Support (Front Side, Back Side)

# Hardware Specification

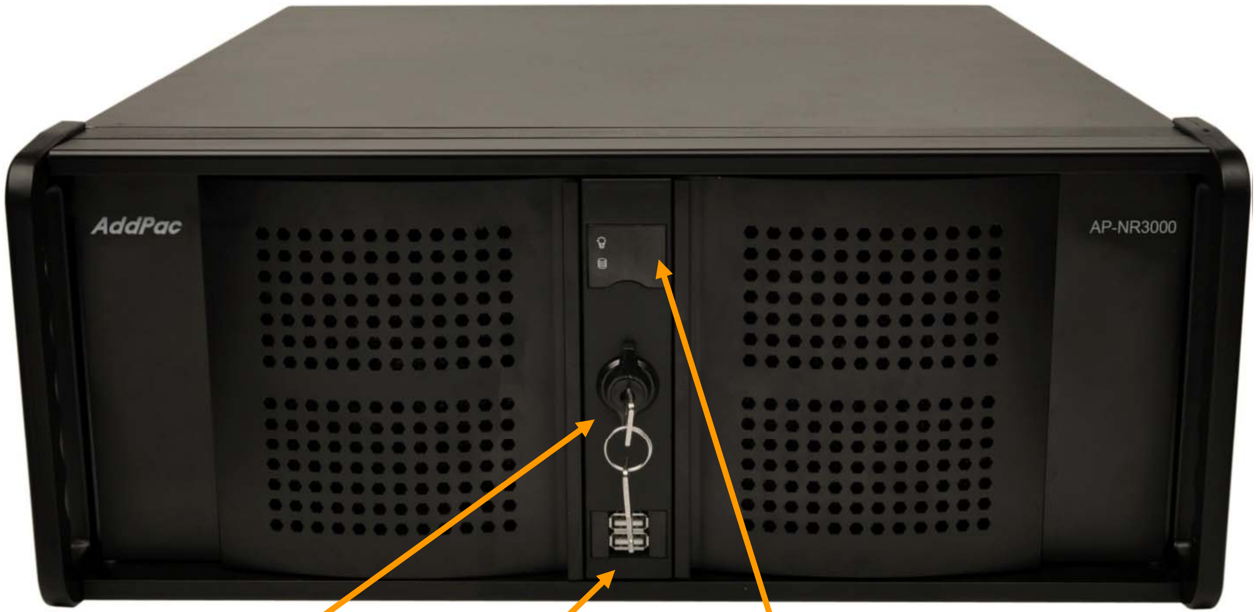
## AP-N3000 Network Voice Recoding Server

- High Performance Computing Power
- Main Chassis
  - Network Interface
    - One(1) 10/100/1000Mbps Fast Ethernet
  - Video Output Interface
    - HDMI, DVI,RGB Video Output
  - USB 2.0 Interfaces for Mouse, Keyboard, etc
  - One(1) DVD Writer for Video File Backup
  - Up to Four(4) Hard Disk

# Hardware Specification

## AP-NR3000 Network Voice Recording Server

AP-NR3000 Front Side




Cabinet Open Key

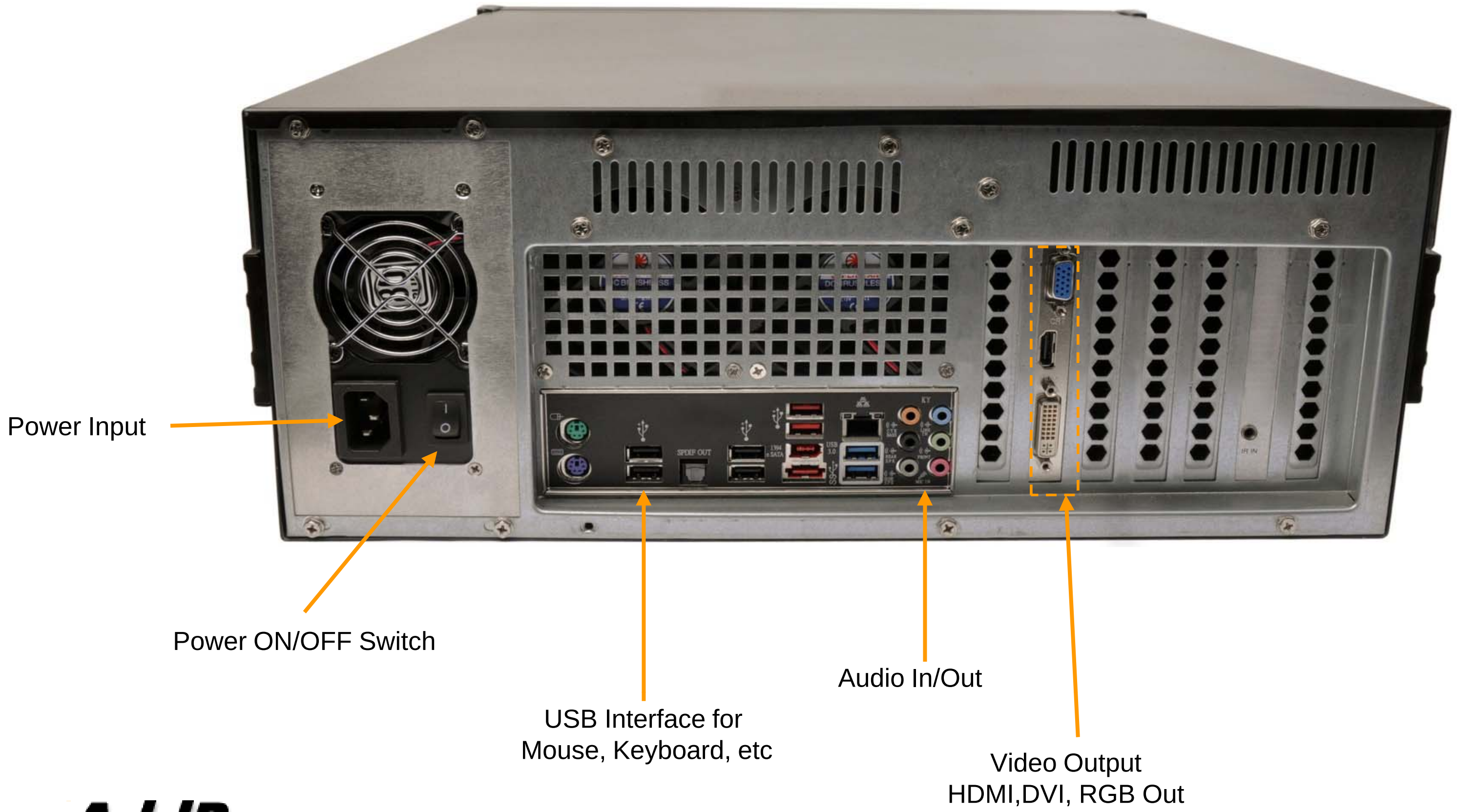
USB Interface

Power & HDD Access Indication LAMP

# Hardware Specification

## AP-NR3000 Network Voice Recoding Server

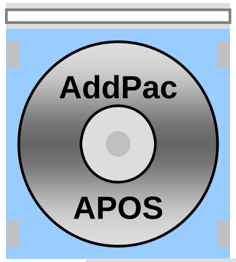
AP-NR3000 Back Side

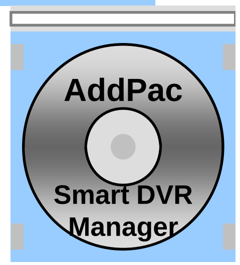


# Software Service

AP-NR3000 Network Voice Recoding Server

- **Built-in AddPac Internetworking Software**
  - Scalability, Functionality, and Stability Features
  - Advanced Network $DV_{oice}R$ Recording & Live Streaming Features
  - QoS Control Features
- **Firmware Upgradeable Architecture**
- **Industry Standard Network Protocol Features**
- **Highly User Friendly Management Features**
  - PC based Window Program
  - Smart $DV_{oice}R$ Manager



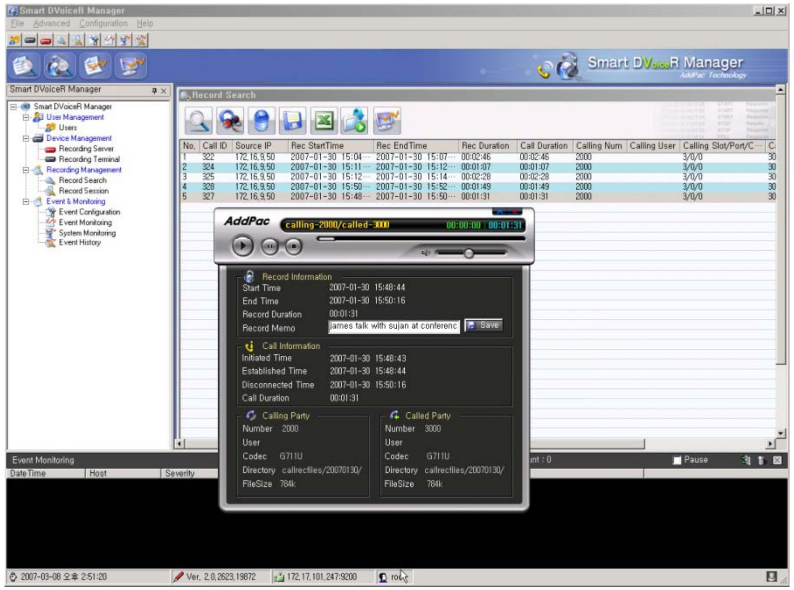
# Network Voice Recoding Components

## AP-NR3000 Network Voice Recoding Server

- Voice Recording & Manager Server
  - AP-NR500
  - AP-NR700
  - AP-NR3000
- Voice Recording Endpoints
  - Analog/Digital VoIP Gateways : AP2650, AP2640, AP2620, AP-MG3000etc
  - IP Phones : AP-IP300, AP-IP200, etc
  - Video Phones (Voice Capturing) : AP-VP300, AP-VP200, AP-VP150,etc
- Voice Transcoder (G.723,G.729-> G.711,etc)
  - AP-VTC1000
- Smart $D_{voice}R$ Management Program

# Smart DV$_{oice}$R Management Program

## AP-NR3000 Network Voice Recoding Server




- Call History Management (search/modify/delete/save)
- Media Play Management (Play/Stop/Seek/Pause)
- Live Call List Management, Live Call Monitoring
- Local Backup (File Manager Support, PC HDD, DVD) and Local Play
- User Management (registration/modify/delete/search)
- Server Status (CPU/Memory/HDD) & Event Monitoring
- Waveform Analyzing Function
- Recording Source Management (VoIP Gateway, IP Phone, etc)
- Live Recording Board

# AP601 SIP Gateway with MIC Interface

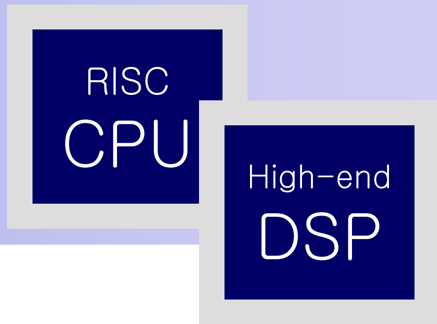
# Product Overview

## AP601 SIP Gateway with MIC Interface

- IP based Voice Broadcasting/Recording Terminal Solution
- Hardware Architecture for Voice Broadcasting/Recording Terminal Service
- Remote Broadcasting Service at terminal side
- High Quality Voice Codec Support (High Quality Codec, G.711, etc)
- SIP VoIP Signaling Protocol Support
- RTP/UDP Protocol Support
- Unicast and Multicast Broadcasting Scheme
- WBS (Window based Broadcasting Management System) Support
- One(1) channel SPK/MIC Port
- High-Quality Audio/Voice Service
- Firmware Upgradeable Architecture
- Broadcasting Solution with Outstanding Network Service Capability
- External Power Supply

# Hardware Specification

## AP601 IP Paging Terminal




- RISC Microprocessor Computing Power
- High-end Programmable DSP Hardware Architecture
- High Quality Audio Encoding/Decoding Service
- One(1) 10/100Mbps Fast Ethernet (RJ45)
- One(1) RS-232C Interface (RJ45)
- SPK/MIC Audio Interface Support
- Volume Control Button Support (Up, Down)
- External Power Supply Support

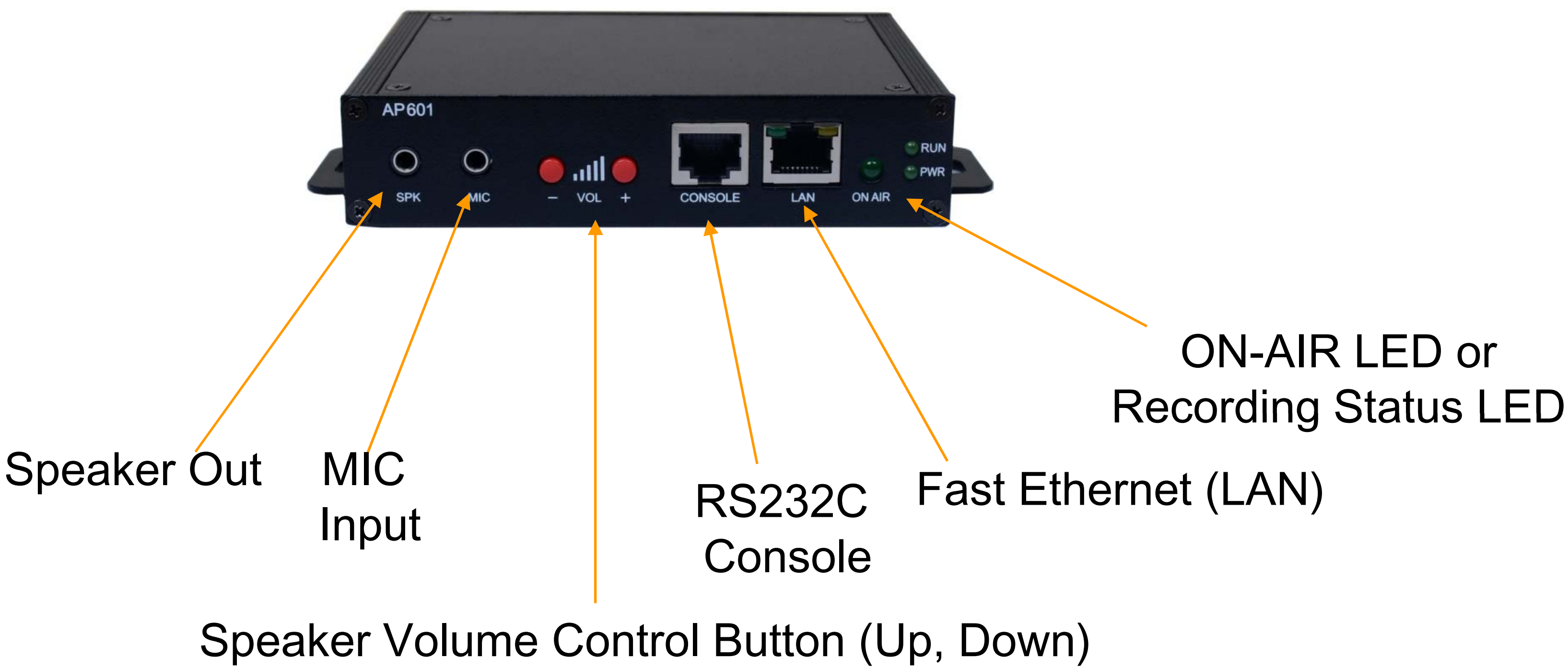
# Hardware Specification

AP601 IP Paging Terminal

RISC CPU

High-end DSP

## Front Side



## Back Side


External Power Supply Adaptor

Power Switch

# AP-GV3200
# 40-Port GSM VoIP Gateway

# Contents

- Product Overview
- Hardware Specification
- VoIP (Voice over IP) service
- Advanced QoS Features
- Network Protocols
- Network Management
- Smart Web Management
- Security Management

# Product Overview

AP-GV3200 Multi-Port GSM VoIP Gateway

- Five(5) Module Slots for 8-Port GSM Module, Digital Interface (Up to 40-Port GSM, 1-2 Port Digital E1/T1 Module)
- Hot-Swap Function Support
- 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)
- Two(2)10/100Mbps Fast Ethernet
- One(1) RS-232C Port for Command Line Interface
- Firmware Upgradeable Architecture
- Smart Web Manager Support
- Smart NMS(Network Management System) Support
- Advanced Voice QoS Mechanism
- Rack Mountable Chassis with Internal Power Supply

# Hardware Specification

## AP-GV3200 Multi-Port GSM VoIP Gateway

RISC CPU

High-end DSP

- RISC Microprocessor Computing Power
- Five(5) Module Slot for GSM, Digital VoIP Interface
- 8-Port GSM Module(AP-N5-GSM8)
  - 8-Port SIM Card Slots
  - 8-Port Antenna Interface
  - Option : Two(2) GSM Antenna Interface (Internal 4 Channel Combiner x 2)
  - Hot-Swap
- VoIP Interface Module (Hot-Swap)
  - 1-Port Digital E1/T1 VoIP Module (AP-N1-1E1)
  - 2-Port Digital E1/T1 VoIP Module(AP-N1-2E1)
- Network Interface

  -Two(2) 10/100Mbps Fast Ethernet (RJ45)
- RS232C Console Interface for CLI
- Run LED, LAN LED, Port LEDs
- Internal Power Supply

# Hardware Specification

## AP-GV3200 Multi-Port GSM VoIP Gateway

RISC CPU

High-end DSP

| AP-GV3200 GSM VoIP Gateway | Basic Specifications |
|---|---|
| Voice Interface | Five(5) Module Slots for GSM, Digital VoIP Interface |
| | AP-N5-GSM8x, AP-N1-E1, AP-N1-2E1 |
| Ethernet Interface | 2-Ports 10/100Mbps Ethernet Interface(RJ-45) |
| Flash Memory | 512Mbyte NAND Flash Memory |
| Base Memory | 128Mbyte High-speed DDR2 |
| Power Requirement | Power Supply / VAC 110~220V, 50/60Hz, 5V 30A |
| Operating Temperature | 0ºC ~ 45ºC (32 ºF ~ 122ºF) |
| Storage Temperature | -40ºC ~ 85ºC (-40ºC ~ 185ºF) |
| Relative Humidity | 5% ~ 95% (Non-condensing) |
| Dimension (H x W x D) | 60mm x 440mm x 407mm |
| Weight(kg) | 6.6Kg |

# Hardware Specification

AP-GV3200 Multi-Port GSM VoIP Gateway

RISC CPU

High-end DSP

## Front Side View


Power Switch

Power Inlet (110~220V)

CPU Board

VoIP Digital 2E1/T1 Module

Hot-Swap Switch

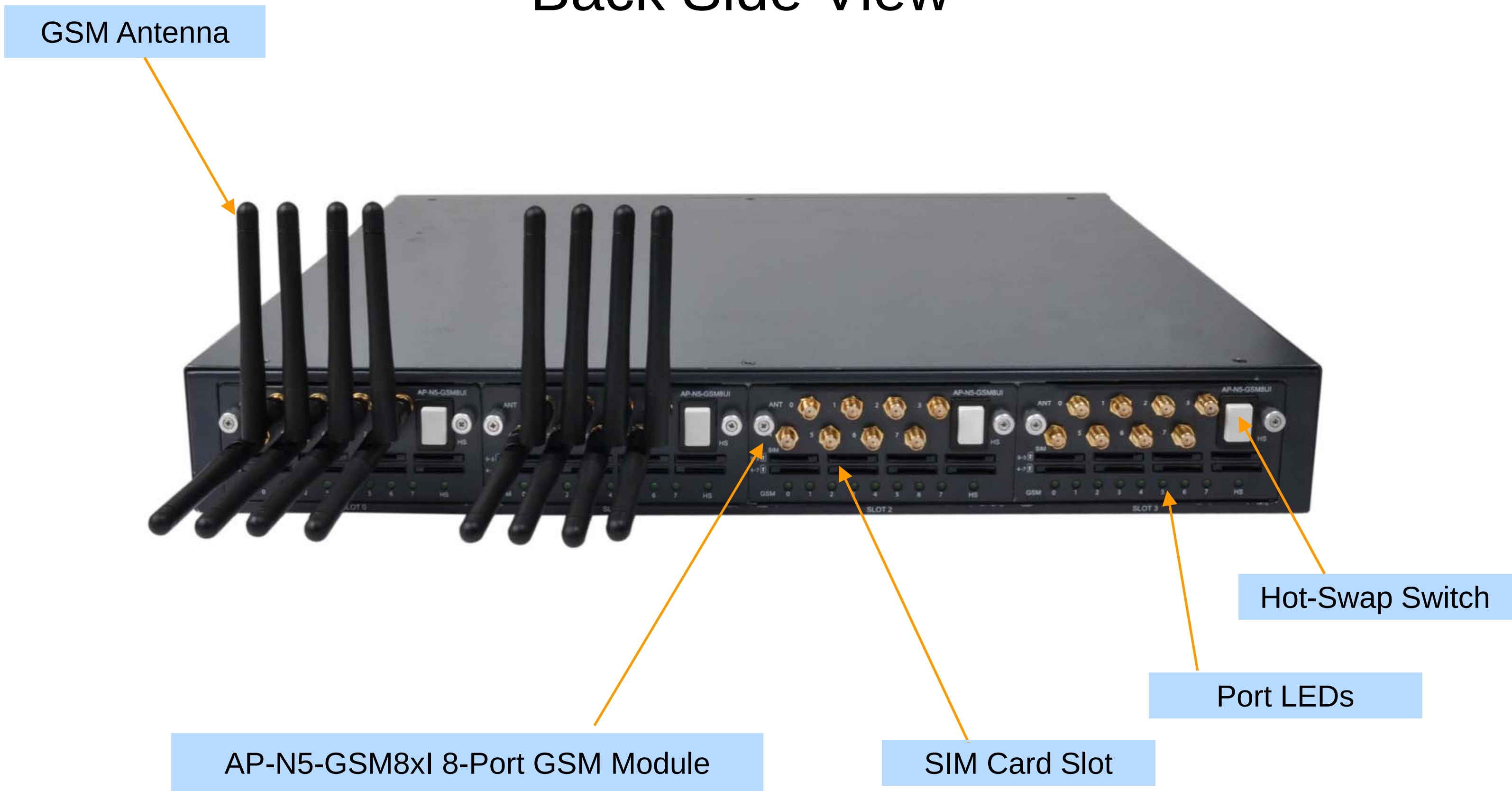
# Hardware Specification

AP-GV3200 Multi-Port GSM VoIP Gateway

RISC CPU

High-end DSP

## Back Side View



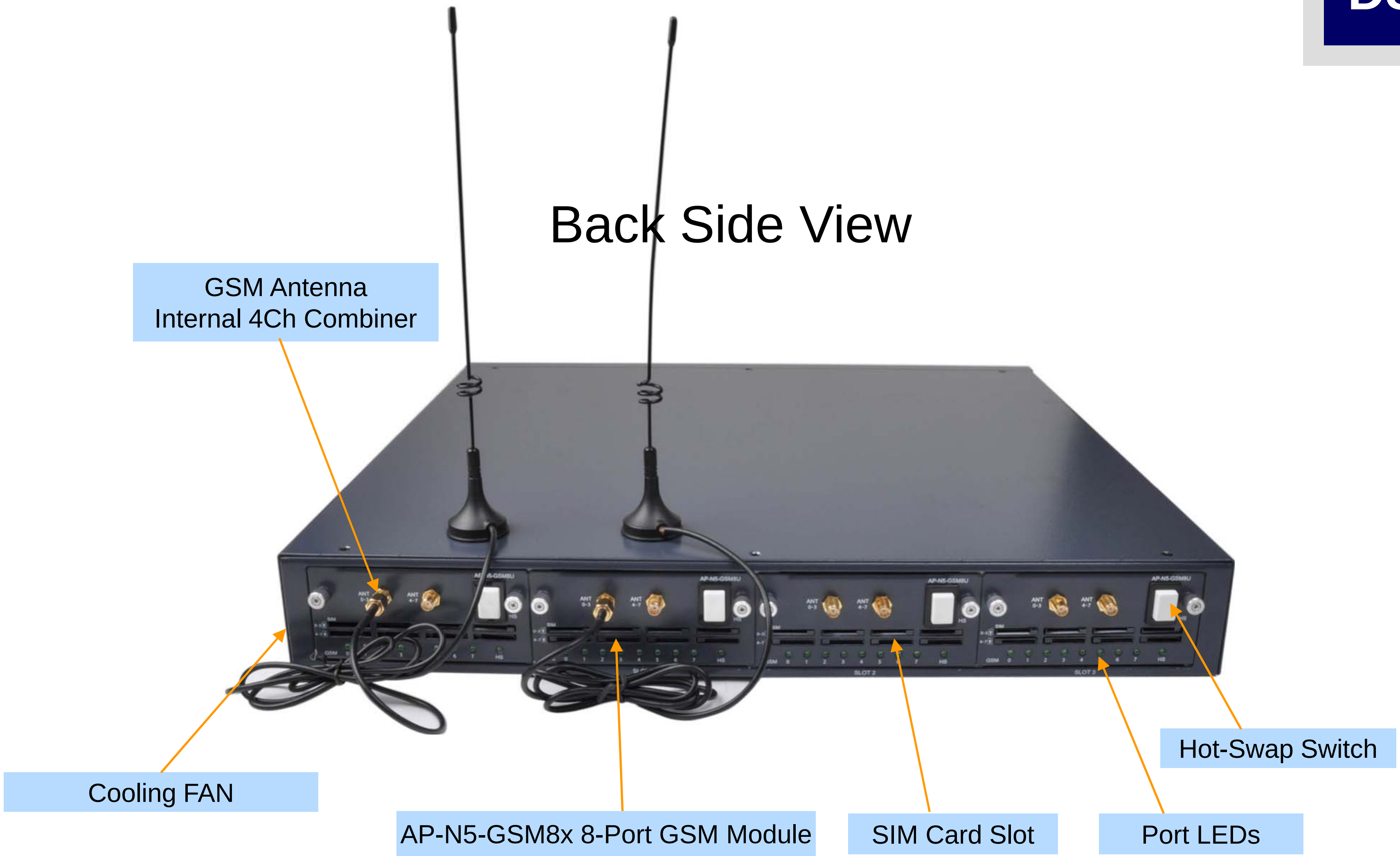
# Hardware Specification

## AP-GV3200 Multi-Port GSM VoIP Gateway

RISC
CPU

High-end
DSP

Back Side View



# GSM & Digital VoIP Modules

## AP-GV3200 Multi-Port GSM VoIP Gateway

| | |
|---|---|
| AP-N5-GSM8x 8-Port GSM Module<br>4-Channel Antenna<br>Combiner Model |  |
| AP-N5-GSM8xI 8-Port GSM Module<br>Individual Antenna |  |
| AP-N1-E1 1-Port Digital E1/T1 Module |  |
| AP-N1-2E1 2-Port Digital E1/T1 Module |  |

# Hardware Specification

## AP-GV3200 Multi-Port GSM VoIP Gateway

RISC CPU

High-end DSP

SIM Card Slot


AP-N5-GSM8xI
(8-Port GSM Module)

GSM Antenna
Internal 4Ch Combiner

Port LEDs

Hot-Swap Switch

RISC CPU

High-end DSP


AP-N5-GSM8x
(8-Port GSM Module)

GSM Antenna 4channel Combiner

Port LEDs

SIM Card Slot

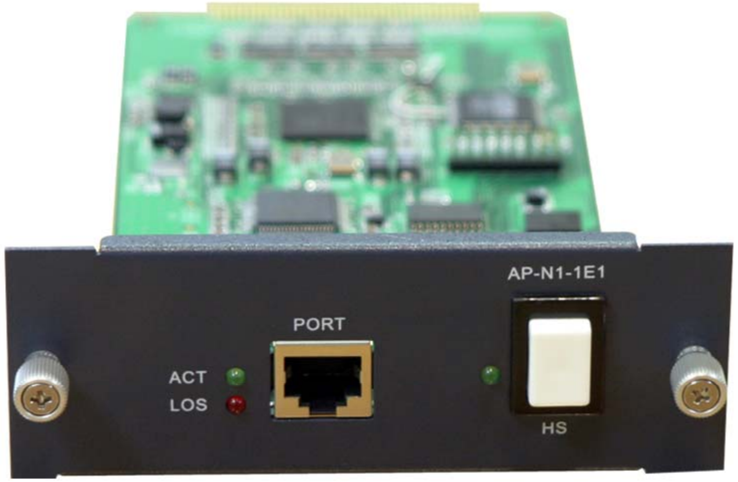
Hot-Swap Switch

# Hardware Specification

AP-GV3200 Multi-Port GSM VoIP Gateway

RISC
CPU

High-end
DSP




AP-N1-E1
(1-Port Digital E1/T1 Module)


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

# Hardware Specification

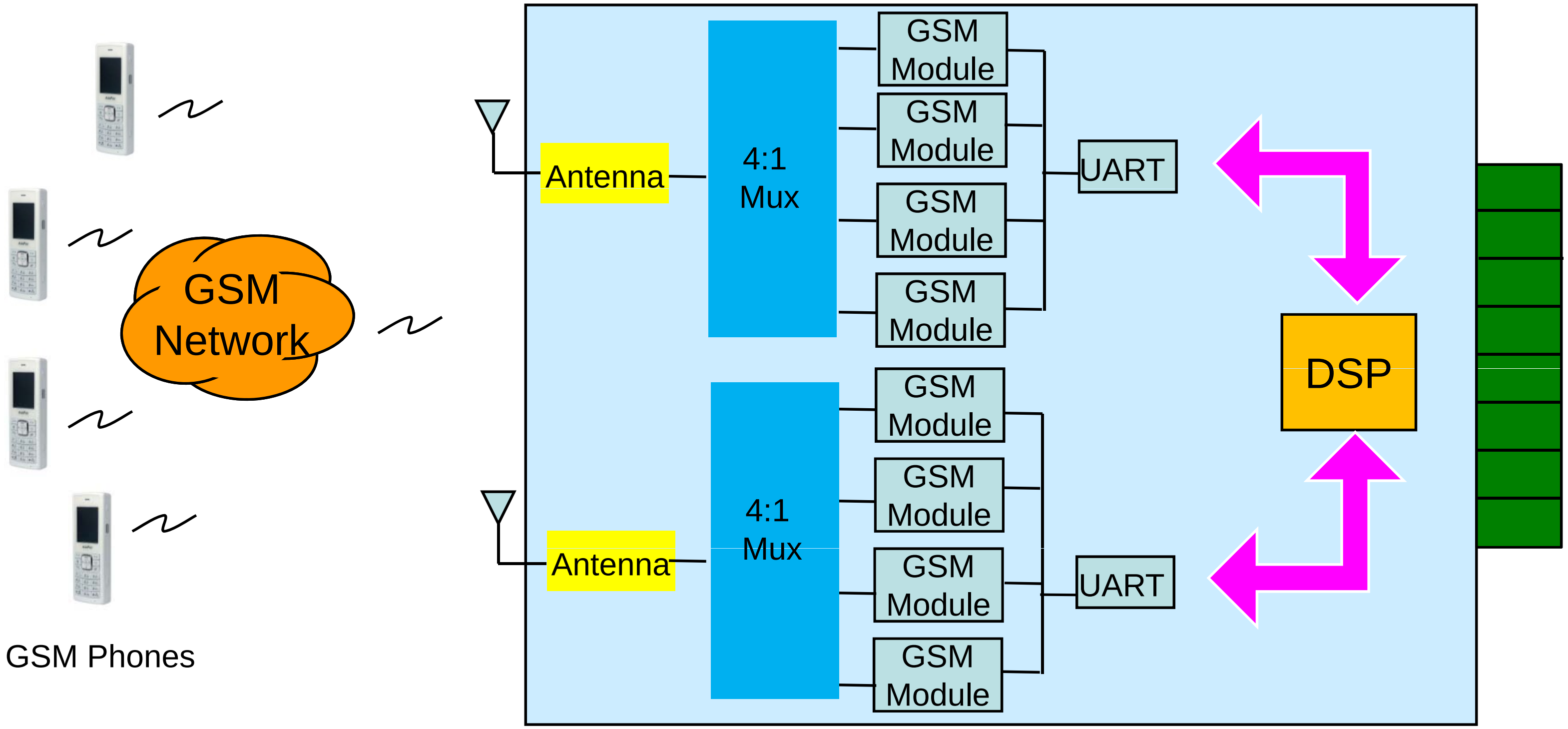
AP-GV3200 Multi-Port GSM VoIP Gateway

RISC CPU

High-end DSP

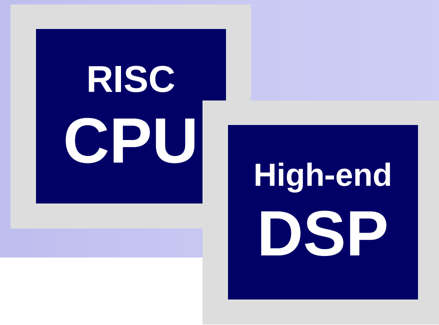
## GSM Gateway Service Diagram

8-Port GSM Module Internal H/W Block Diagram



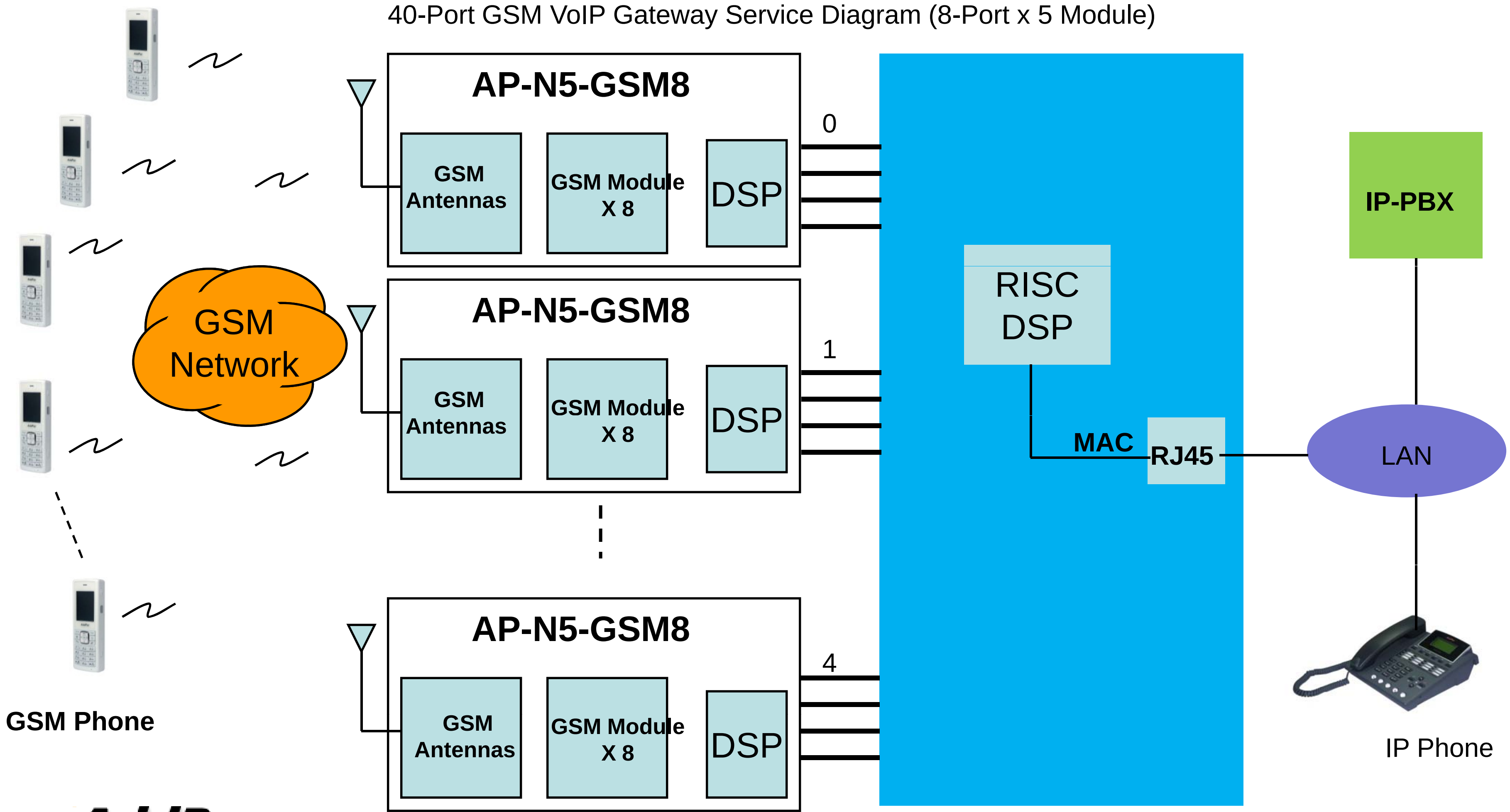
# Hardware Specification

AP-GV3200 Multi-Port GSM VoIP Gateway



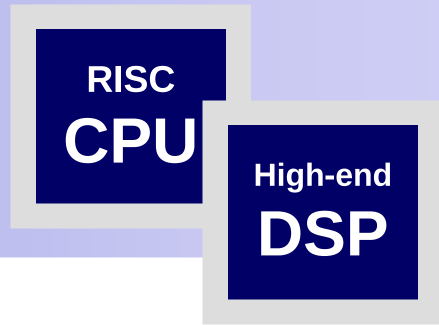

## GSM VoIP Gateway Service Diagram

40-Port GSM VoIP Gateway Service Diagram (8-Port x 5 Module)



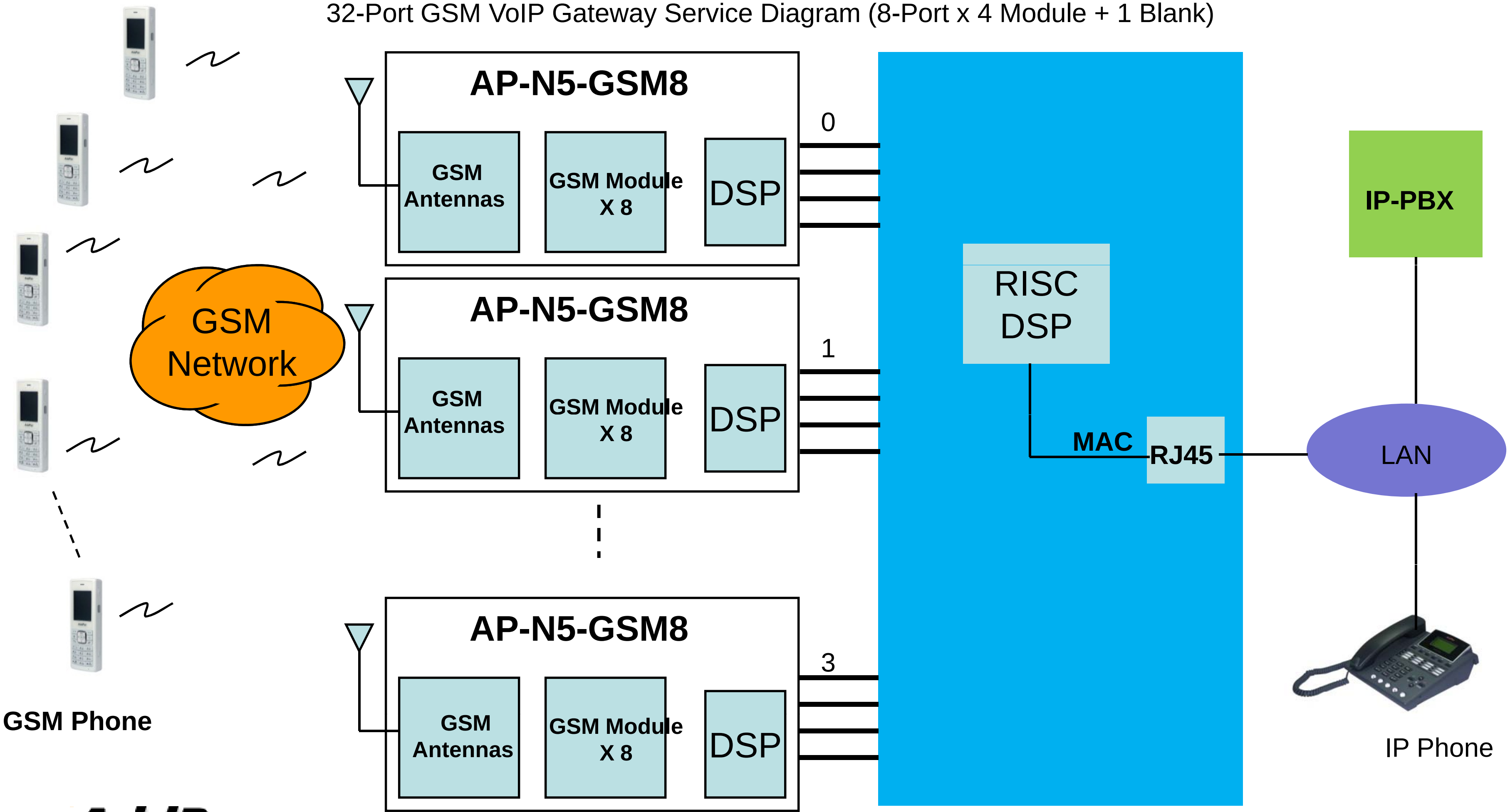
# Hardware Specification

## AP-GV3200 Multi-Port GSM VoIP Gateway



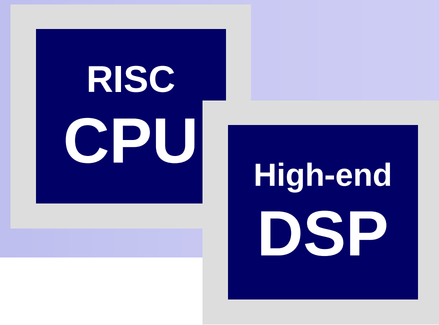

### GSM VoIP Gateway Service Diagram

32-Port GSM VoIP Gateway Service Diagram (8-Port x 4 Module + 1 Blank)



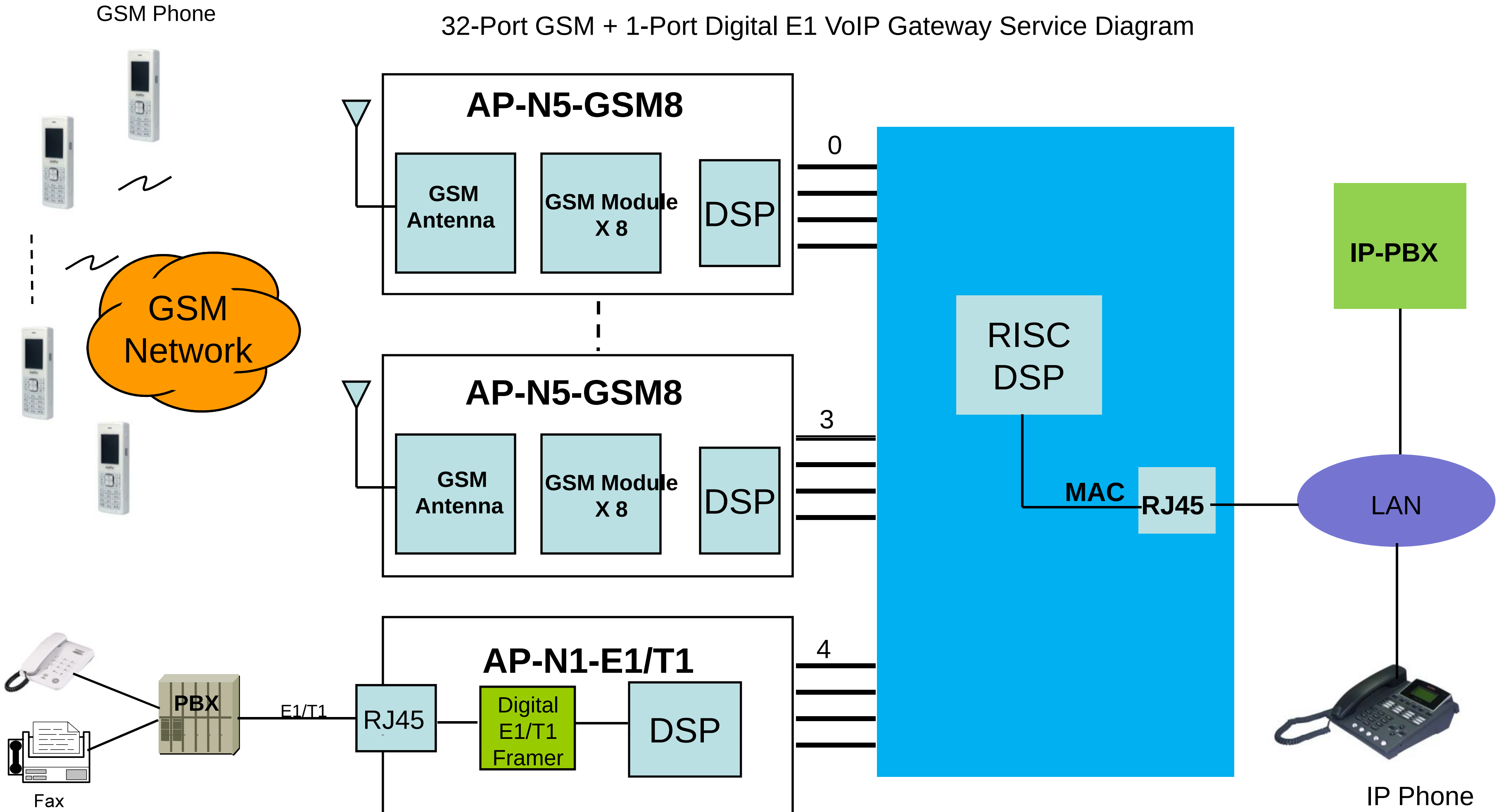
# Hardware Specification

## AP-GV3200 Multi-Port GSM VoIP Gateway




### GSM VoIP Gateway Service Diagram

32-Port GSM + 1-Port Digital E1 VoIP Gateway Service Diagram



# Hardware Specification

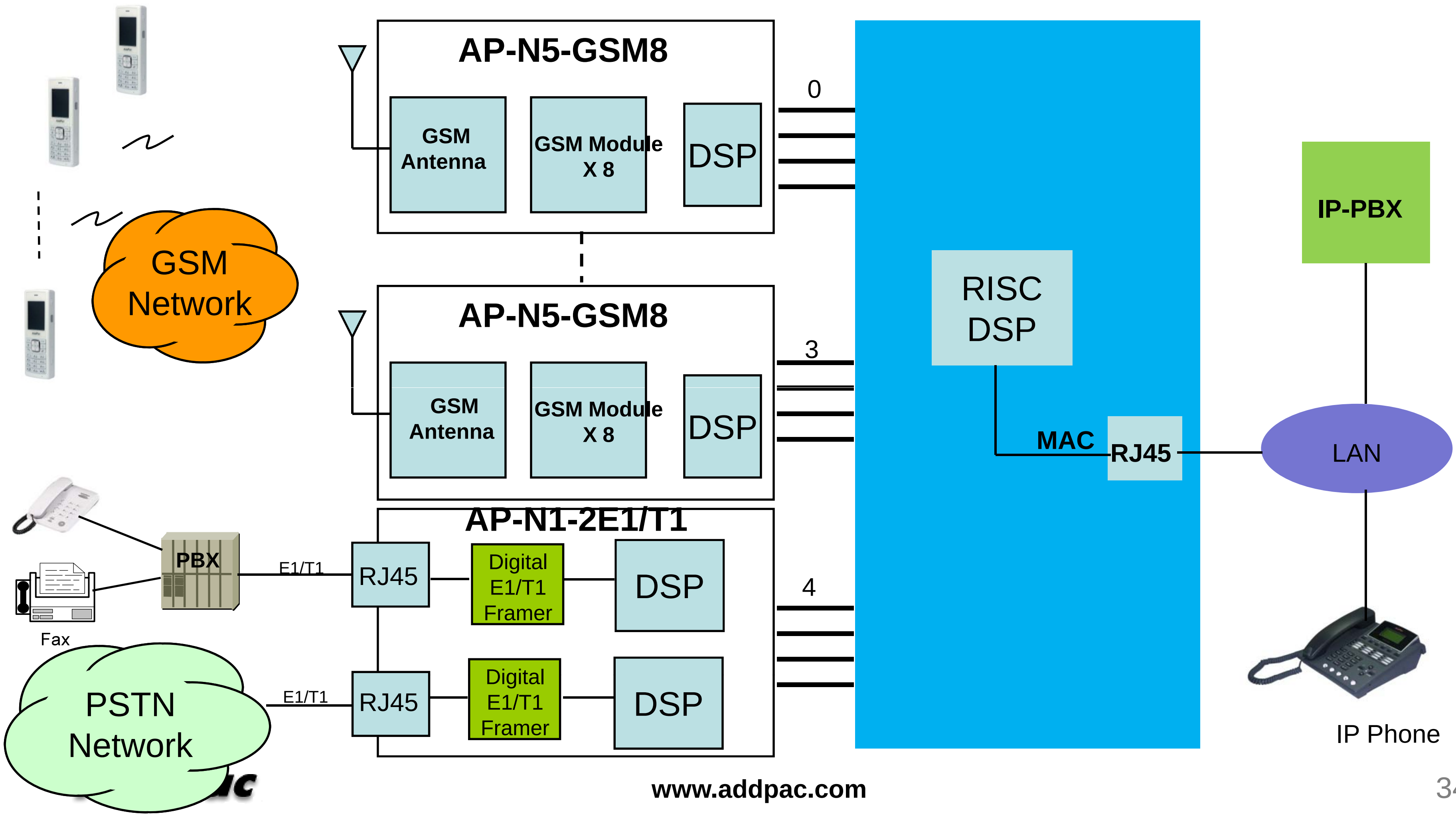
AP-GV3200 Multi-Port GSM VoIP Gateway

RISC CPU

High-end DSP

## GSM VoIP Gateway Service Diagram

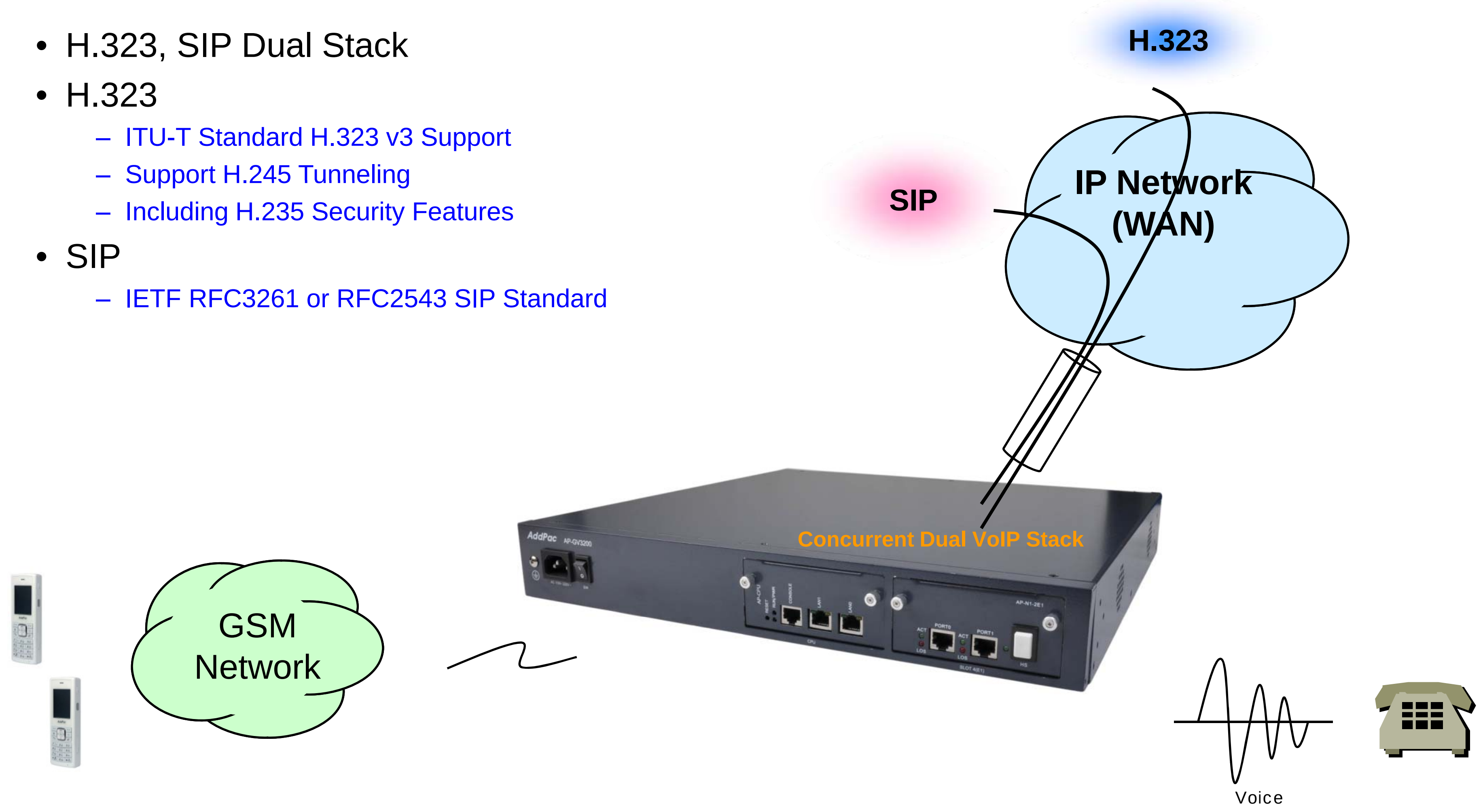
32-Port GSM + 2-Port Digital E1 VoIP Gateway Service Diagram



# VoIP (Voice over IP) Service

## AP-GV3200 Multi-Port GSM VoIP Gateway

- H.323, SIP Dual 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

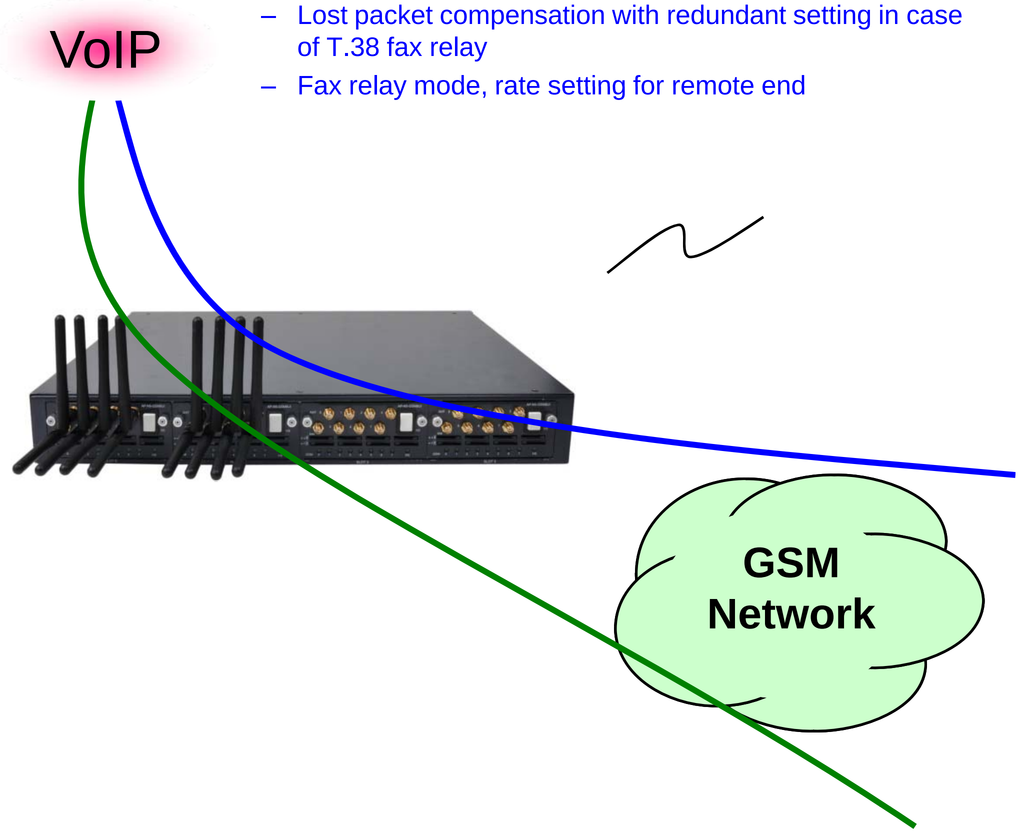
## AP-GV3200 Multi-Port GSM VoIP Gateway

- 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-GV3200 Multi-Port GSM VoIP Gateway

- 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

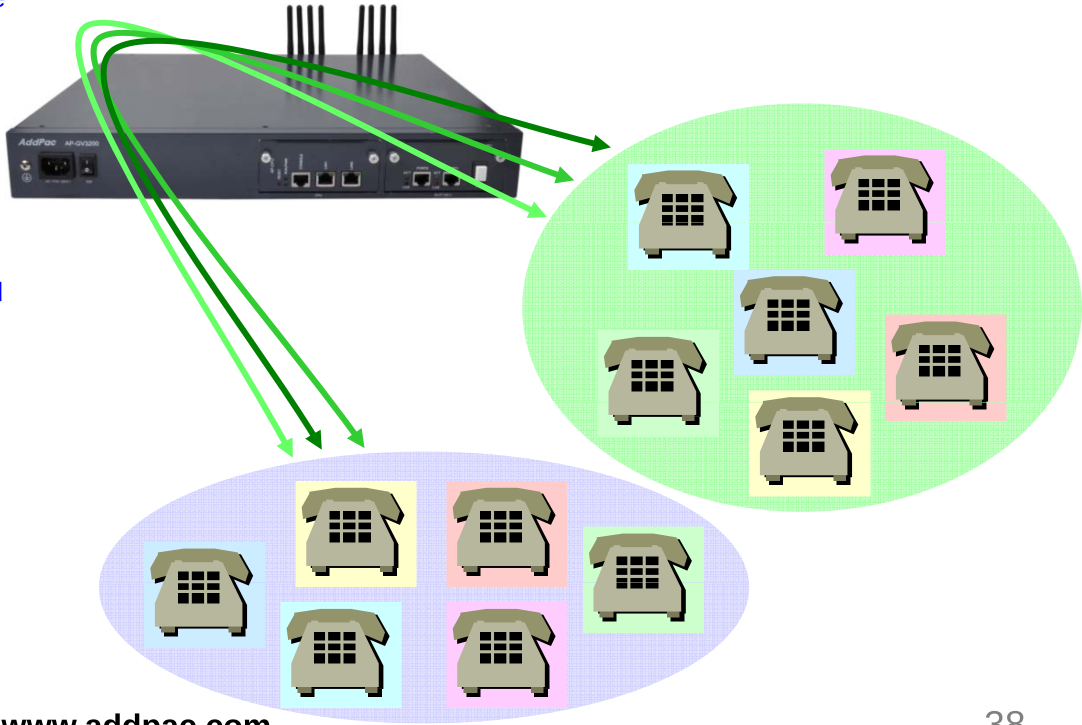


# VoIP (Voice over IP) Service

## AP-GV3200 Multi-Port GSM VoIP Gateway

- 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

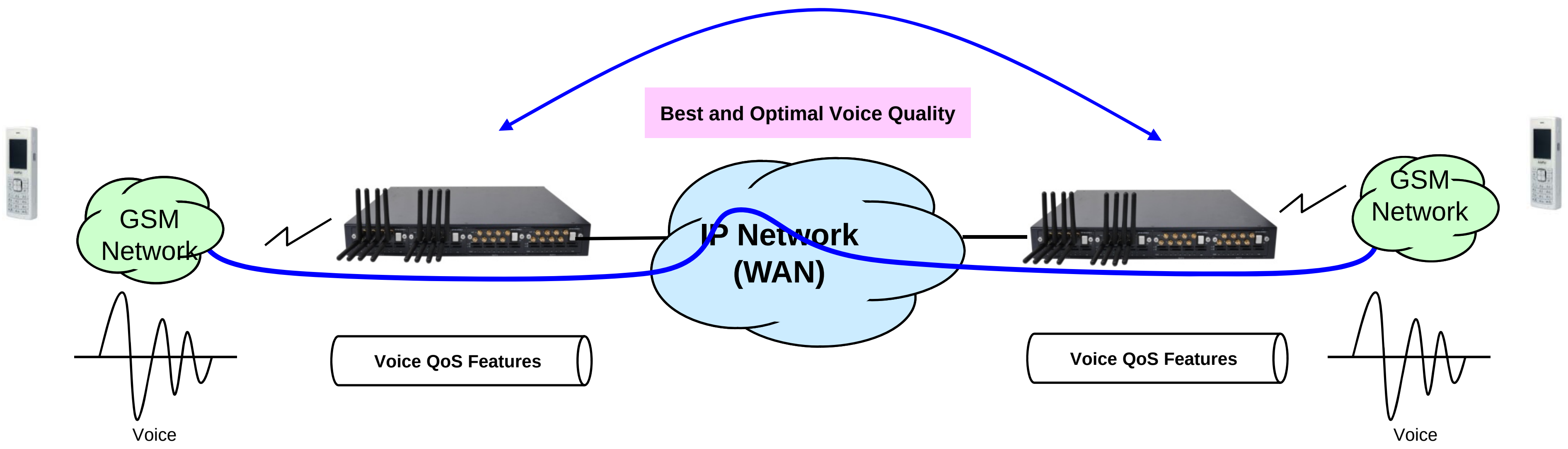
- VoIP Call Controls (cont.)
  - Call transfer for internal calls
  - Call pickup for internal calls
  - Calling and called number conversion for VoIP outbound calls
  - Calling and called number conversion for VoIP inbound calls



# Advanced QoS Features

## AP-GV3200 Multi-Port GSM VoIP Gateway

- 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-GV3200 Multi-Port GSM VoIP Gateway

### Basic Network Protocols

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

### Routing Protocol

- IPv4 : Static

### Service Protocol

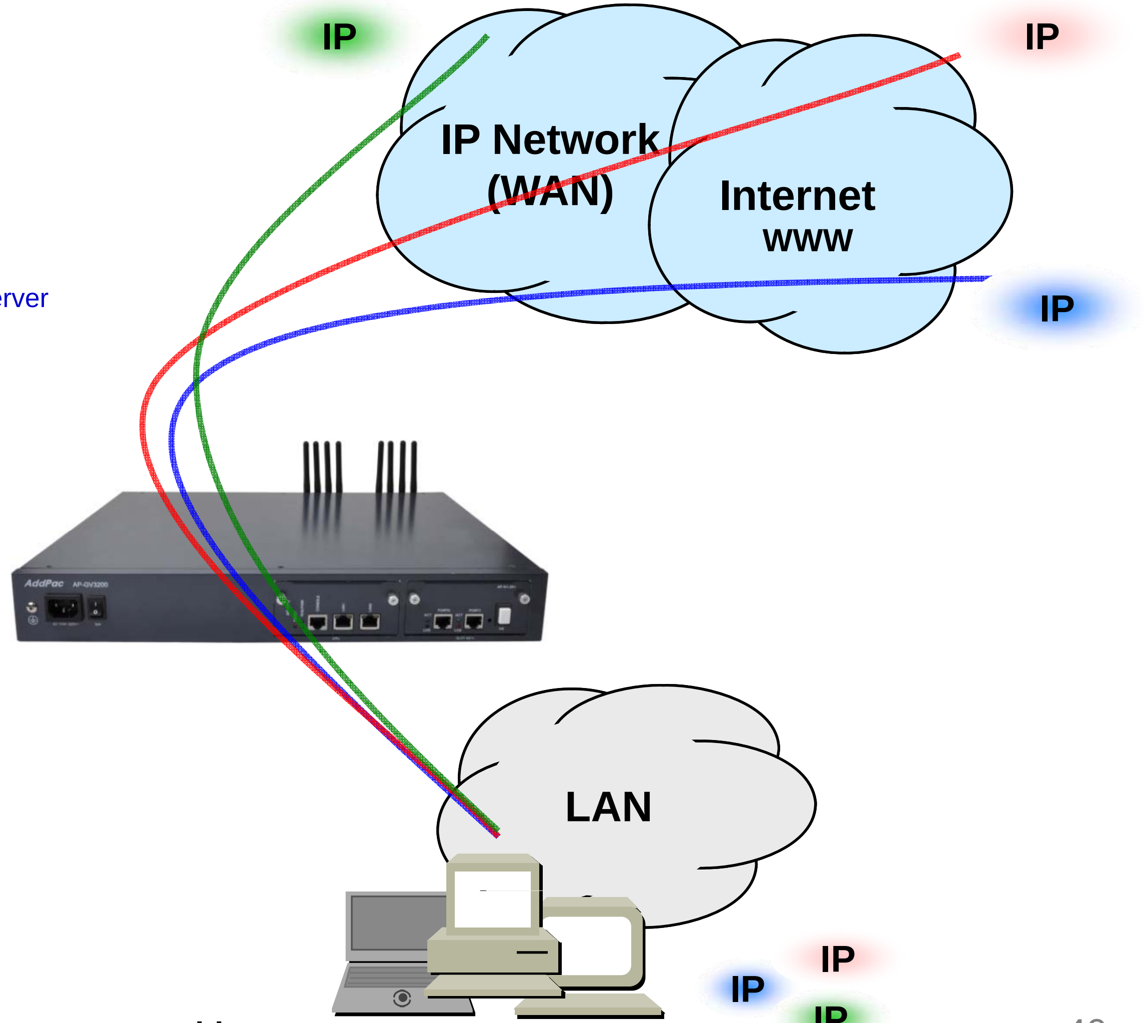
- FTP, Telnet, TFTP, DHCP Server/Relay, SNMP Server
- CDP (Cisco Discovery Protocol)
- DNS Resolver , DDNS(nsupdate)
- Bridge
- Syslog

### 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

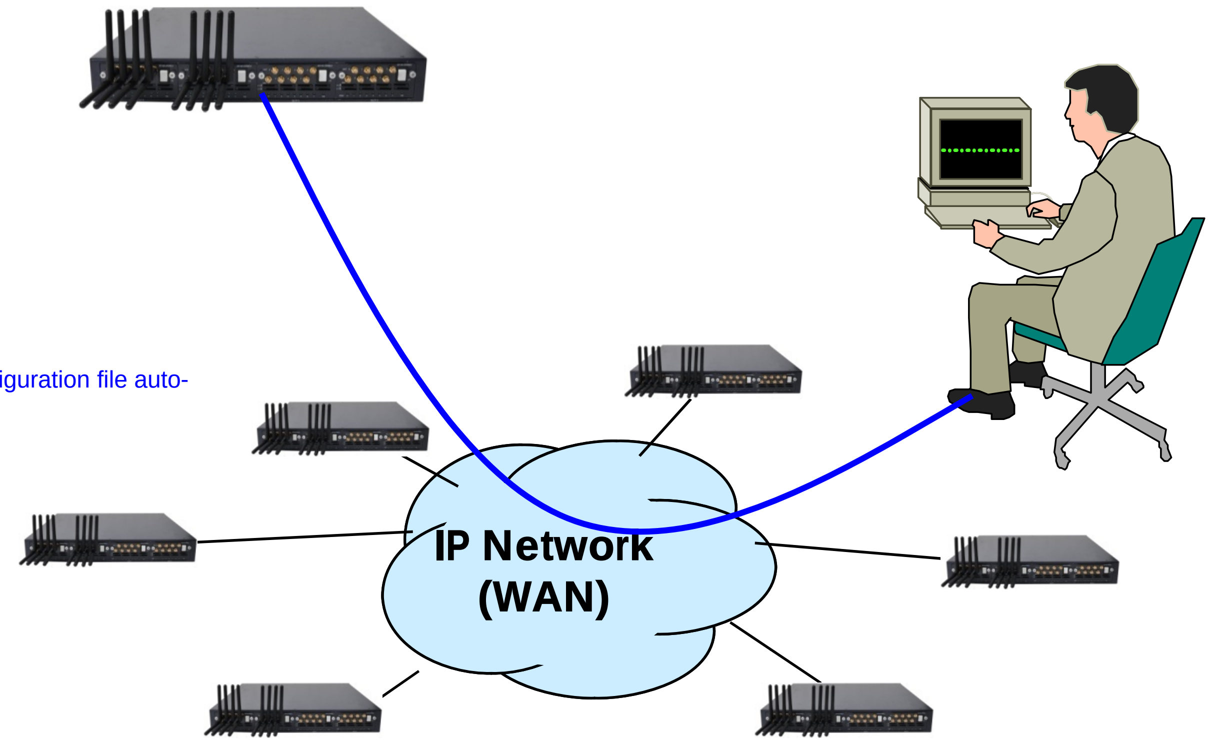


# Network Management

## AP-GV3200 Multi-Port GSM VoIP Gateway

- 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 Smart NMS Service
  - AddPac Smart Network Management System



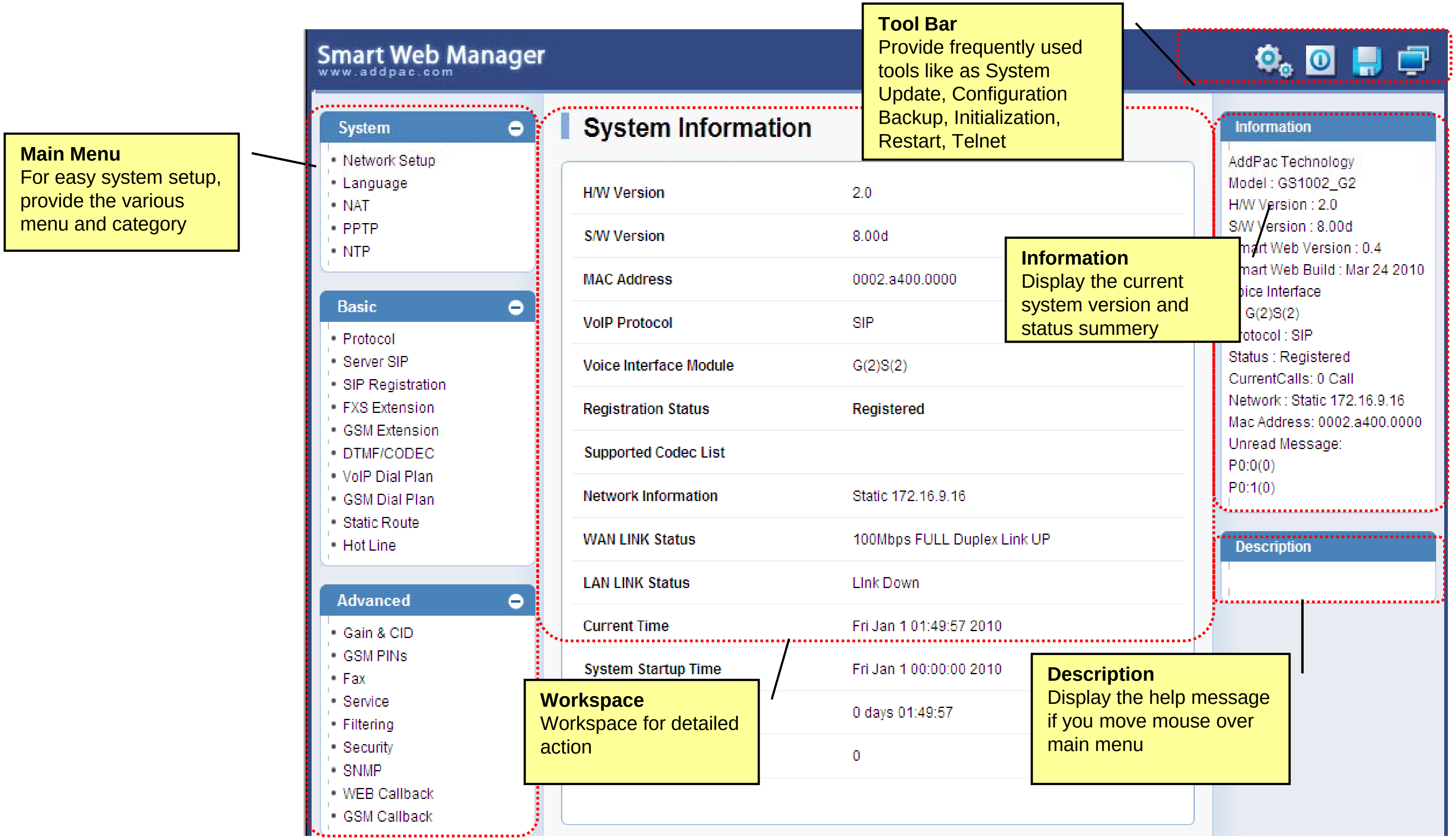
# Smart Web Manager

AP-GV3200 Multi-Port GSM VoIP Gateway

- System Configuration
  - Network Setup, Language, NAT, PPTP, NTP
- Basic Configuration
  - Protocol, SIP Server , FXS Extension, GSM Extension
  - DTMF/CODEC, VoIP Dial Plan, GSM Dial Plan, Static Routing, Hot Line
- Advanced Configuration
  - Gain/CID, GSM PINs, FAX, Service, Filtering, Security
  - GSM Web Callback, GSM Callback
- Miscellaneous Configuration
  - Call Status, System Status, Alarm Status, GSM Status
  - Call Log, System Log, Ping
- LCR(Least Cost Routing)
  - Black & White List, Time Interval, Tariff Group, LCR Test
- SMS
  - Inbox, SMS New Message

# Smart Web Manager : Main Page Layout

## AP-GV3200 Multi-Port GSM VoIP Gateway



# Smart Web Manager : System – Network Setup

## AP-GV3200 Multi-Port GSM VoIP Gateway

**Host Name**
Create a representative name for the site to be installed

**Static IP**
This is static IP mode. Specify the addressed IP from the service provider

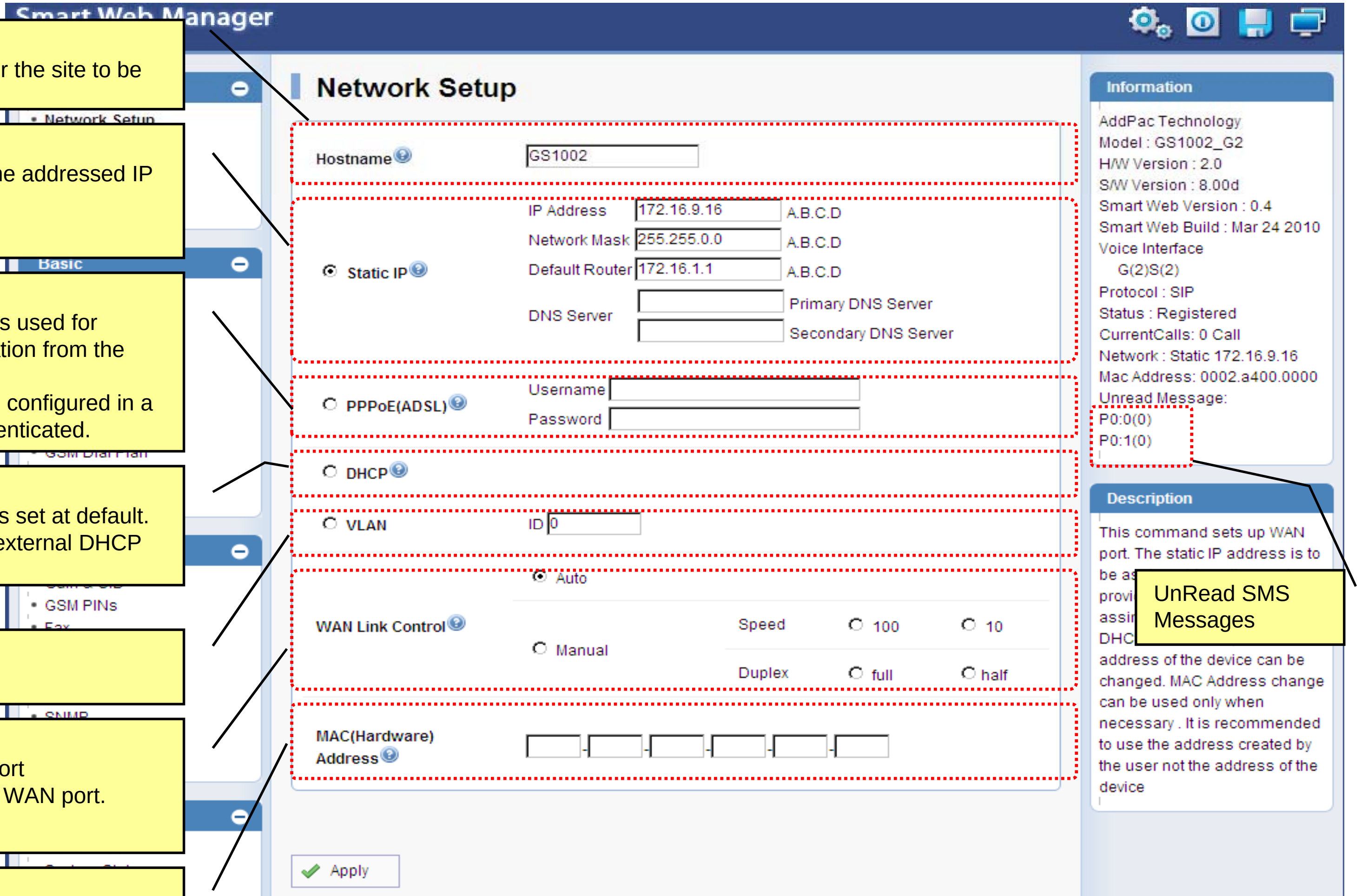
**PPPoE**
This is ADSL mode. This mode is used for addressing IP though authentication from the modem.
At this time, the modem must be configured in a way that the device can be authenticated.

**DHCP**
This is dynamic IP mode which is set at default. The IP can addressed from the external DHCP server.

**VLAN**
Configure VLAN mode and ID.

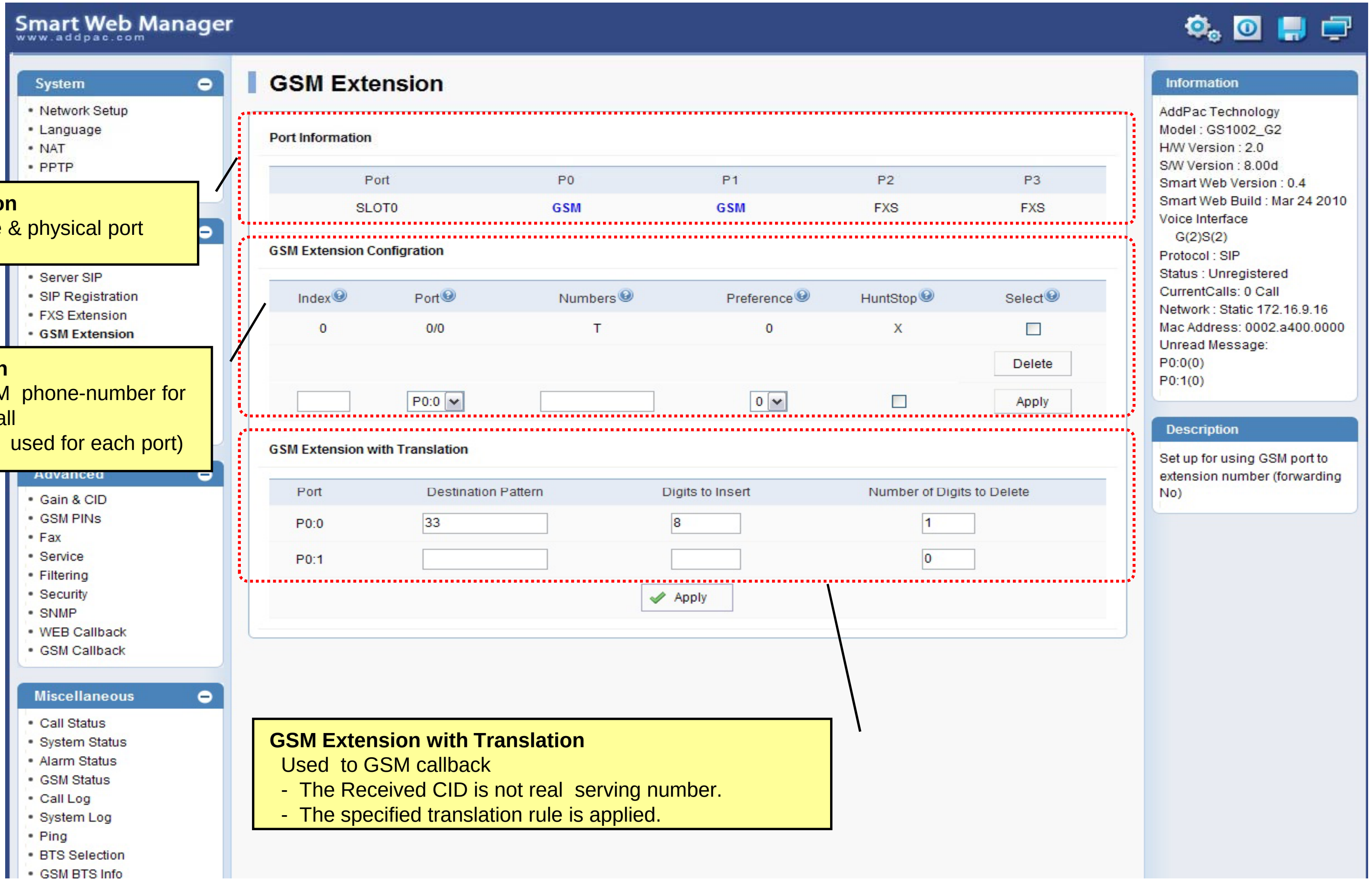
**WAN Link**
Controls and recognizes WAN port
Specify the connection speed of WAN port.
connection automatically.

**MAC**
Change MAC address of WAN interface. Without address entry, use the basic MAC Address.



# Smart Web Manager : Basic – GSM Extension

## AP-GV3200 Multi-Port GSM VoIP Gateway




**Port Information**
voice port type & physical port

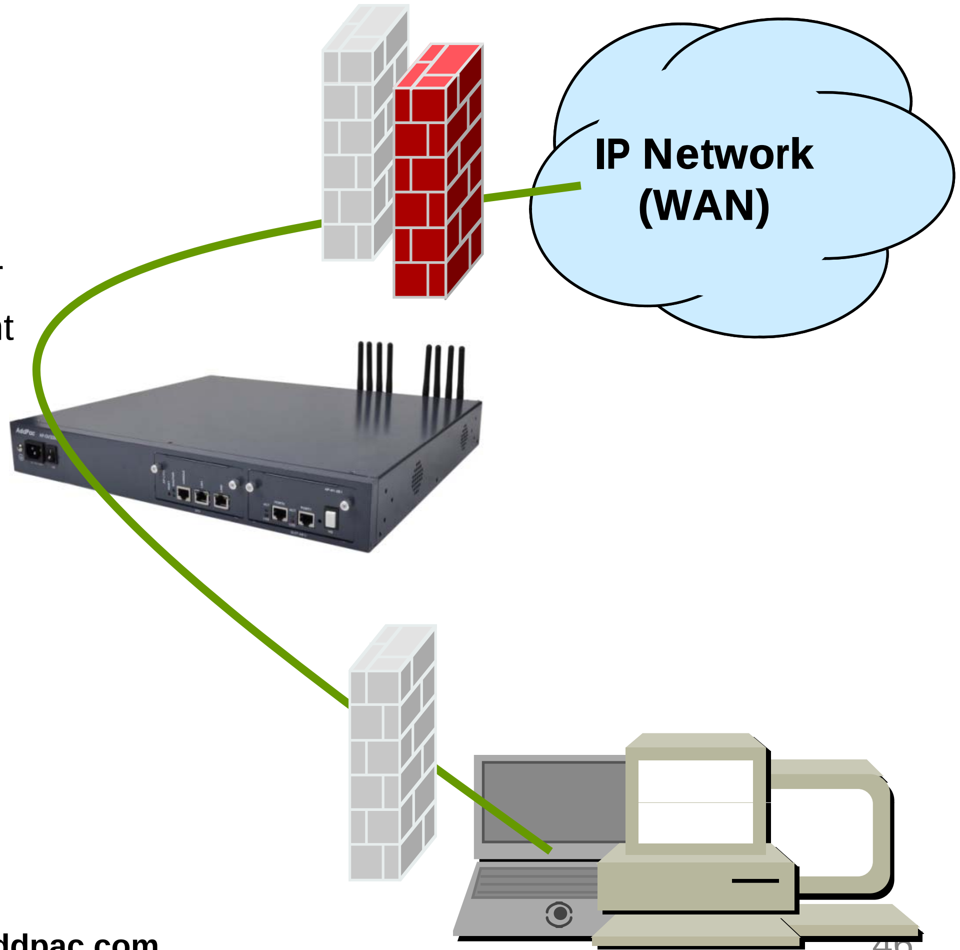
**GSM Extension**
Configure GSM phone-number for receiving a call
(usually 'T' is used for each port)

**GSM Extension with Translation**
Used to GSM callback
- The Received CID is not real serving number.
- The specified translation rule is applied.

# Security Management

## AP-GV3200 Multi-Port GSM VoIP Gateway

- 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 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



# AP-GS1001
# 1-Port GSM VoIP Gateway

# Contents

# Product Overview

## AP-GS1001 1-Port FXS GSM Gateway

- Analog Interface (FXS)/VoIP Interface(LAN) Both Support
- H.323/SIP/MGCP Triple Concurrent Stack Embedded
- High Performance RISC & Programmable DSP Architecture
- Two(2) 10/100Mbps Fast Ethernet (IP Share ,etc)
- High Performance LAN-to-LAN Routing Capability
- G.711/G.726/G.723/G.729, T.38 Fax , VAD, etc
- Powerful Network Protocols (PPPoE, DHCP, Static Routing, etc)
- Firmware Upgradeable Architecture
- VPMS (VoIP Plug&Play Management System) for Large Scale Deployment
- Advanced Voice QoS Mechanism
- Light and Compact Design with External Power Supply

# Hardware Specification

AP-GS1001 1-Port FXS GSM Gateway

RISC
CPU

High-end
DSP

- RISC Microprocessor Computing Power
- 1-Port GSM Gateway
- 1-Port SIM Card Slot
- 1-Port GSM Antenna Interface
- VoIP Gateway Interface
  - AP-GS1001 Model A: Basic Configuration
  - AP-GS1001 Model B: One(1) FXS Port
- Network Interface for VoIP Direct Interface
  -Two(2) 10/100Mbps Fast Ethernet (RJ45)
- Run LED, LAN LED, Port LEDs
- External Power Supply

# Hardware Specification

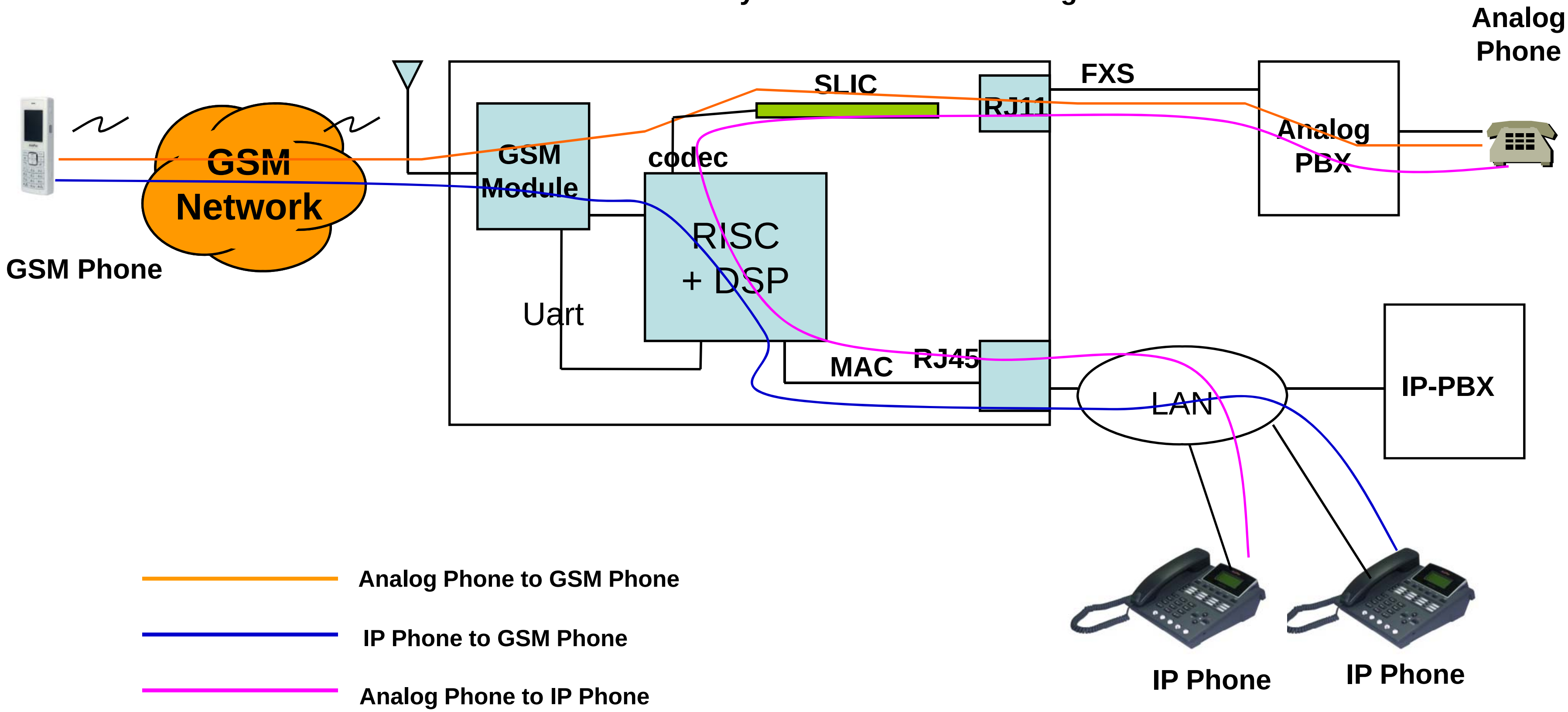
AP-GS1001 1-Port FXS GSM Gateway

RISC CPU

High-end DSP

## GSM Gateway Service Diagram

AP-GS1001 GSM Gateway Internal H/W Block Diagram




AddPac

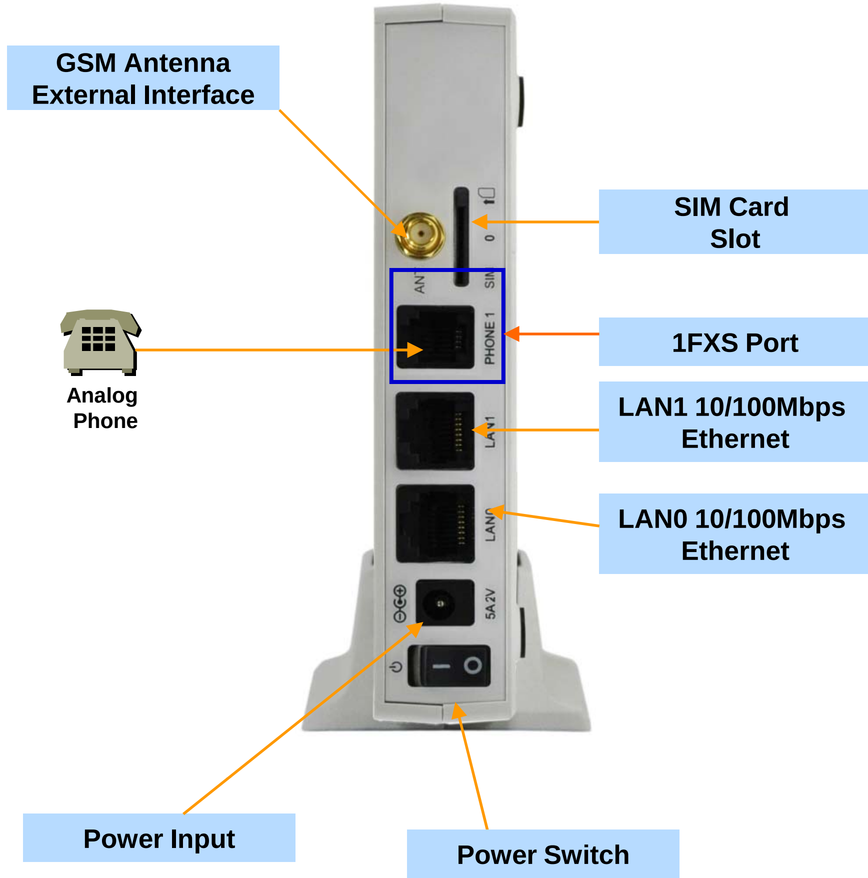
# Hardware Specification

## AP-GS1001 1-Port FXS GSM Gateway

### Hardware Specifications

| AP-GS1001 GSM Gateway | Basic Specifications |
|---|---|
| Voice Interface | No FXS Port : Model A |
| | One(1)-Port FXS Analog Interface : Model B |
| GSM Antenna Interface | External GSM Antenna |
| SIM Card Slot Interface | GSM SIM Card Slot |
| Ethernet Interface | 2-Ports 10/100Mbps Ethernet Interface(RJ-45) |
| Flash Memory | 4Mbyte High-speed Flash Memory |
| Base Memory | 32 Mbyte High-speed SDRAM |
| Power Requirement | Power Supply Adaptor / VAC 110~220V, 50/60Hz, 5V, 2A |
| Operating Temperature | 0ºC ~ 45ºC (32 ºF ~ 122ºF) |
| Storage Temperature | -40ºC ~ 85ºC (-40ºC ~ 185ºF) |
| Relative Humidity | 5% ~ 95% (Non-condensing) |
| Dimension | 142mm x 142mm x 28mm (W x D x H) |
| Weight (Kg) | 0.42Kg |

### Network interface Configurations



# GSM Module Specification

AP-GS1001 1-Port FXS GSM Gateway

- Bearers : GSM + GPRS class 10
- Quad-Band EGSM 850/900/1800/1900MHz
- Normal Sensitivity

  - 850MHz Rx -104 dBm
  - 900MHz Rx -104 dBm
  - 1800MHz Rx -102 dBm
  - 1900MHz Rx -102 dBm
- Tx Performances

  - 850MHz Tx +33 dBm
  - 900MHz Tx +33 dBm
  - 1800MHz Tx +30 dBm
  - 1900MHz Tx +30 dBm
- Power Consumption

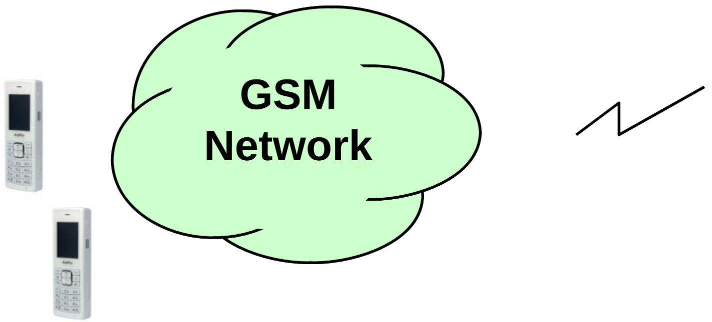
  - 17 uA Sleep Mode, 1.7mA Idle Mode, 400mA GPRS class10 (33 dBm)
- Codec

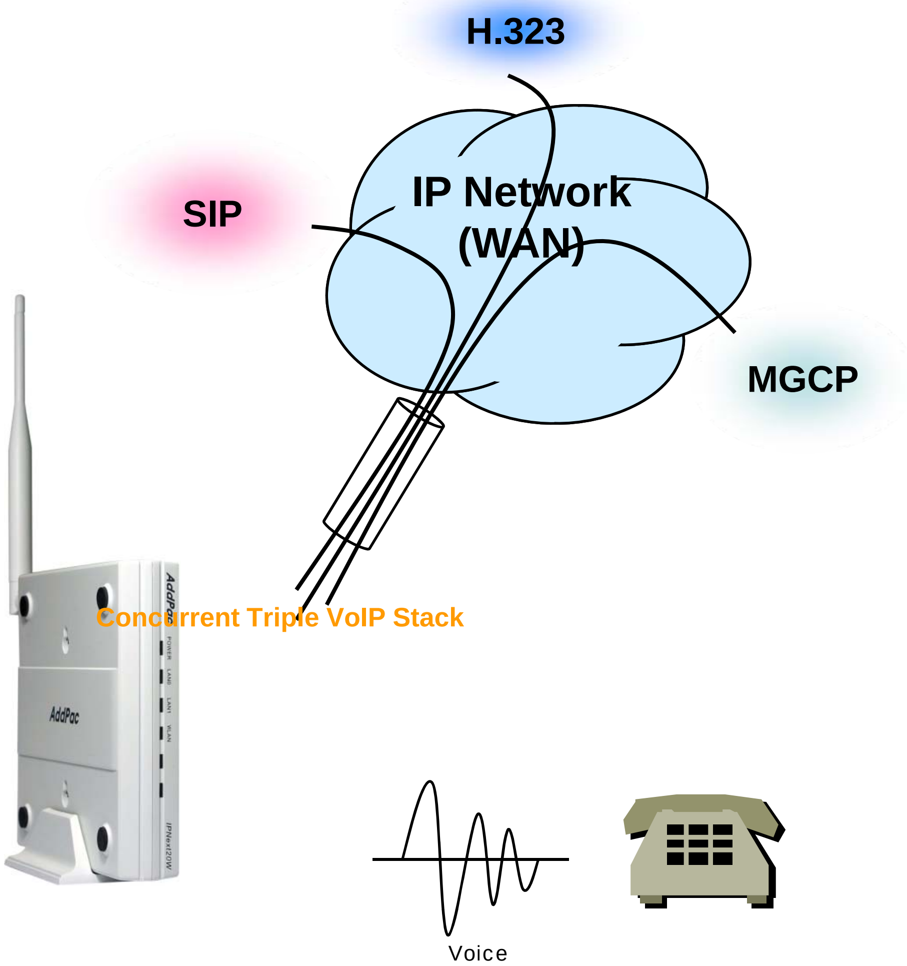
  - FR-EFR-HR-AMR

# VoIP (Voice over IP) Service

## AP-GS1001 1-Port FXS GSM Gateway

- **H.323, SIP, and MGCP Triple 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**
- **MGCP**
  - **IETF RFC2705bis-02 Standard MGCP 1.0**



# VoIP (Voice over IP) Service

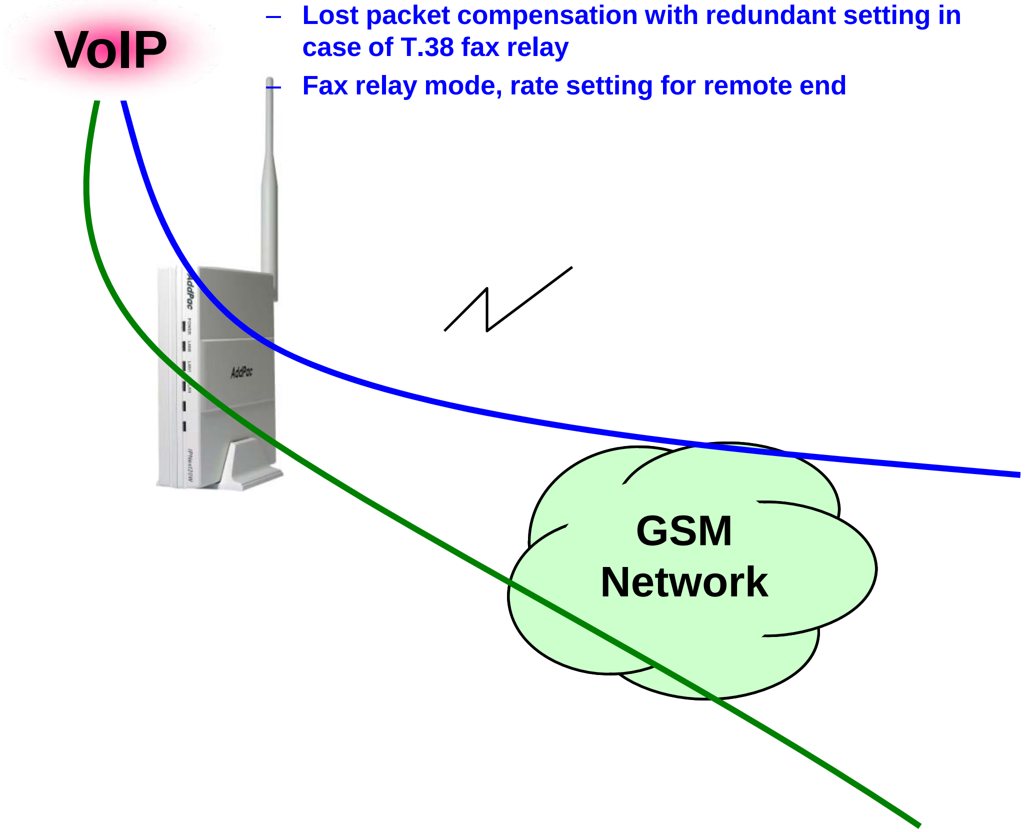
## AP-GS1001 1-Port FXS GSM Gateway

- **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

# VoIP (Voice over IP) Service

## AP-GS1001 1-Port FXS GSM Gateway

- **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

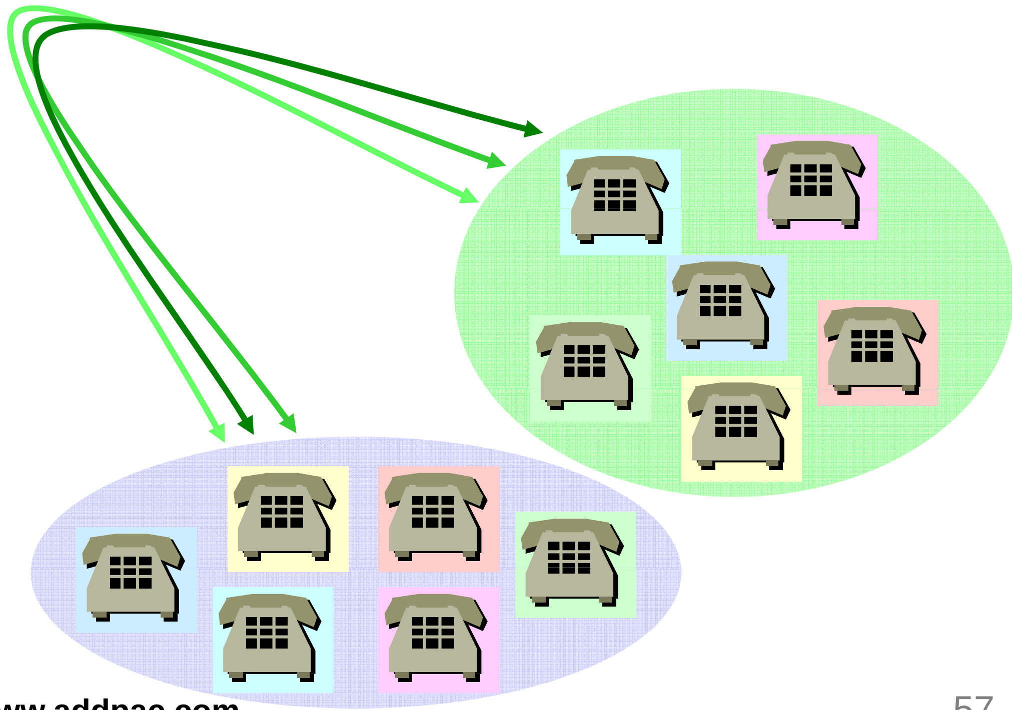


# VoIP (Voice over IP) Service

## AP-GS1001 1-Port FXS GSM Gateway

- **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

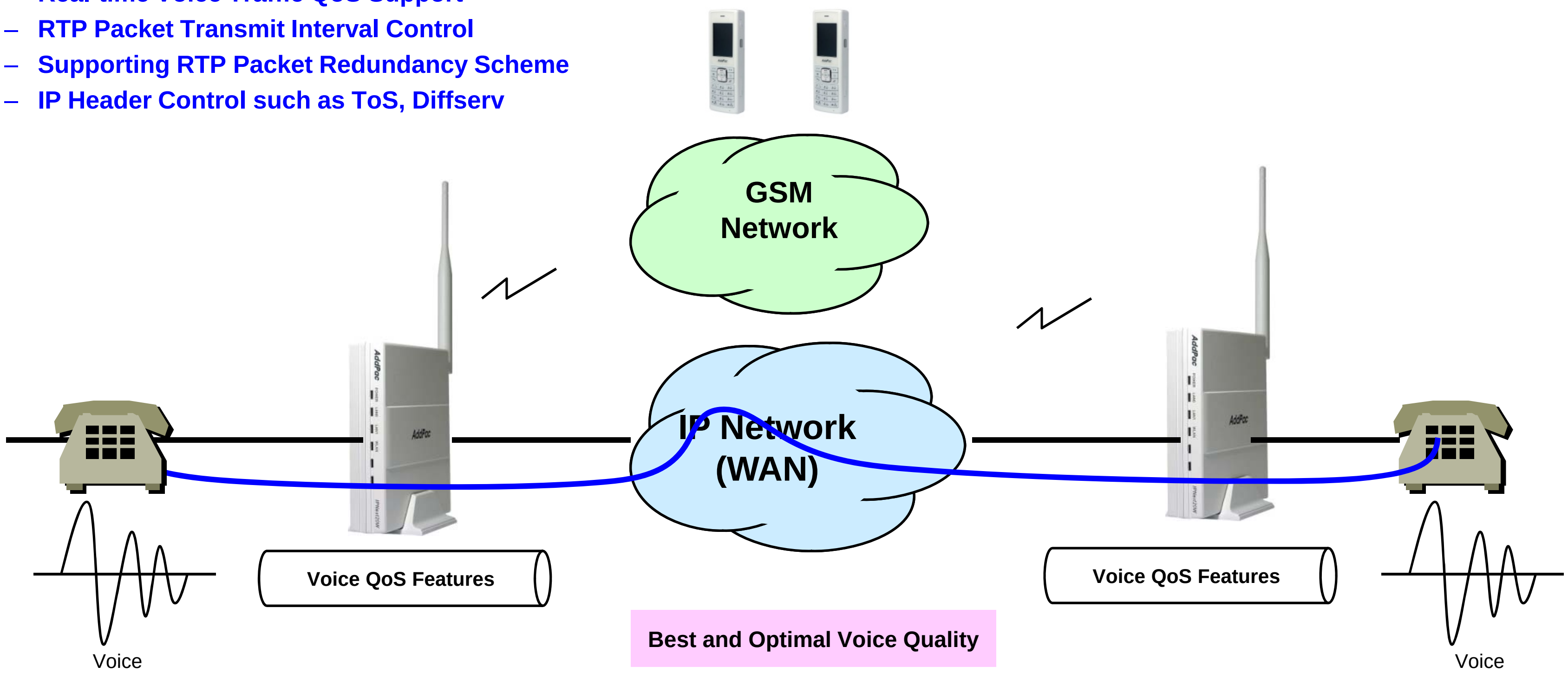
- **VoIP Call Controls (cont.)**
  - Call transfer for internal calls
  - Call pickup for internal calls
  - Calling and called number conversion for VoIP outbound calls
  - Calling and called number conversion for VoIP inbound calls
  - Fax broadcasting call control



# Advanced QoS Features

## AP-GS1001 1-Port FXS GSM Gateway

- **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-GS1001 1-Port FXS GSM Gateway

### Basic Network Protocols

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

### Routing Protocol

- IPv4 : Static

### Service Protocol

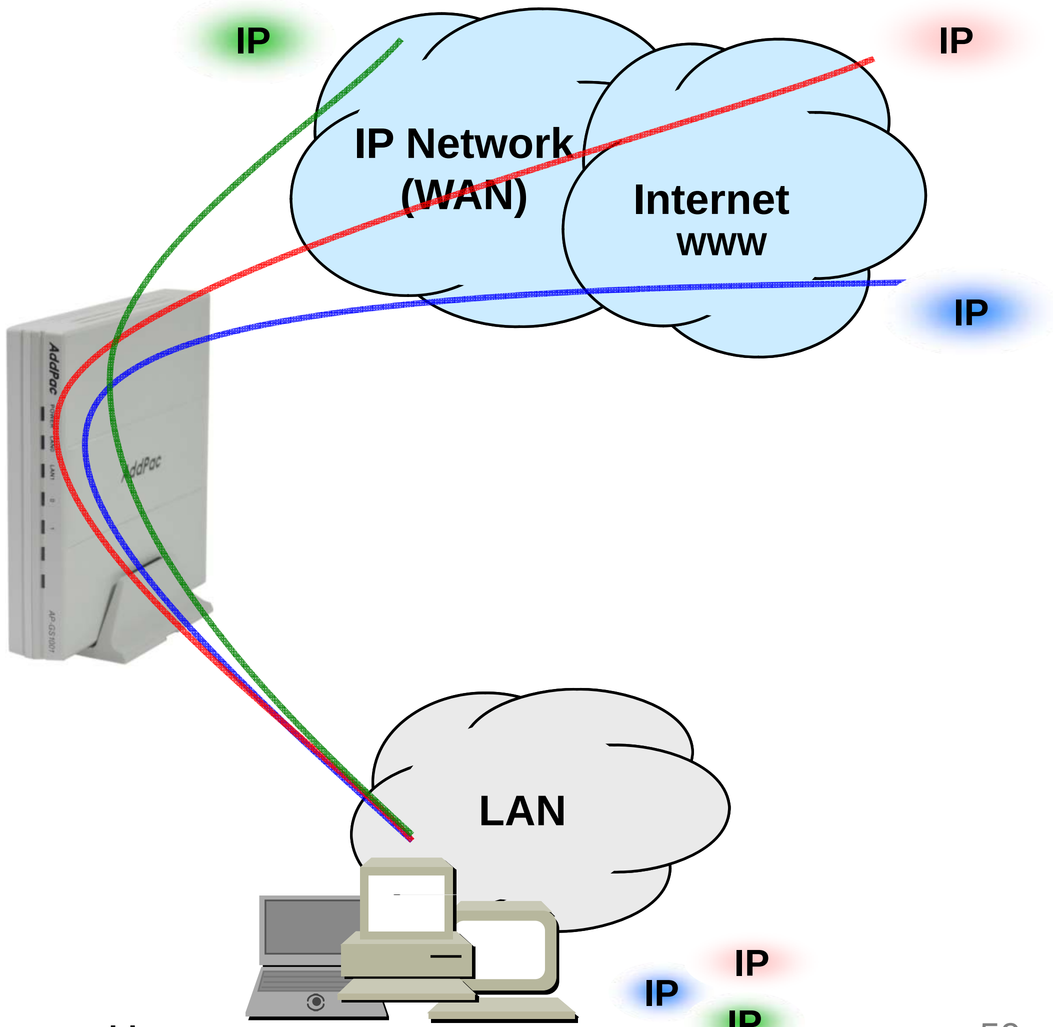
- FTP, Telnet, TFTP, DHCP Server/Relay, SNMP Server
- CDP (Cisco Discovery Protocol)
- DNS Resolver , DDNS(nsupdate)
- Bridge
- Syslog

### 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

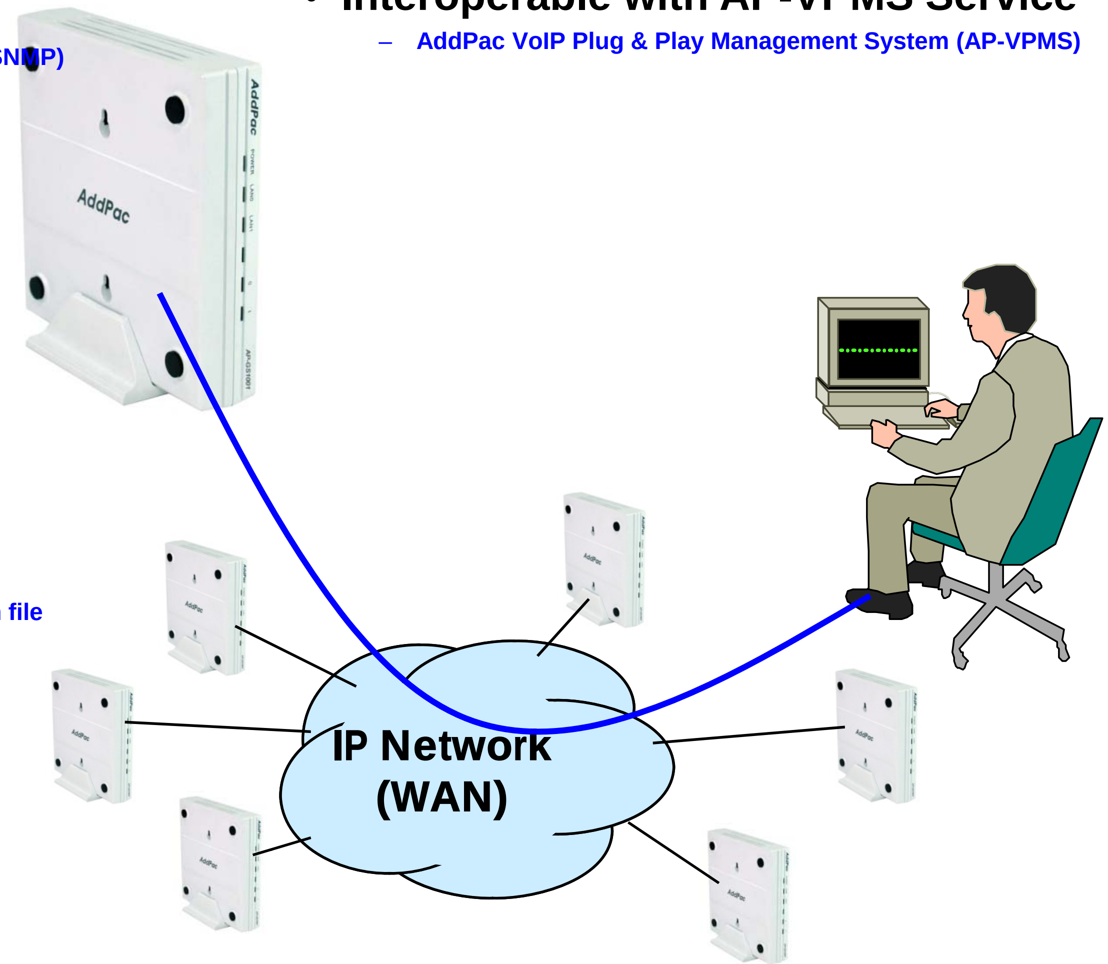


# Network Management

## AP-GS1001 1-Port FXS GSM Gateway

- **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)

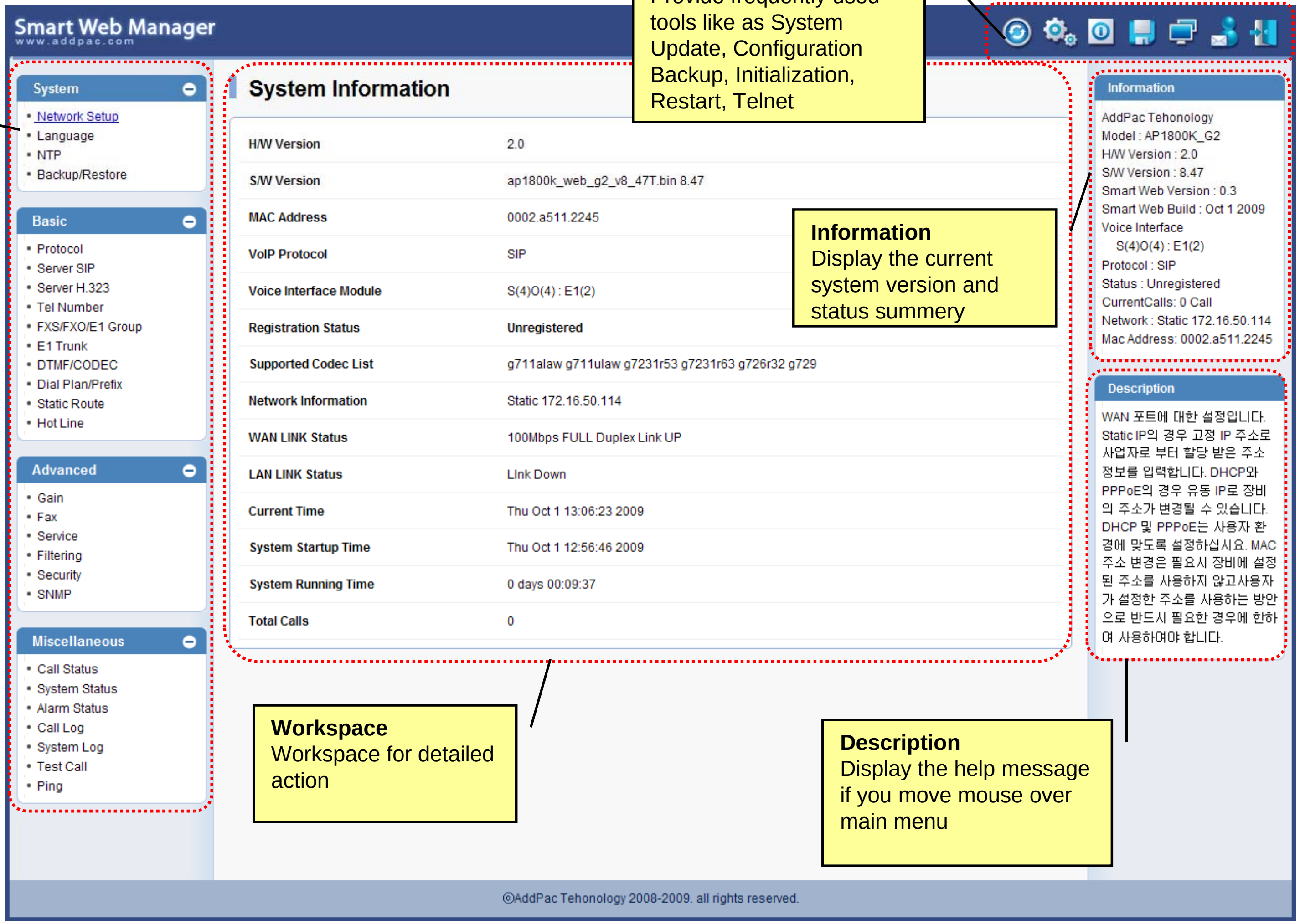


# Smart Web Manager : Main Page Layout

## AP-GS1001 1-Port FXS GSM Gateway

**Main Menu**
For easy system setup, provide the various menu and category

**Tool Bar**
Provide frequently used tools like as System Update, Configuration Backup, Initialization, Restart, Telnet




**Information**
Display the current system version and status summery

**Workspace**
Workspace for detailed action

**Description**
Display the help message if you move mouse over main menu

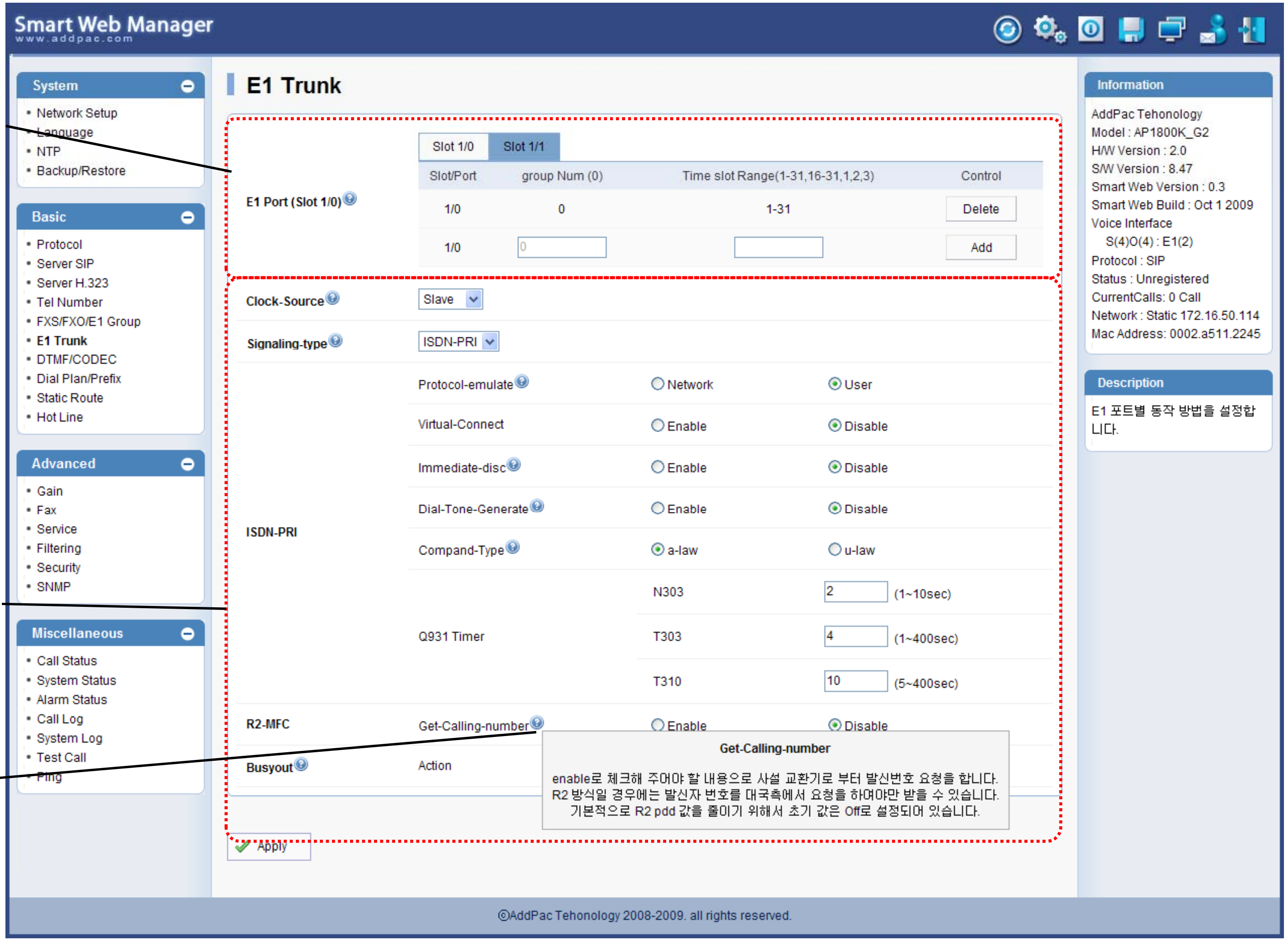
# Smart Web Manager : E1 Trunk Configuration (Example)

## AP-GS1001 1-Port FXS GSM Gateway

**E1 Port**
E1 Port Configuration Example : Slot is selected by tap button. Group in each E1 port can be added or deleted.

**E1 Port Configuration**
Provide the detailed configuration menu about selected E1 port

**Tool Tip**
Display the help message according to mouse move



# Smart Web Manager : Call Status (Example)

## AP-GS1001 1-Port FXS GSM Gateway

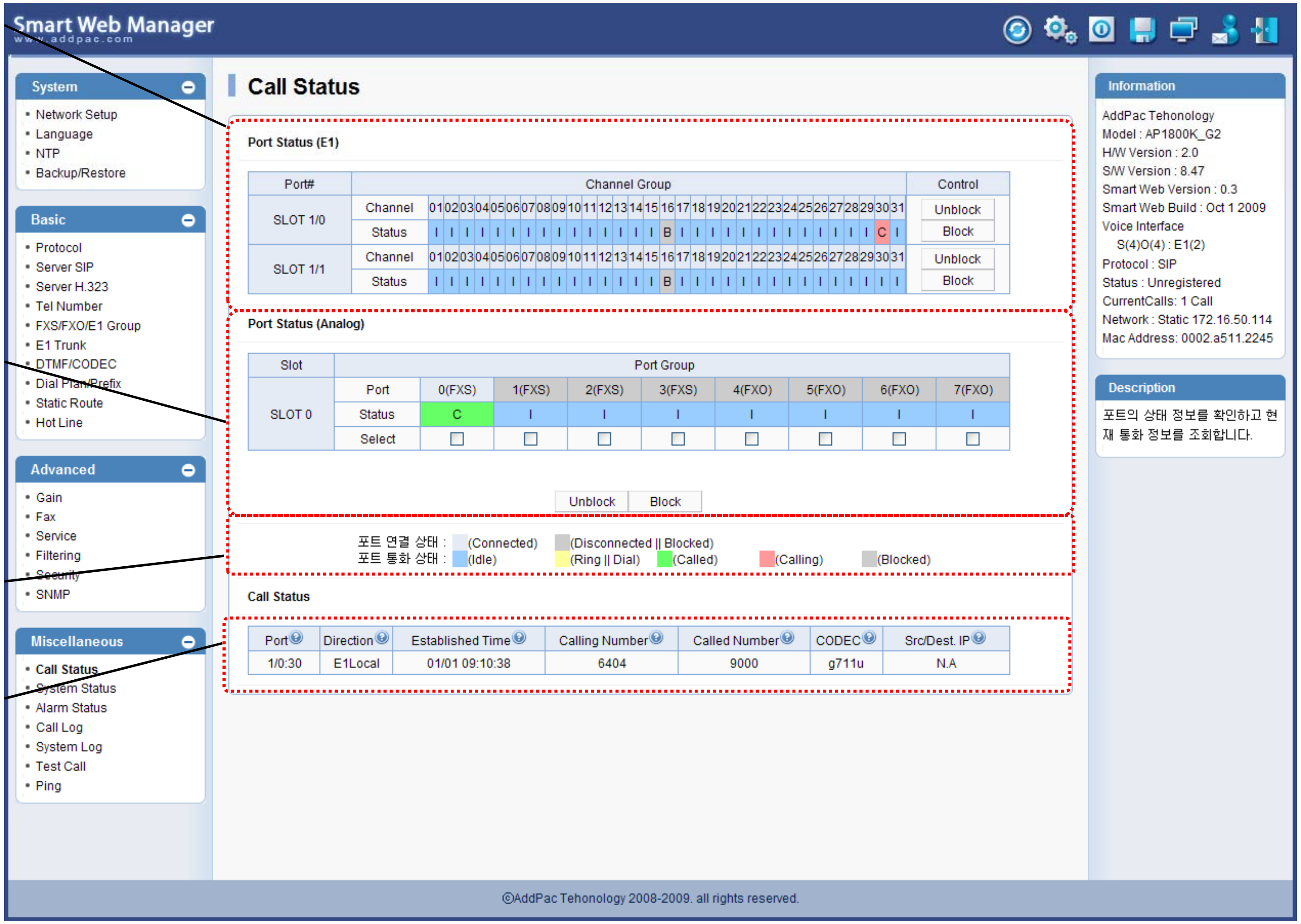
**E1 Port**

Real-time display about digital E1 time slot status (idle, dialing, incoming call, outgoing call, call blocking, etc)
Provide a specific port blocking function

**Analog Port**
Real-time display about analog port status (occupation, call status).
Provide a specific port blocking function

**Port Status Display**

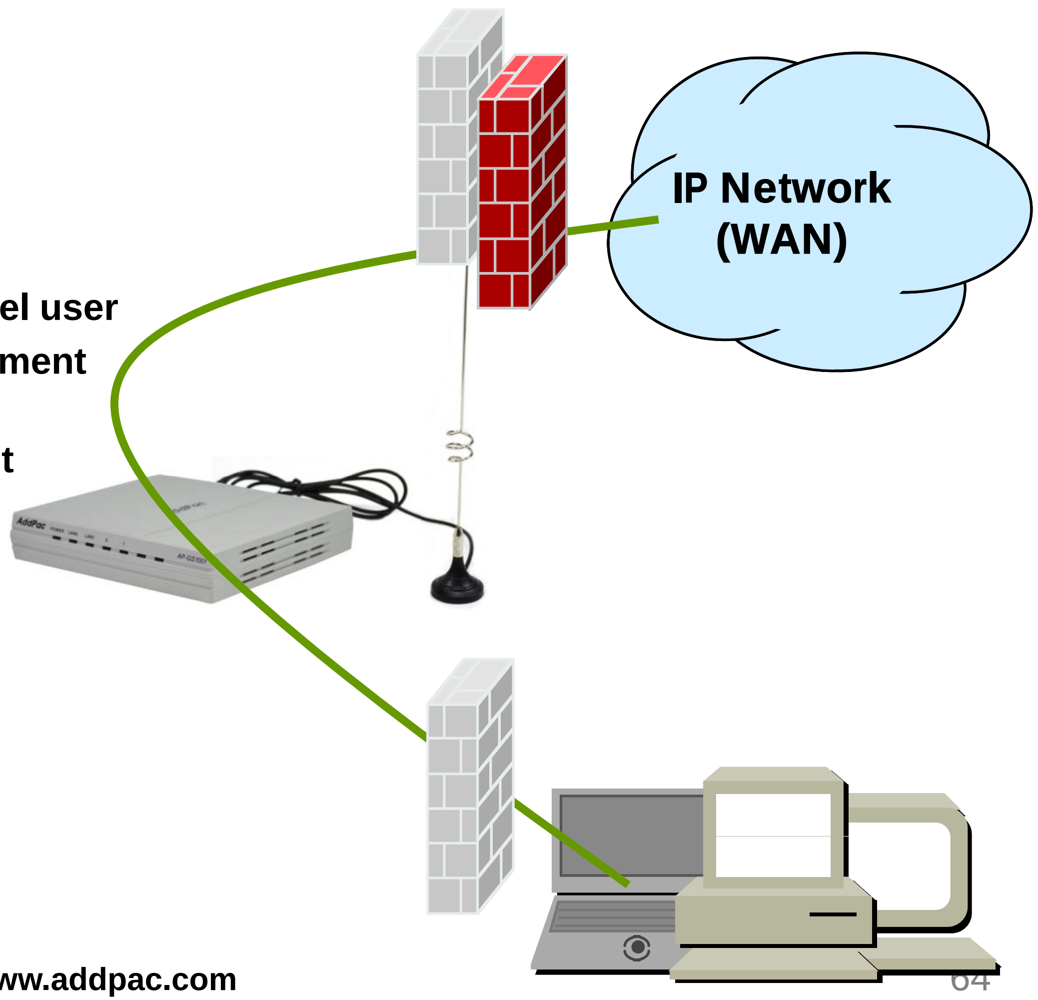
**Active Call Status**
Real-time display about current active call status (calling party addr, called party addr. Codec, etc)



# Security Management

## AP-GS1001 1-Port FXS GSM Gateway

- 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 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



# Thank you!

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