

# Smart Sensor Network Controller Solution



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Sales and Marketing

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- Flexible Controller and Manager Configurations
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# Overview

# Key Concepts for Enterprise IoT Solution

- **Enterprise Requirements**

- The things in enterprise are controlled on much more complex environment and configurations than home.
- Network conditions and management requirements are also much more various than home.

- **Our Solution**

- We do support flexible configuration of Smart IoT Controllers and Managers to meet various enterprise requirements.
- We do support several type of Smart IoT Controllers and Managers to meet various enterprise environments.
- We do support flexible management authority and access control for center/site operators and users.

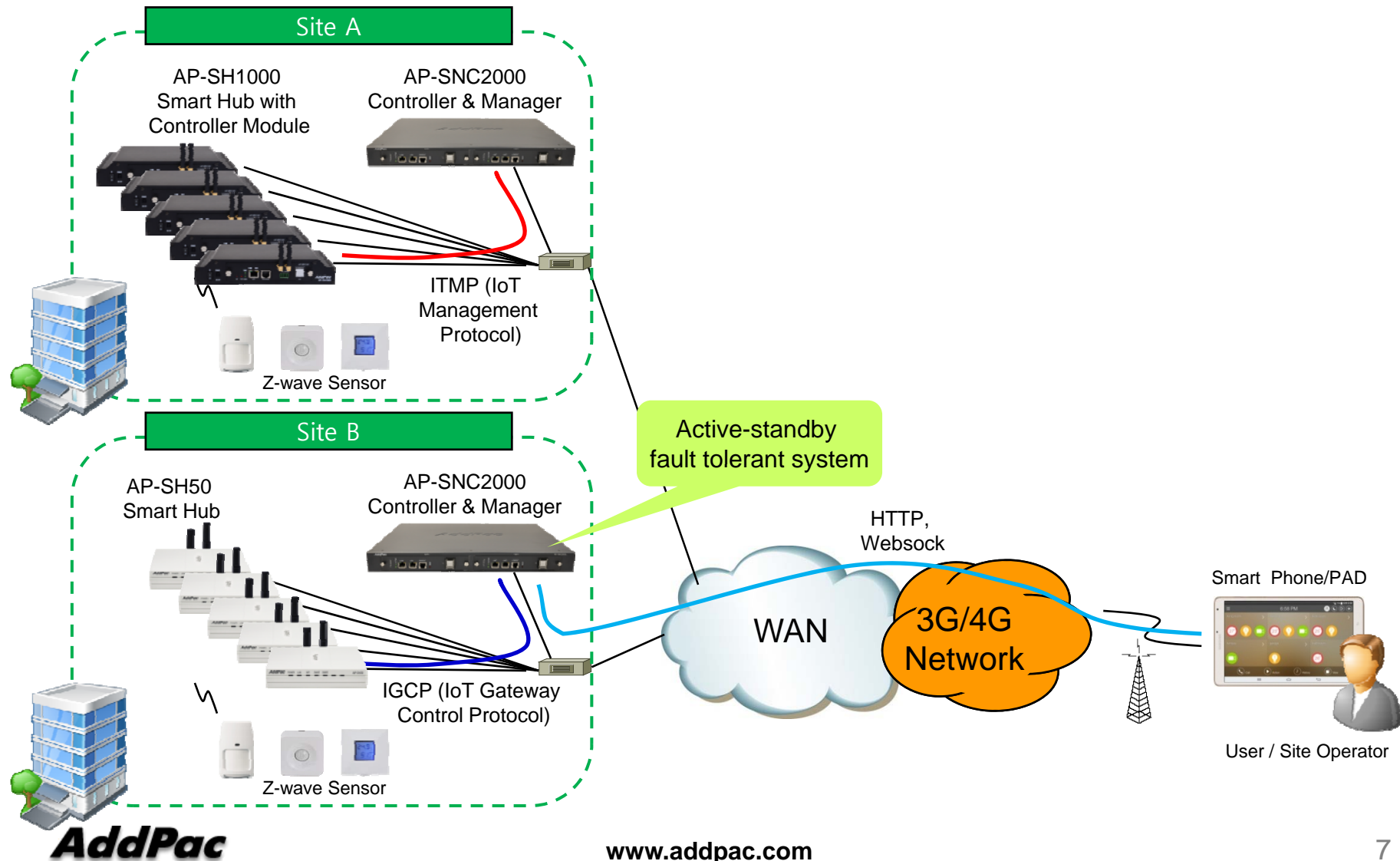
# Hierarchical Administrative Domains

- **Super Administrator**
  - He can manage multiple sites and site operators.
- **Site Operator**
  - A site is logically independent administrative domain which can be a building or a set of offices and buildings.
  - A site operator can manage his site and group operators of it.
- **Group Operator**
  - A site is composed by multiple sections that are build up by hierarchical groups.
  - A group operator can view and control the sections that are belong to the group.
- **User**
  - An user can view and control his section.

# Single Site Standalone Model

- **Smart IoT Site Manager**
  - A Smart IoT Manager is located in a enterprise building with secure and robust connection to Smart Hubs in the site.
  - A **AP-SNC2000** system has ITMS-SS™ software modules with active-standby fault tolerant configuration.
  - **ITMS-SS™** is manager module for single site which manages multiple sections and heretical group of sections in a site.
- **Smart Hubs**
  - The Smart Hubs with / without built-in controller can be controlled and managed by ITMS-SS™.

# Single Site Standalone Configuration

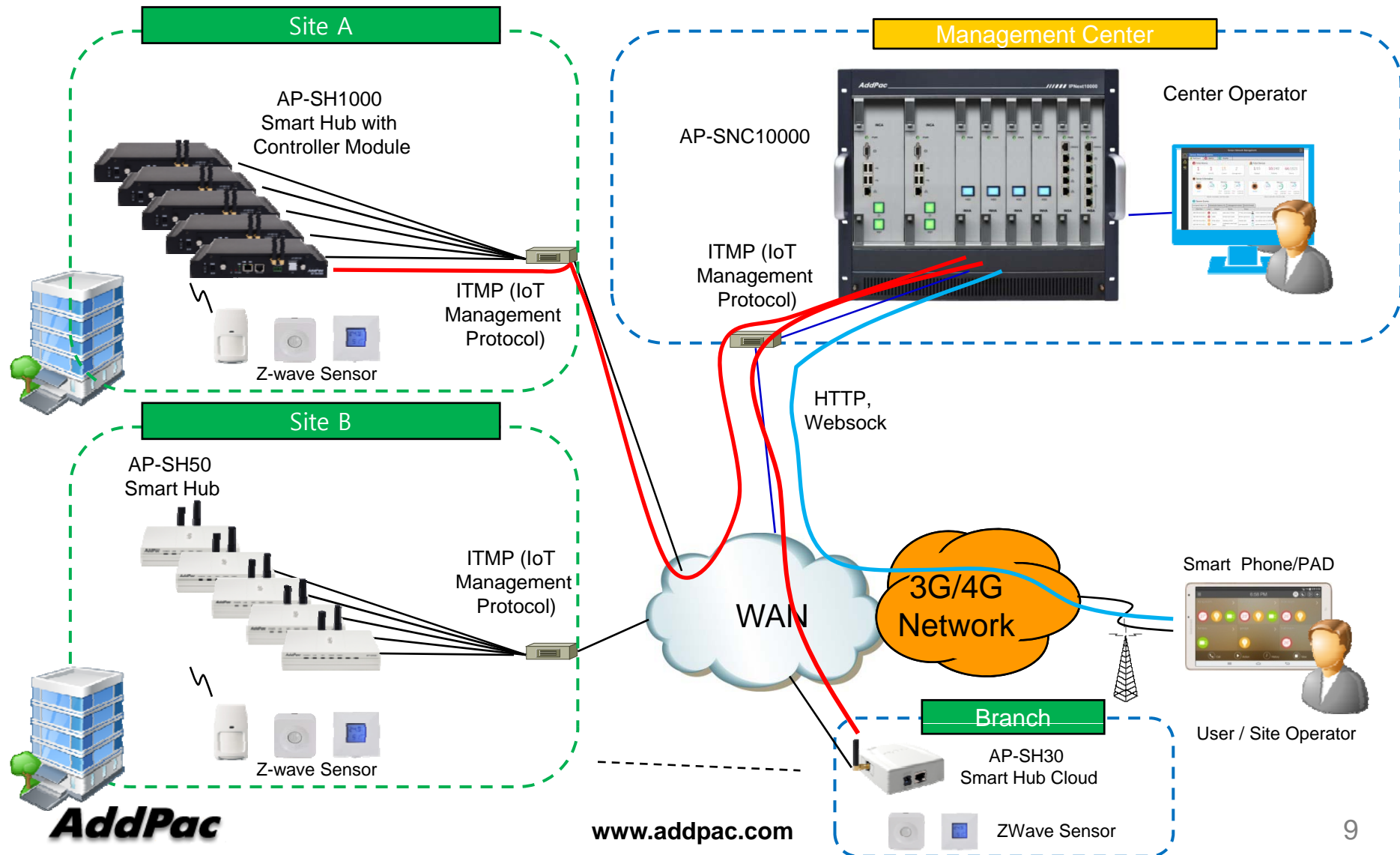


# Multi Sites with Center Controller & Manager Model

- **Smart IoT Center Manager**
  - A management center has a AP-SNC10000 with **ITMS-MS™** software modules with active-standby fault tolerant configuration.
  - **ITMS-MS™** is manager module for multiple sites which manages multiple sections and heretical group of sections in multiple sites.
- **Smart Hubs**
  - The Smart Hubs with / without built-in controller can be controlled and managed by **ITMS-MS™** in a center.



# Multi Sites with Center Controller & Manager Configuration








# Smart IoT Manager ITMS™

- ITMS™ is software module to manage set of Smart Hubs and controllers.
- ITMS-SS™ can manage single site and ITMS-MS™ can manage multiple sites.
- It manages super administrator, site operator, group operator.
- It manages sites, groups, sections.
- It monitors alarms, events and logs.
- It monitors servers and devices in the site.
- It provides dashboard of site, group, and section.
- It provides provisioning, upgrade, replace of Smart Hubs.



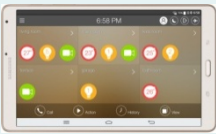



# IoT Equipments




# 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

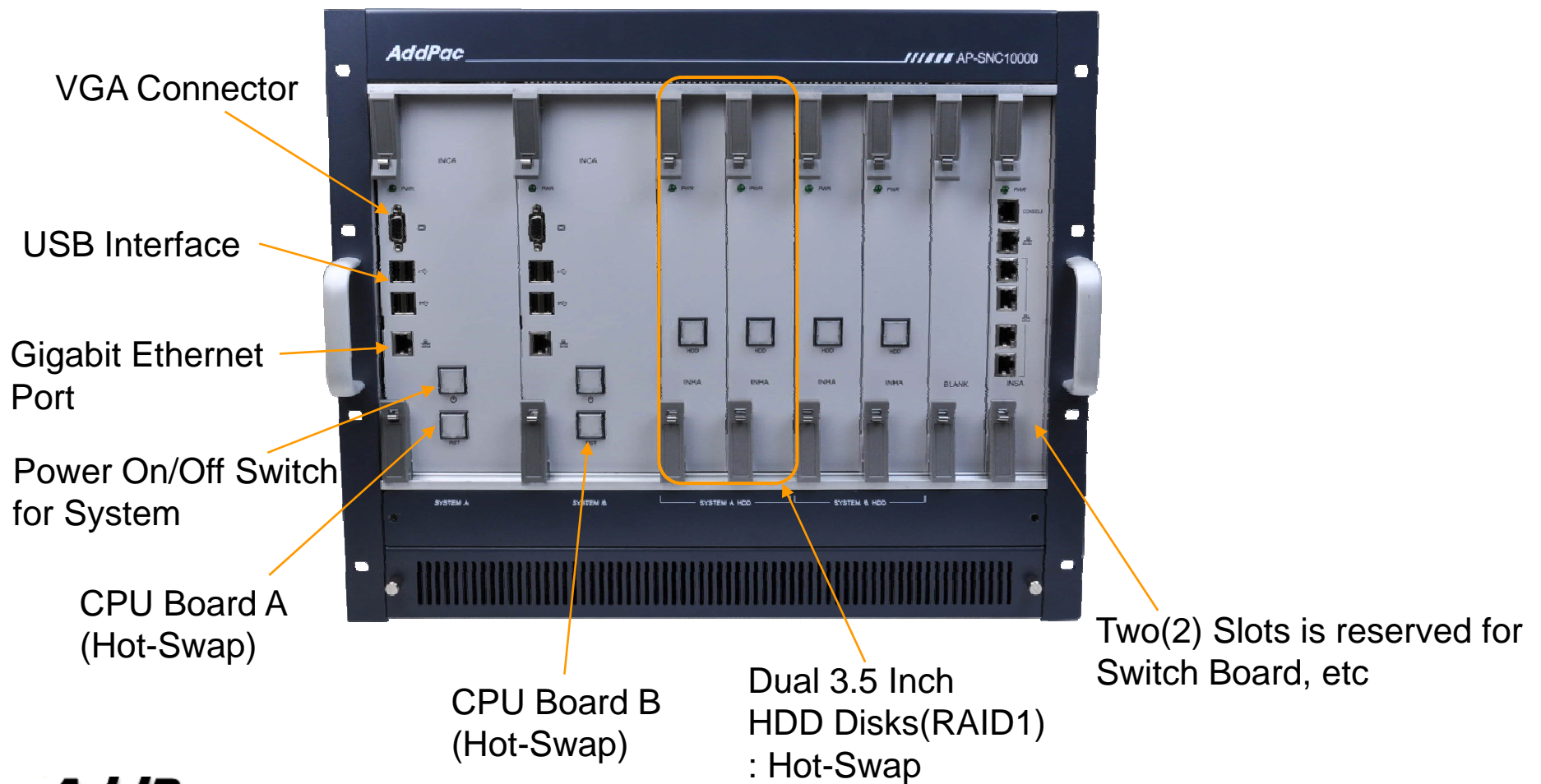
## AP-SNC10000 Smart Sensor Network Controller

- 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

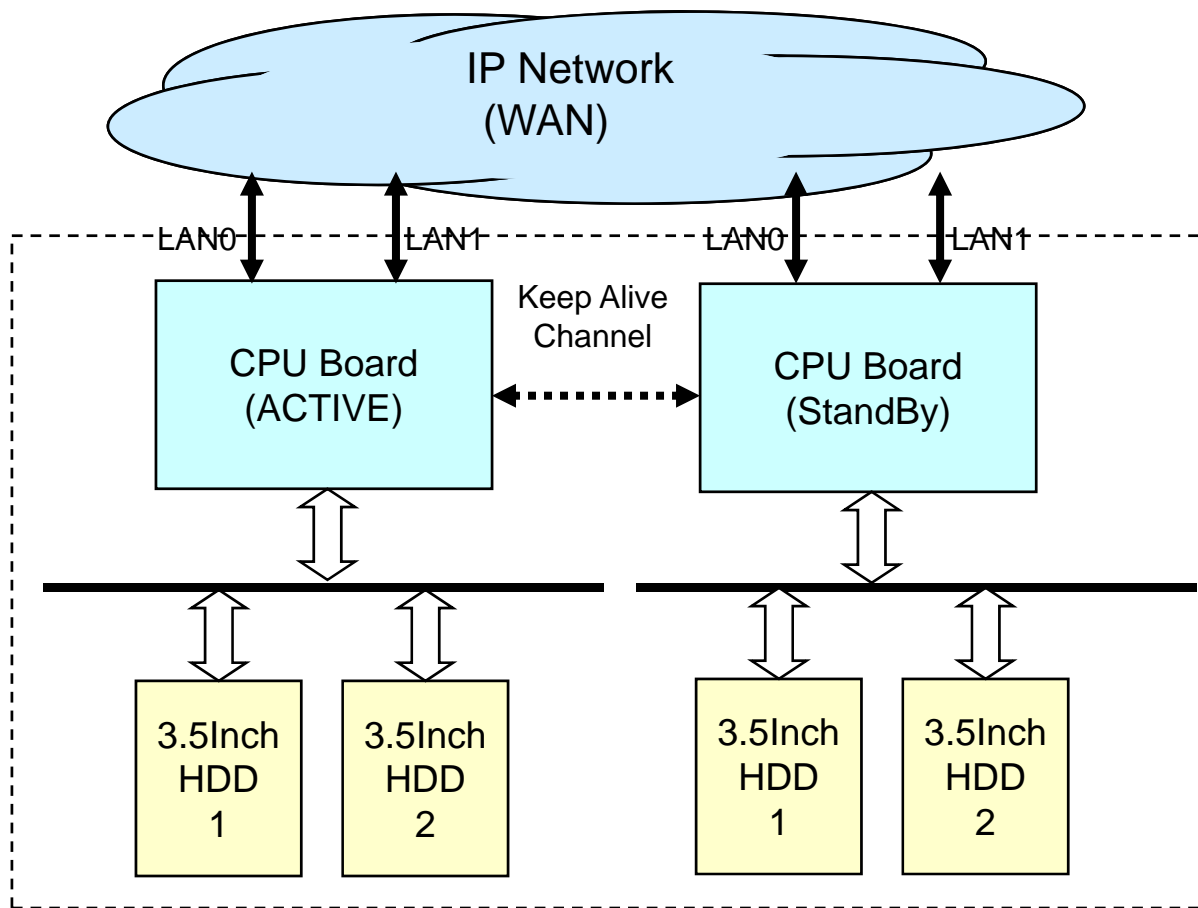
Dual Power Supply  
for System A

Dual Power Supply  
for System B

# System Redundancy Features

AP-SNC10000 Smart Sensor Network Controller

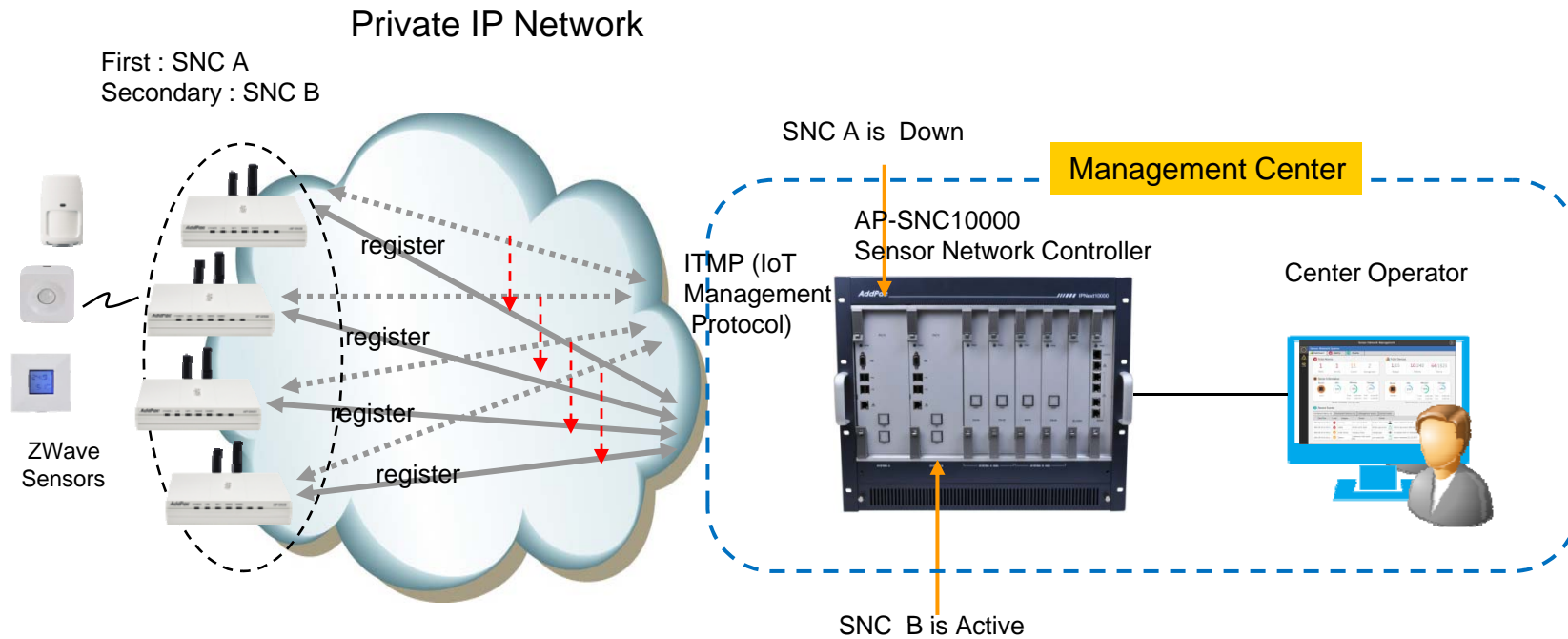
### AP-SNC3000 System Block Diagram



# 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

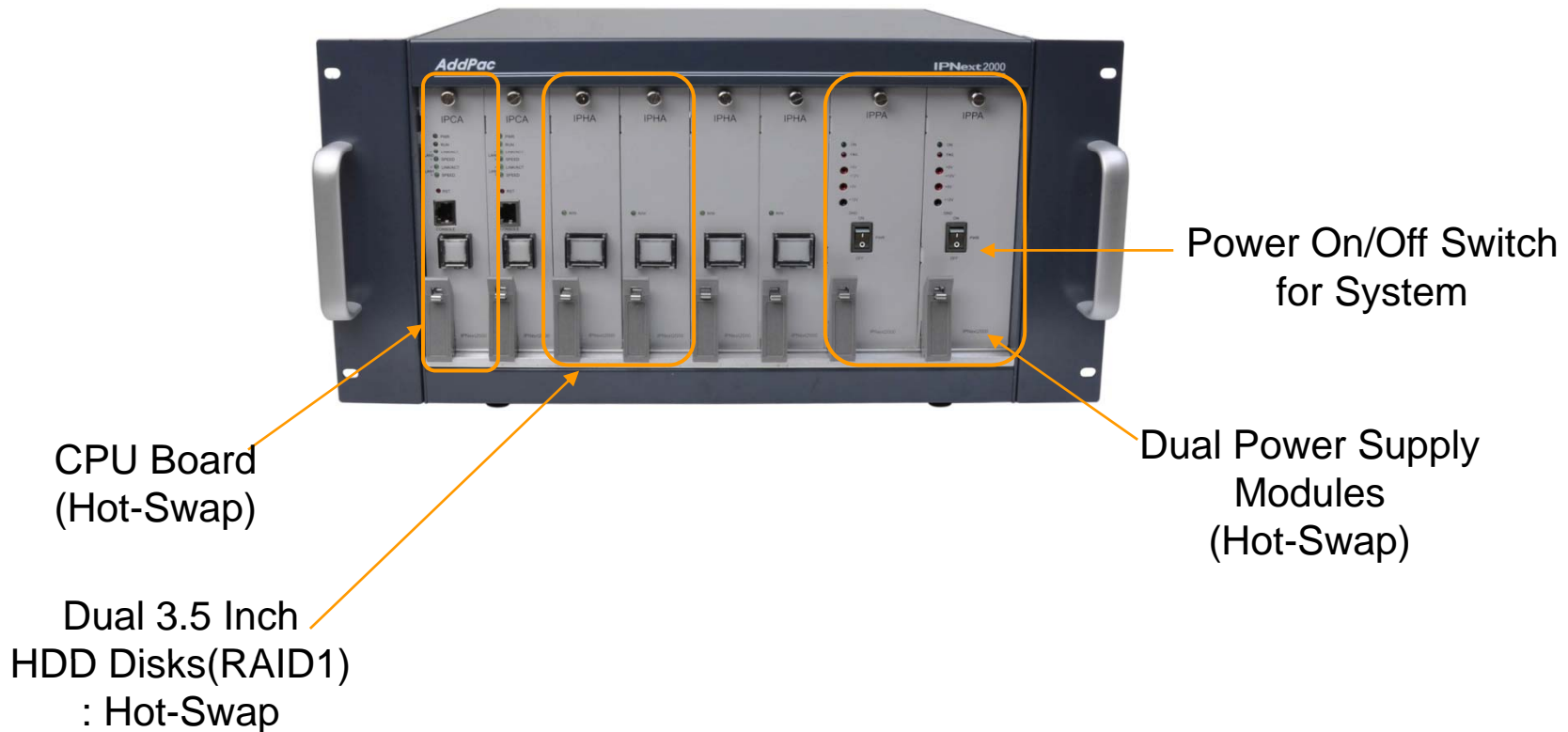


# Hardware Specification

AP-SNC3000 Smart Sensor Network Controller

High-end  
**RISC**

## AP-SNC3000 Front Side

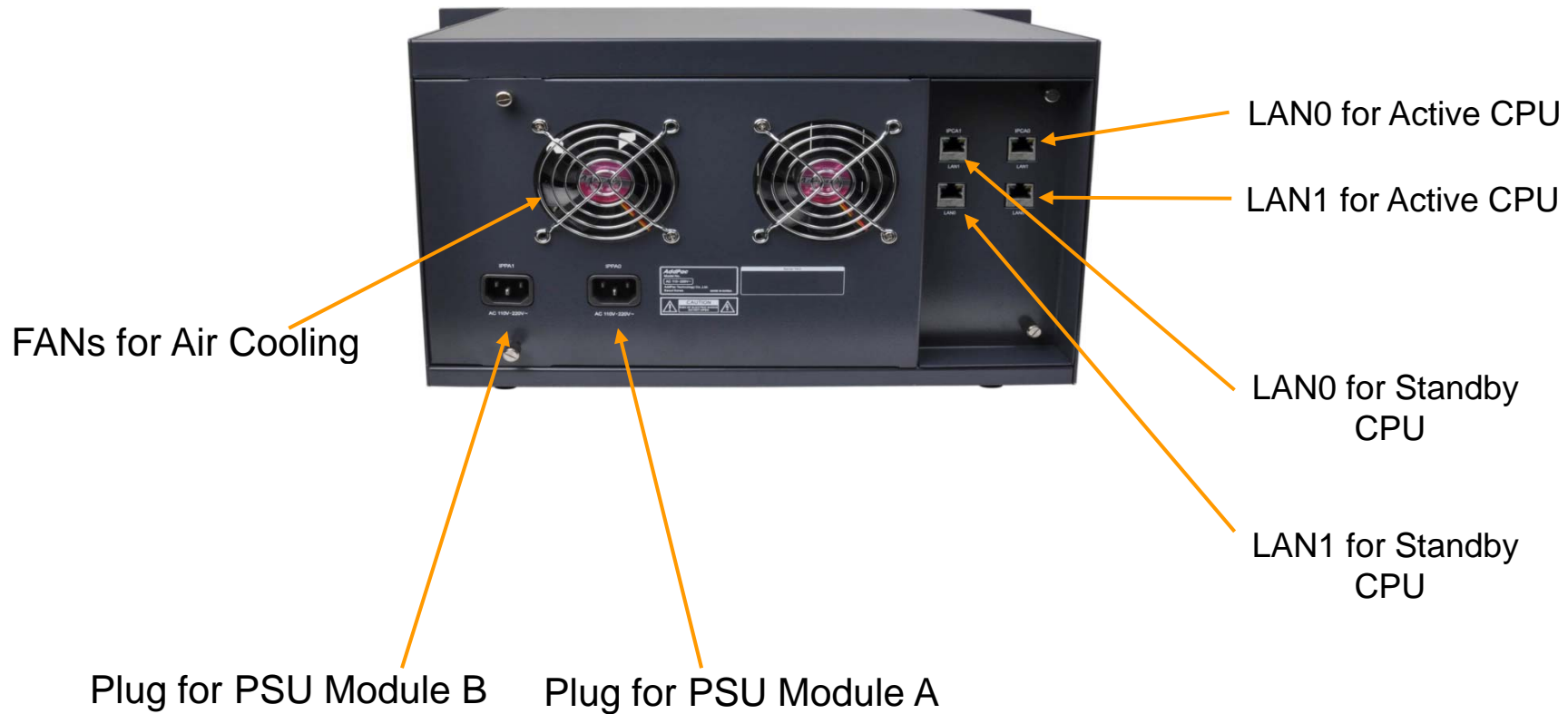


# Hardware Specification

AP-SNC3000 Smart Sensor Network Controller

High-end  
**RISC**

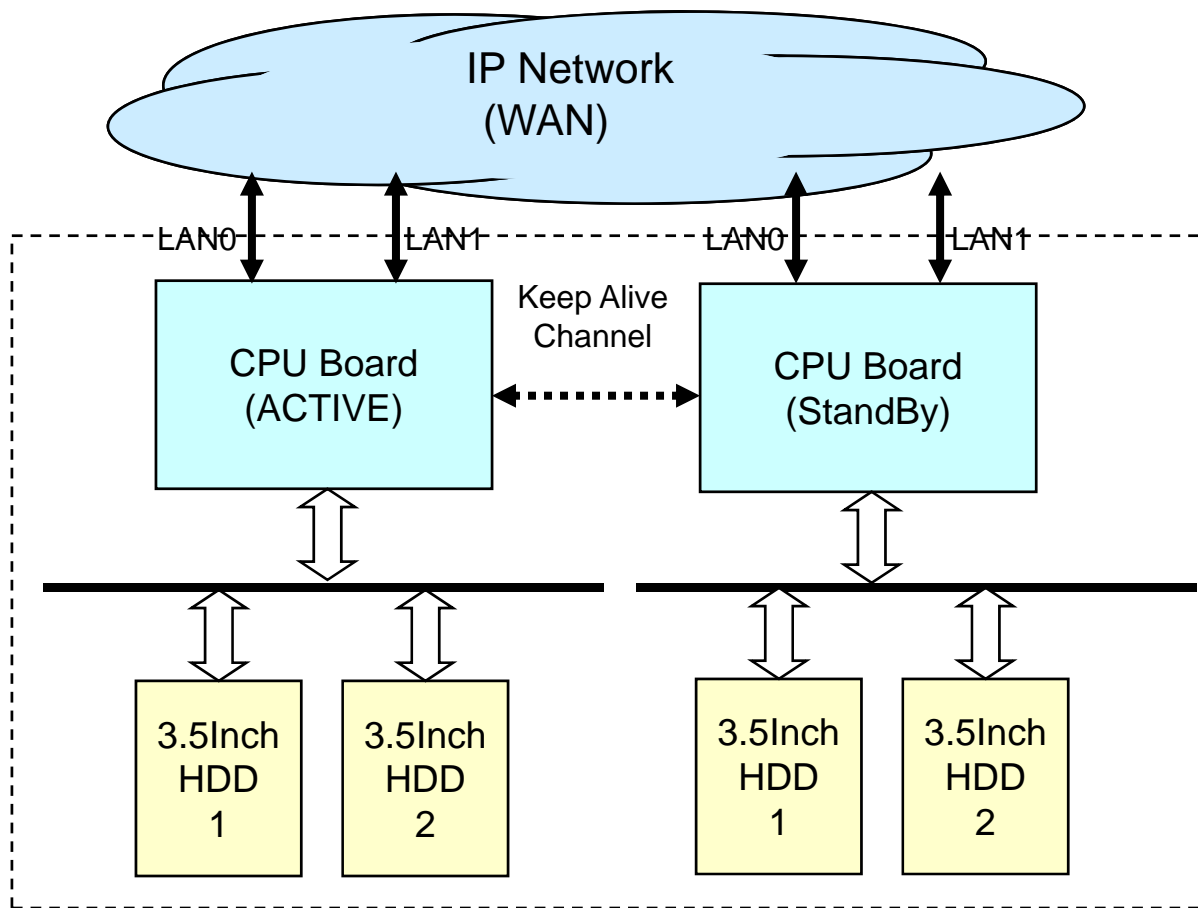
## AP-SNC3000 Back Side



# 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



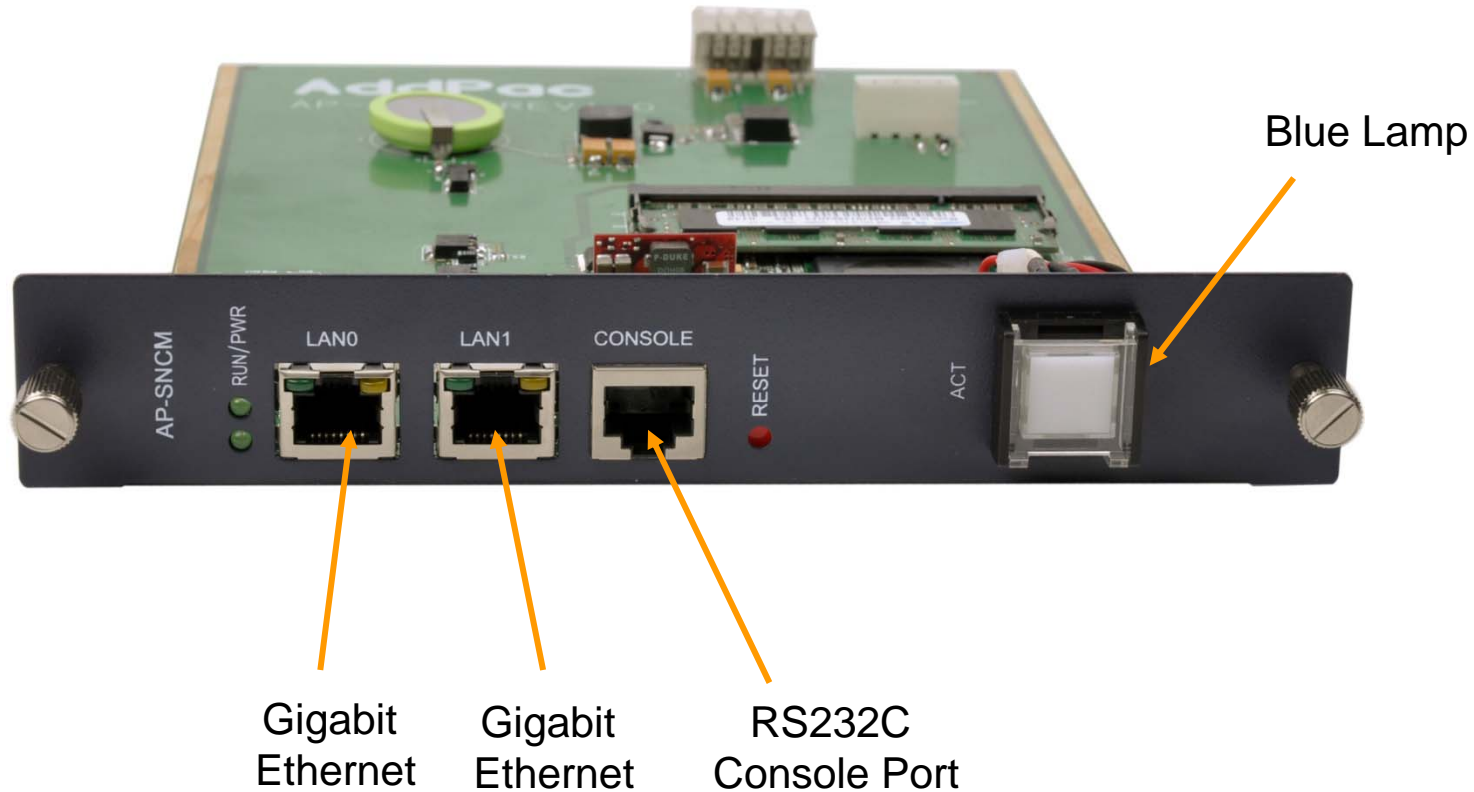


# Hardware Specification

AP-SNC2000 Smart Sensor Network Controller

High-end  
**RISC**

## AP-SNCM Sensor Network Control Module





# Thank you!

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