

# Security Protocol Overview for AddPac IoT Solution

***AddPac***

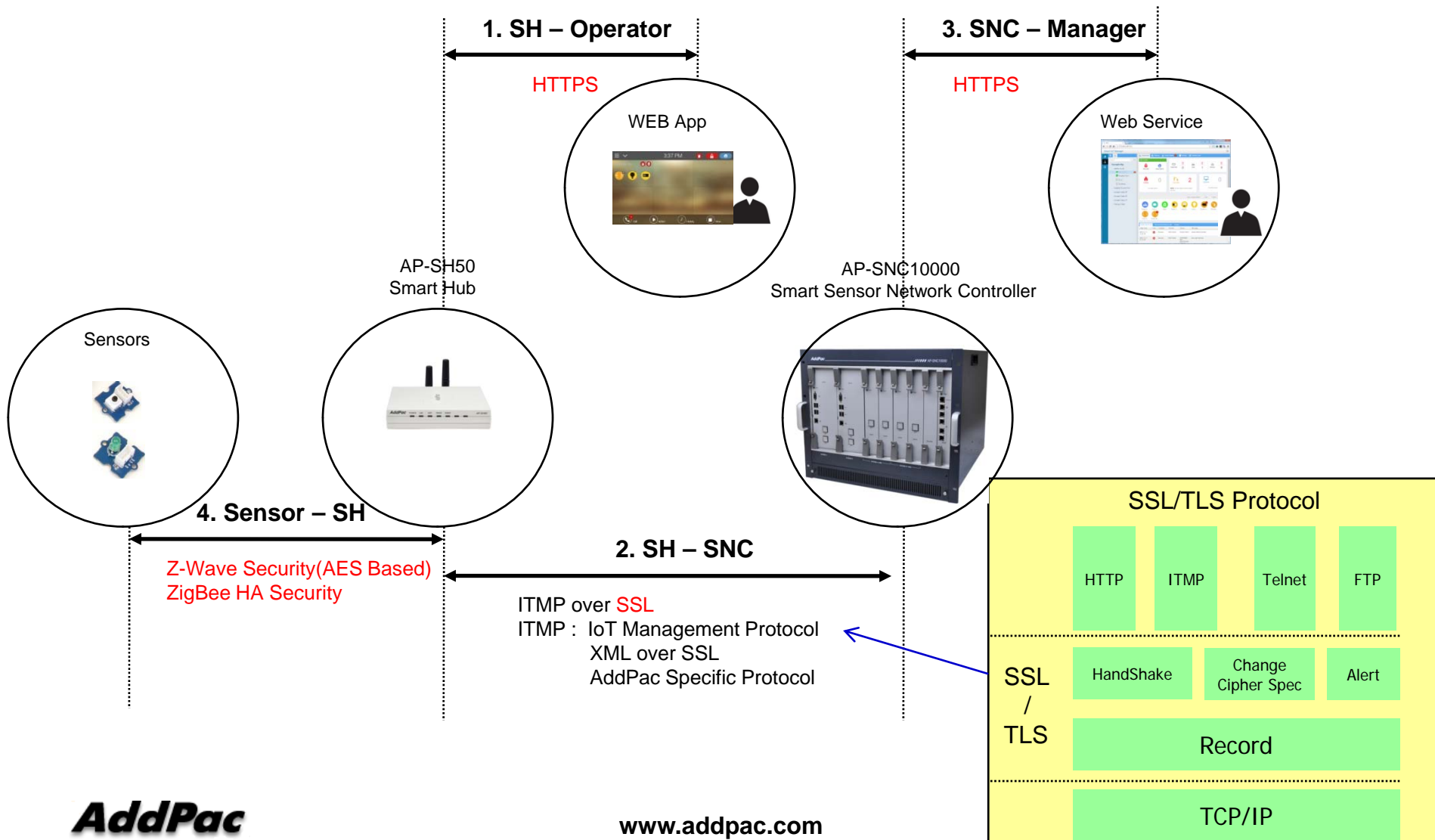
**AddPac Technology**

2016, Sales and Marketing

# Contents

- Security Protocol Network Diagram for AddPac IoT Solution
  - 1. Between Smart Hub and Web App.
  - 2. Between Smart Hub and Smart Sensor Network Controller
  - 3. Between Smart Sensor Network Controller and Web manager
  - 4. Between Zwave Sensor and Smart Hub
- SSL/TLS Secure Protocol Overview
- AddPac Smart IoT Solution Overview

# AddPac IoT - Security Protocol Network Diagram





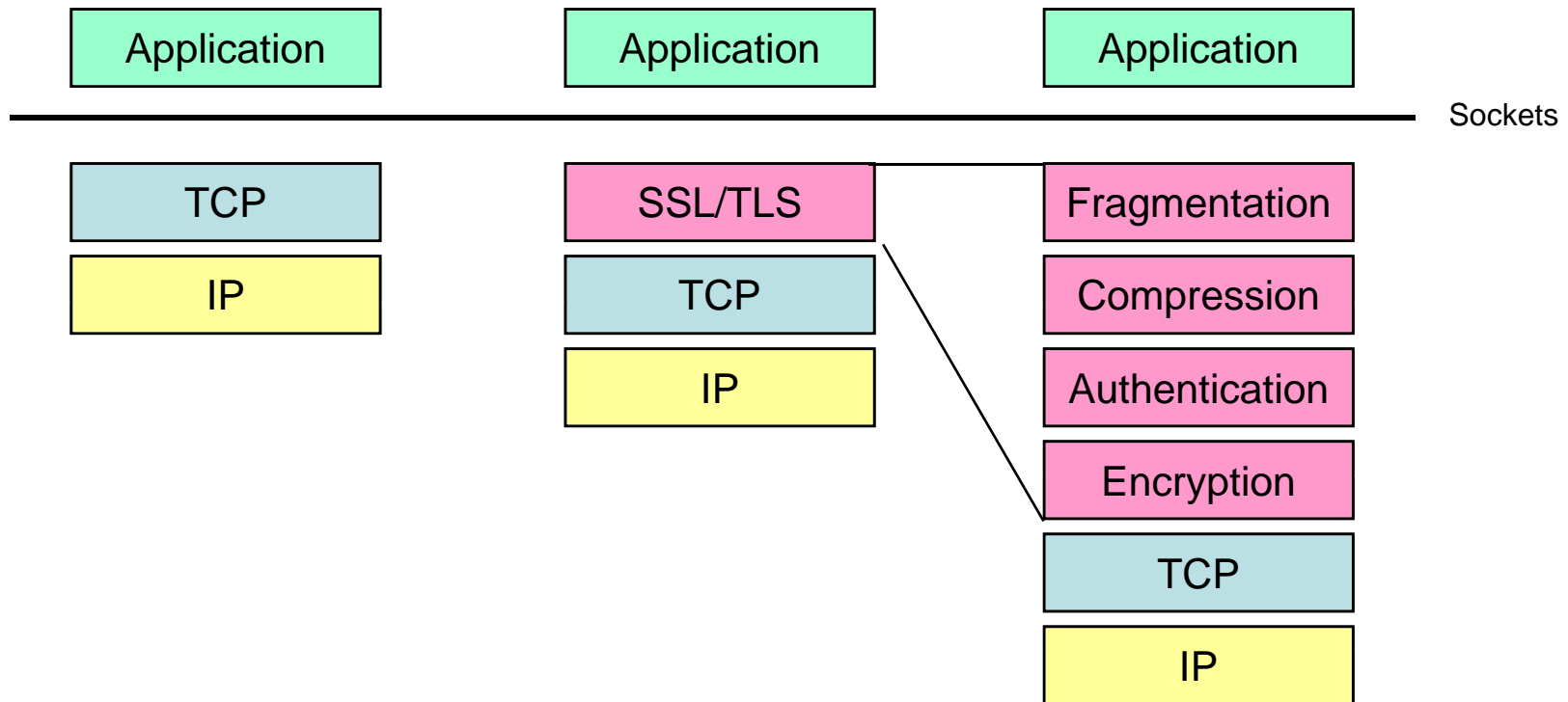
# SSL/TLS

## Secure Protocol Features

# TLS Features for Secure VoIP Service

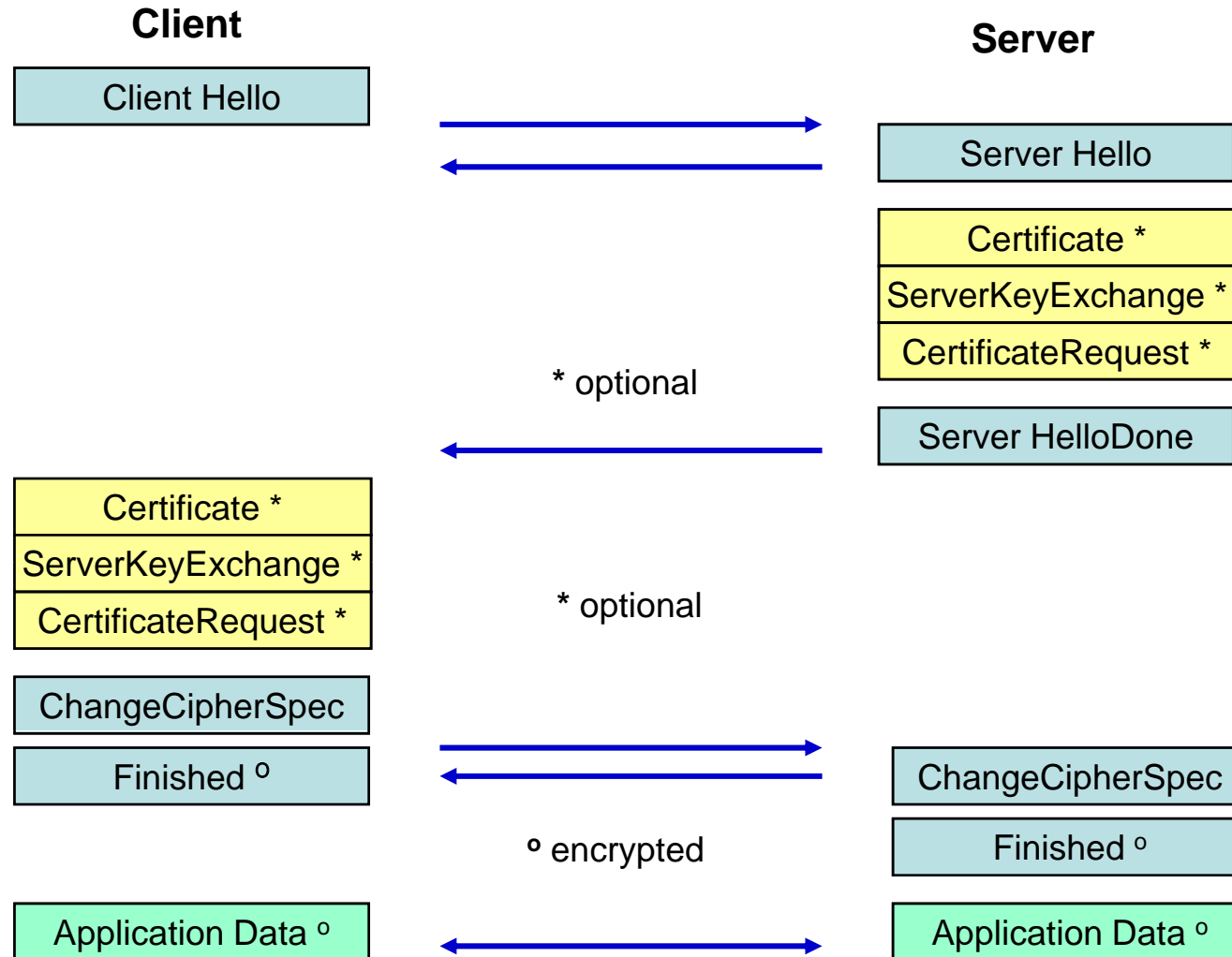
- Support for TLS 1.1, TLS 1.0 and SSL 3.0 protocols
- Since SSL 2.0 is insecure it is not supported.
- TLS 1.2 is supported but disabled by default.
- Support for TLS extensions: server name indication, max record size, opaque PRF input, etc.
- Support for authentication using the SRP protocol.
- Support for authentication using both **X.509 certificates** and OpenPGP keys.
- Support for TLS Pre-Shared-Keys (PSK) extension.
- Support for Inner Application (TLS/IA) extension.
- Support for X.509 and OpenPGP certificate handling.
- Support for X.509 Proxy Certificates (RFC 3820).
- Supports all the strong encryption algorithms (including SHA-256/384/512), including Camellia (RFC 4132).
- Supports compression (optional).
- CRLs
  - CRL (Certificate Revocation List)
  - OCSP (Online Certificate Status Protocol, RFC2560) (via HTTP)
- Hash Algorithm : SHA-1, MD5

# SSL/TLS Protocol Layers



# SSL/TLS Handshake

AP1950S Secure VoIP Gateway



# TLS Comparison with OpenSSL

- Protocol Support

	SSLv2.0	SSLv3.0	TLSv1.0	TLSv1.1	TLSv1.2
AddPac	No	Yes	Yes	Yes	Yes
OpenSSL	Yes	Yes	Yes	No	No

- Key Exchange Algorithms

	Anon-RSA	RSA	RSA Export	DHE-RSA	DHE-DSS	SRP-DSS	SRP-RSA	SRP	PSK	ECC
AddPac	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
OpenSSL	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Yes

- Encryption Algorithms

(\*1) 40-bit encryption is insecure






	AES-256-CBC	AES-128-CBC	3DES-CBC	DES-CBC	RC4-128-CBC	RC4-40(*1)	RC2-40(*1)	Camellia	SEED	ARIA
AddPac	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
OpenSSL	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No





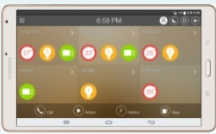



# AddPac IoT Equipment




# Smart IoT Equipment Table


Smart Enterprise Products	Description	Model
	Smart Hub for ZigBee/ZWave Sensors	AP-SH50, AP-SH50ZW, AP-SH70, AP-SHD100
	Smart Hub Cloud for ZWave Sensors	AP-SH20, AP-SH20W
	Enterprise Smart Hub	AP-SH1000
	Site based Smart Sensor Network Controller	AP-SNC2000
	Center based Multi-Site Smart Sensor Network Controller	AP-SNC10000

# Smart IoT Equipment Table

Smart Enterprise Products	Description	Model
	Smart Hub + Wall PAD	AP-SHC300
	Sensor Control Wall PAD	AP-SWP100
	Smart Phone and Tab/Pad Appl.	AP-ASH100, AP-ISH100
	Enterprise IoT Manager Appl.	AP-ASM1000

# Sensor Network Controller Comparison Table

Sensor Network Controller	AP-SNC10000	AP-SNC3000	AP-SNC2000
Specification			
Capacity Level	Large Scale	Medium Scale	Small & Medium
Processor	Intel	RISC	RISC
Operating System	Linux	Embedded Linux	Embedded Linux
System Duplication for Fault Tolerant	Support	Support	Support
Power Duplication (module type)	Support	Support	N/A



# Large-Scale Smart Sensor Network Controller AP-SNC10000

# Product Overview

## AP-SNC10000 Smart Sensor Network Controller

- Large-Scale Sensor Network Control Service
- Support Large-Scale Smart Hub Devices for Zigbee/Zwave sensors
- One(1) System Dual Sensor Network Controller Architecture  
One(1) Gigabit Ethernet Interface, Two(2) Hard Disk / a CPU Board  
Default : Single Smart Sensor Network Controller  
Option A : Dual Smart Sensor Network Controller  
Option B : One(1) Smart Sensor Network Controller  
+ One(1) Smart Sensor Network Manager
- Fault Tolerant and Scalability Architecture
- Powerful Management and User Friendly Features
- Firmware Upgradeable Architecture
- Linux Operation System
- Dual Redundancy Power Module

# Hardware Specification

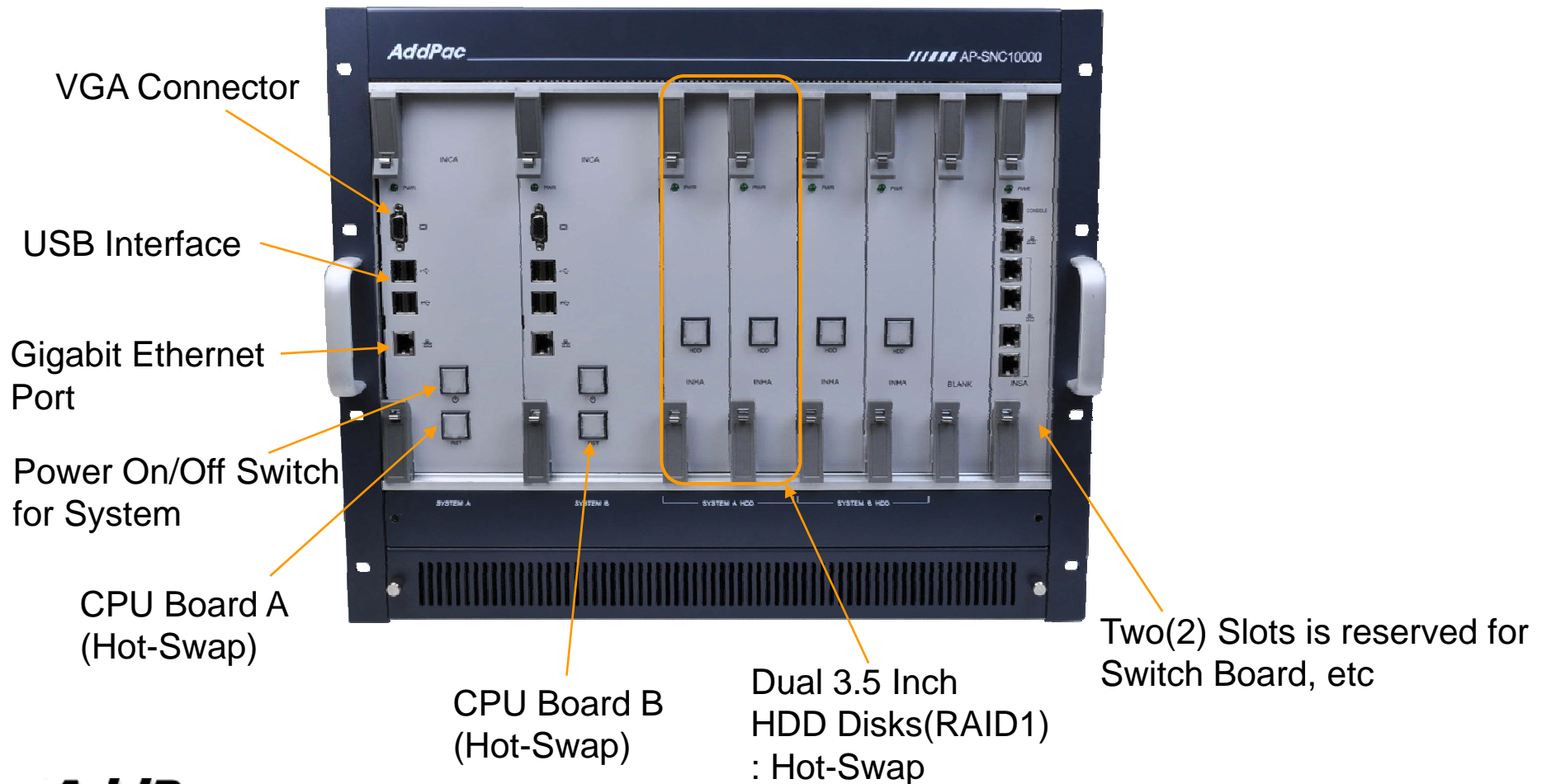
## AP-SNC10000 Smart Sensor Network Controller

- High-End Computing Power
- Main Chassis
  - Dual Redundancy CPU Boards for System Fault Tolerant
    - One(1) 10/100/1000Mbps Gigabit Ethernet
    - Four(4) USB Interface Port
    - VGA Interface Port for External Video Monitor
    - Two(2) 3.5 Inch Hard Disk Interface Slot (RAID 1)
  - Dual Redundancy Power Supply Module
  - Hot-Swap Features
  - Right most two(2) slots is reserved for Switch Board,, etc

# Hardware Specification

AP-SNC10000 Smart Sensor Network Controller

## AP-SNC10000 Front Side





# Hardware Specification

AP-SNC10000 Smart Sensor Network Controller

## AP-SNC10000 Back Side



FANs for Air Cooling

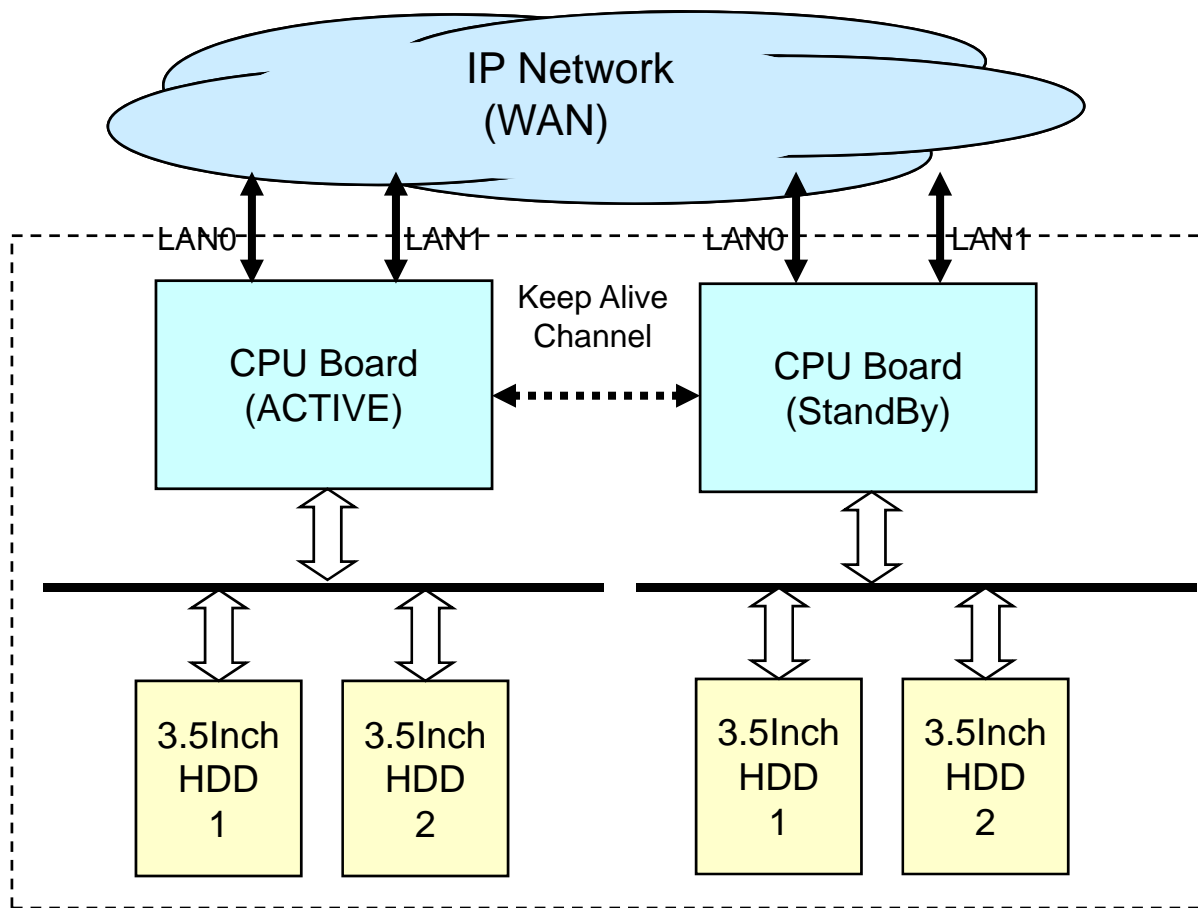
Dual Power Supply  
for System A

Dual Power Supply  
for System B

# System Redundancy Features

AP-SNC10000 Smart Sensor Network Controller

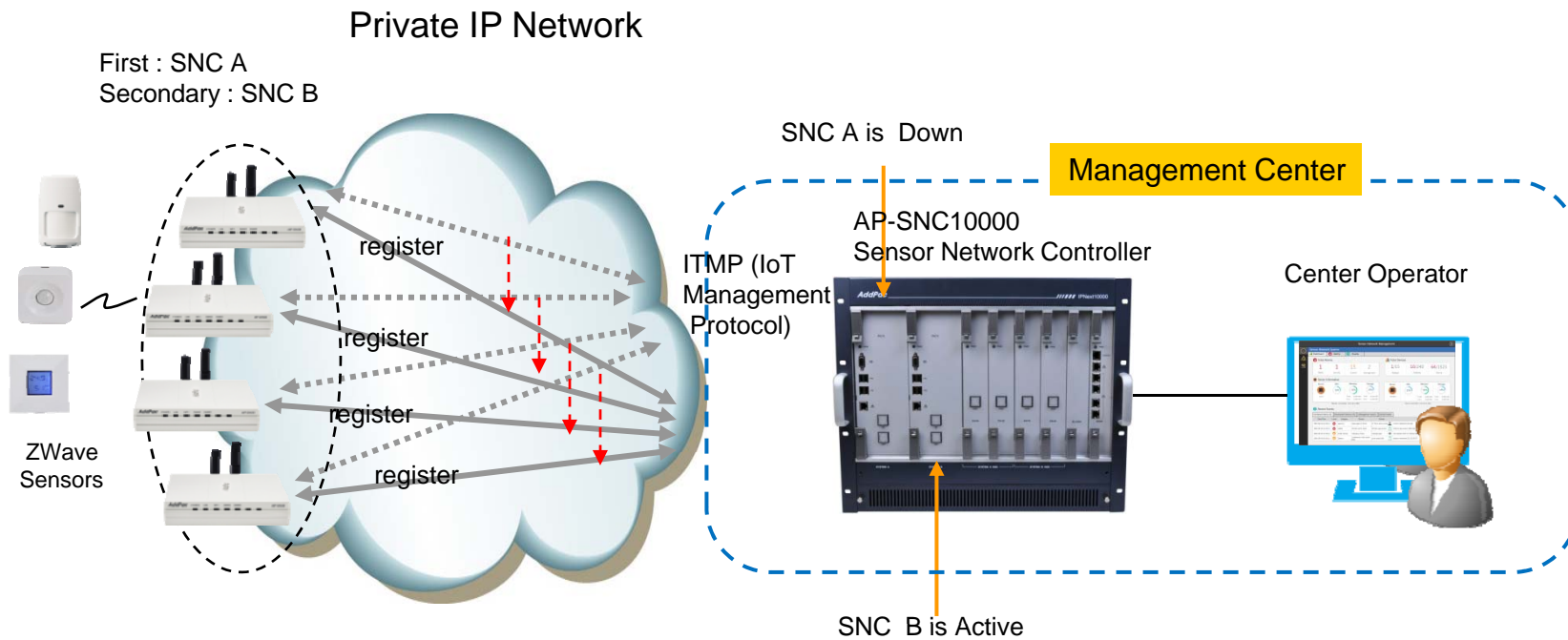
### AP-SNC3000 System Block Diagram



# System Redundancy Features

AP-SNC10000 Smart Sensor Network Controller

- Active– Active Duplication Scheme
- Active – Standby Duplication Scheme
- VRRP based Duplication Scheme



Active – Standby Duplication Scheme (example)



# Smart Sensor Network Controller AP-SNC3000

# Product Overview

## AP-SNC3000 Smart Sensor Network Controller

- Embedded H/W Platform with Dual CPU Module Slots
- Fault Tolerant and Reliability Service
- Support Multiple Smart Hub for Zigbee/Zwave sensors
- Support RTSP based Network Video Encoder (Video Codec, IP Camera, etc) Control
- Support RTP based Video Door Phone Control
- Mini Call Manager Function Support for Smart Phone, Tab/PAD registration
- Load Balance using RTSP Redirect Service
- Web based Smart Sensor Network Control Management Software

# Benefits and Features

## AP-SNC3000 Smart Sensor Network Controller

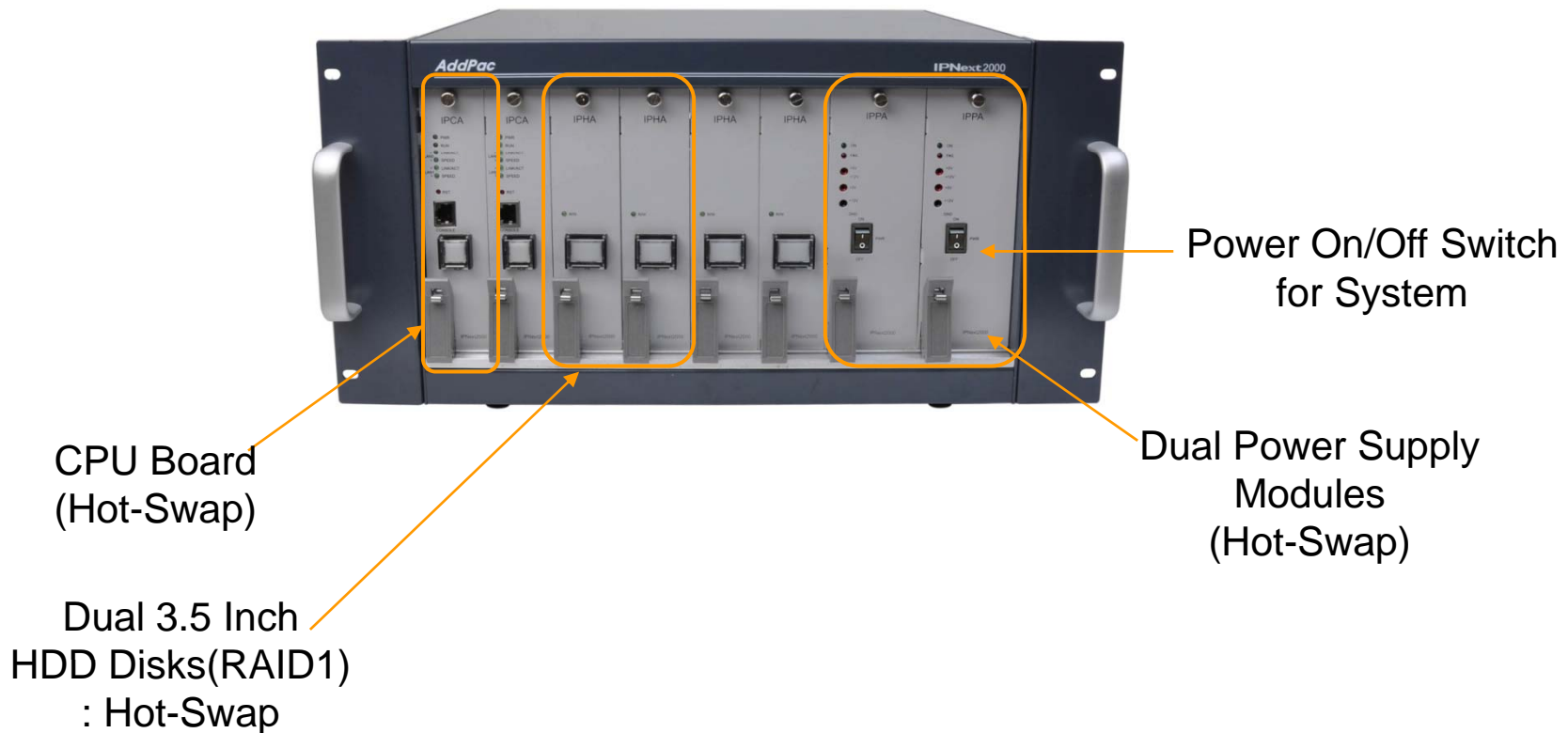
- Multiple Smart Hub Support for Zigbee/Zwave sensors
- RTP based Video Door Phone Support
- RTSP based Network Video Encoder Support
- TCP/UDP Transport Protocol Support
- Two(2) Module Slots for Embedded Sensor Control Service Module
- Fault Tolerant and High Reliability Service using Dual CPU Module
- Load Balance and Hot-Swap Service
- Compact Size and Low Power Consumption compare with Commercial Server
- IP based Network Protocol Support
- Web based Smart Sensor Network Control Management Software
- Smart Tab, Smart Phone Appl. Support for Sensor Control, Network Camera, Video Door Phones.
- Mini Call Manager Support for Standard SIP based Smart Phone Application Services

# Hardware Specification

AP-SNC3000 Smart Sensor Network Controller

High-end  
**RISC**

## AP-SNC3000 Front Side

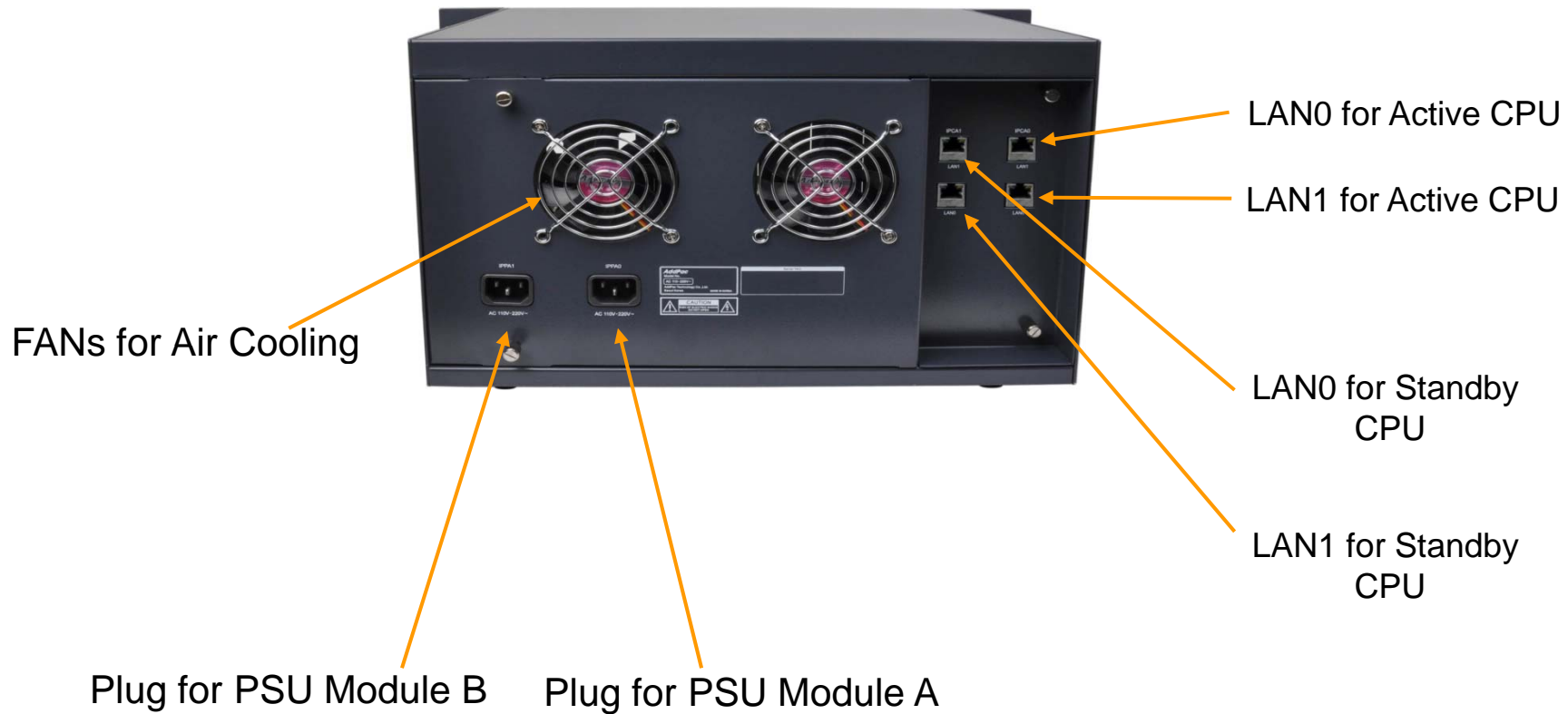


# Hardware Specification

AP-SNC3000 Smart Sensor Network Controller

High-end  
**RISC**

## AP-SNC3000 Back Side

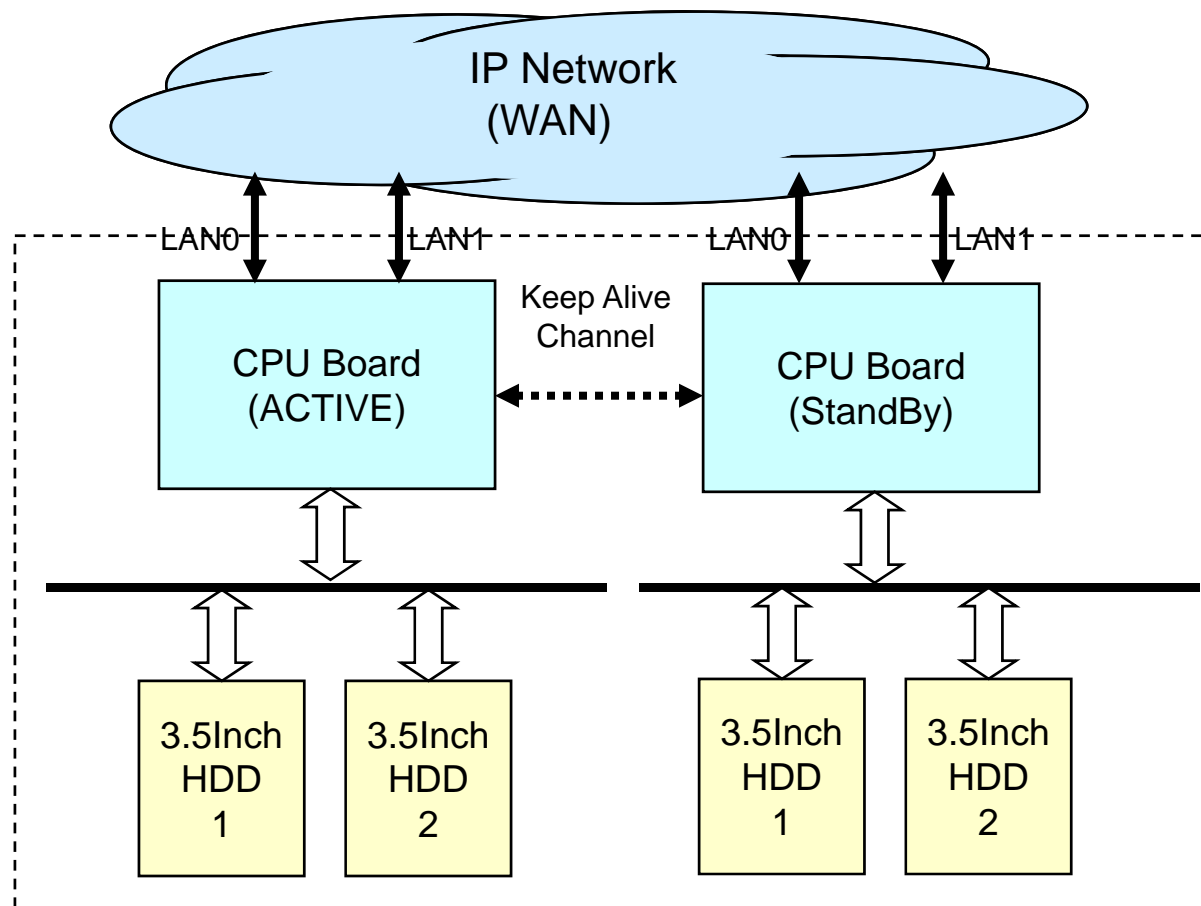




# System Redundancy Features

AP-SNC3000 Smart Sensor Network Controller

AP-SNC3000 System Block Diagram





# Smart Sensor Network Controller AP-SNC2000

# Product Overview

## AP-SNC2000 Smart Sensor Network Controller

- Embedded H/W Platform with Dual CPU Module Slots
- Fault Tolerant and Reliability Service
- Support Multiple Smart Hub for Zigbee/Zwave sensors
- Support RTSP based Network Video Encoder (Video Codec, IP Camera, etc) Control
- Support RTP based Video Door Phone Control
- Mini Call Manager Function Support for Smart Phone, Tab/PAD registration
- Load Balance using RTSP Redirect Service
- Web Server Function for Smart Tab, Smart Phone Appl.

# Benefits and Features

## AP-SNC2000 Smart Sensor Network Controller

- Multiple Smart Hub Support for Zigbee/Zwave sensors
- RTP based Video Door Phone Support
- RTSP based Network Video Encoder Support
- TCP/UDP Transport Protocol Support
- Two(2) Module Slots for Embedded Sensor Control Service Module
- Fault Tolerant and High Reliability Service using Dual CPU Module
- Load Balance and Hot-Swap Service
- Compact Size and Low Power Consumption compare with Commercial Server
- IP based Network Protocol Support
- Smart Tab, Smart Phone Appl. Support for Sensor Control, Network Camera, Video Door Phones.
- Mini Call Manager Support for Standard SIP based Smart Phone Application Services

# Hardware Specification

AP-SNC2000 Smart Sensor Network Controller

High-end  
**RISC**

- High-end Programmable RISC Hardware Architecture
- Two(2) Module Slots for Redundancy and Load Balance
- Smart Sensor Network Control Module (AP-SNCM)
  - Network Interface
    - Two(2) 10/100/1000Mbps Gigabit Ethernet
    - One(1) Console Port



# Hardware Specification

AP-SNC2000 Smart Sensor Network Controller

High-end  
RISC

AP-SNC2000 Front View



Sensor Network Controller Module

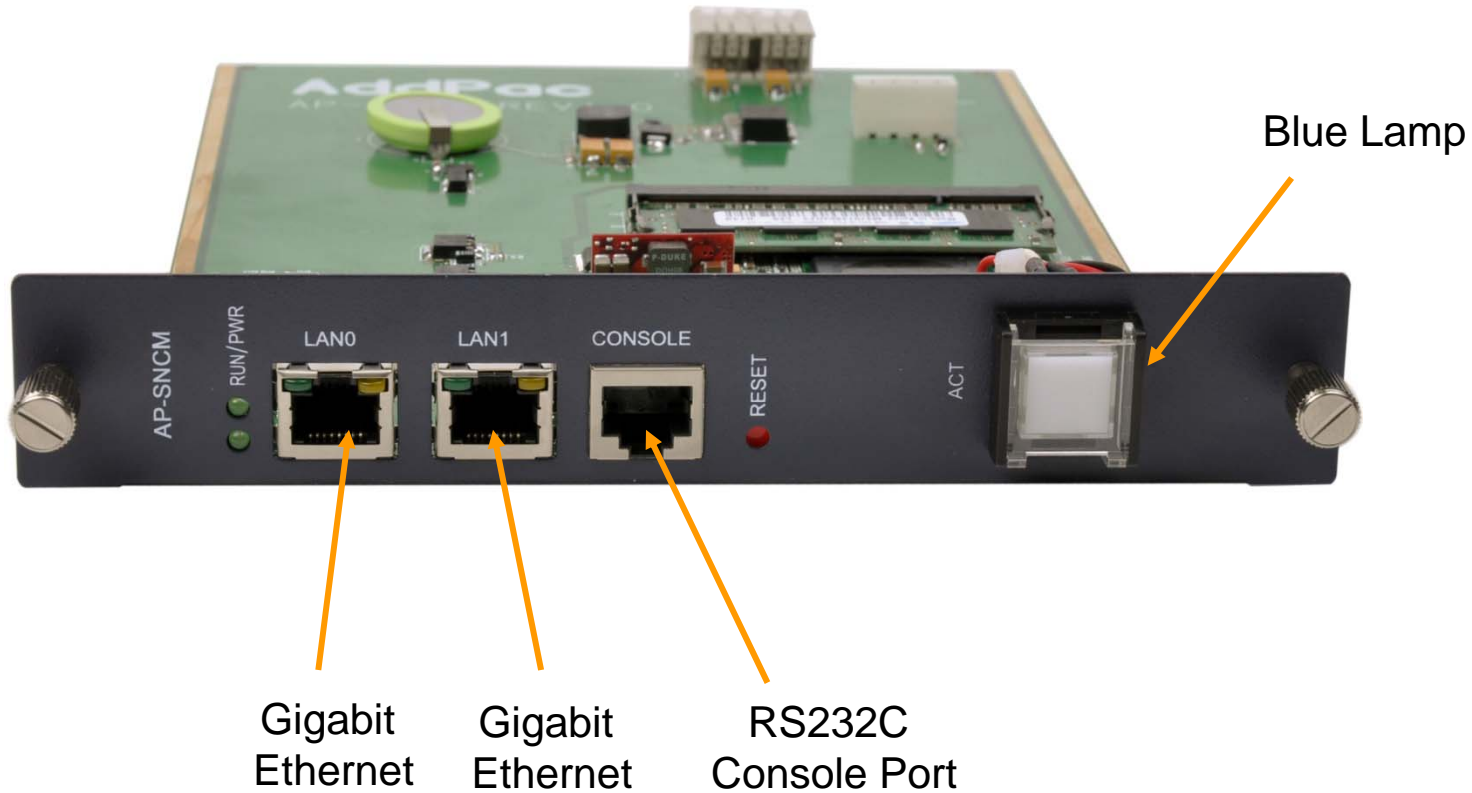


# Hardware Specification

AP-SNC2000 Smart Sensor Network Controller



## AP-SNCM Sensor Network Control Module





# Thank you!

**AddPac Technology Co., Ltd.**  
Sales and Marketing

Phone +82.2.568.3848 (KOREA)

FAX +82.2.568.3847 (KOREA)

E-mail [sales@addpac.com](mailto:sales@addpac.com)