What is Electronic Shelf Label

Sub-1G wireless communication

E-paper Display

LED

NFC
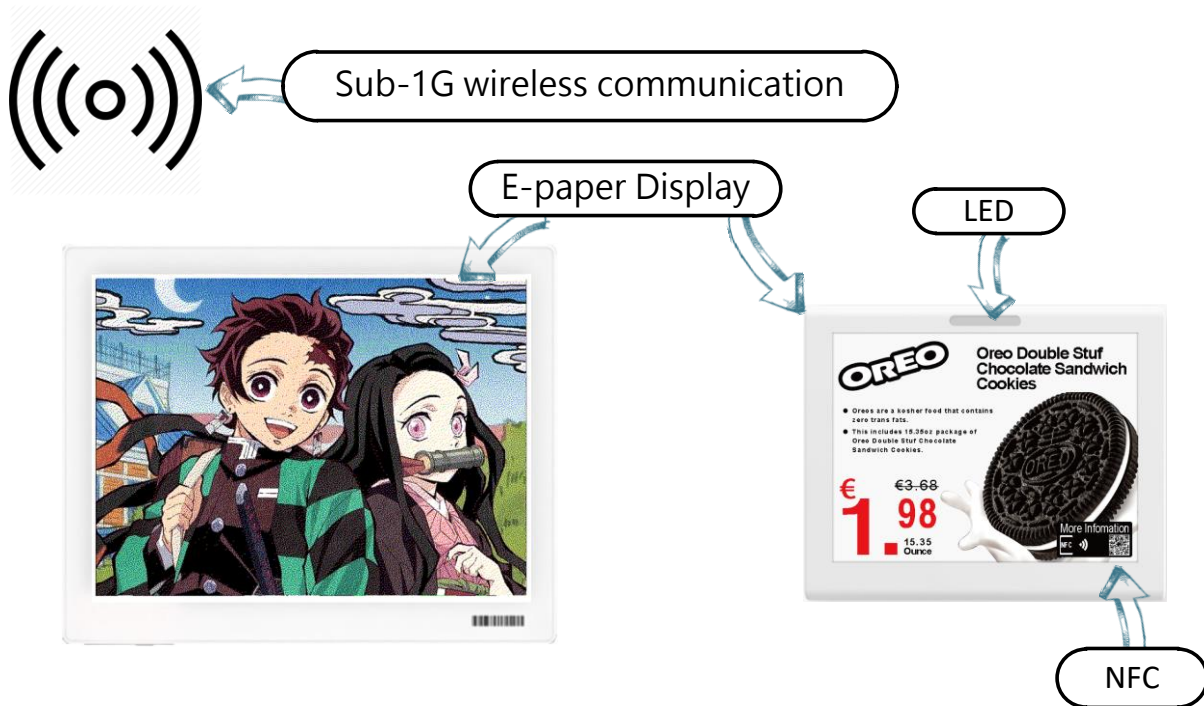
The best way to replace traditional price tag

E-paper display	• Wide view angle • Ease of reading • Low power consumption
LED	• Locate product or ESL • Highlight special event
NFC	• Product traceability • Customer self-checkout
Wireless Communication	• Less infrastructure investments • More flexibilities

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Solution Architecture

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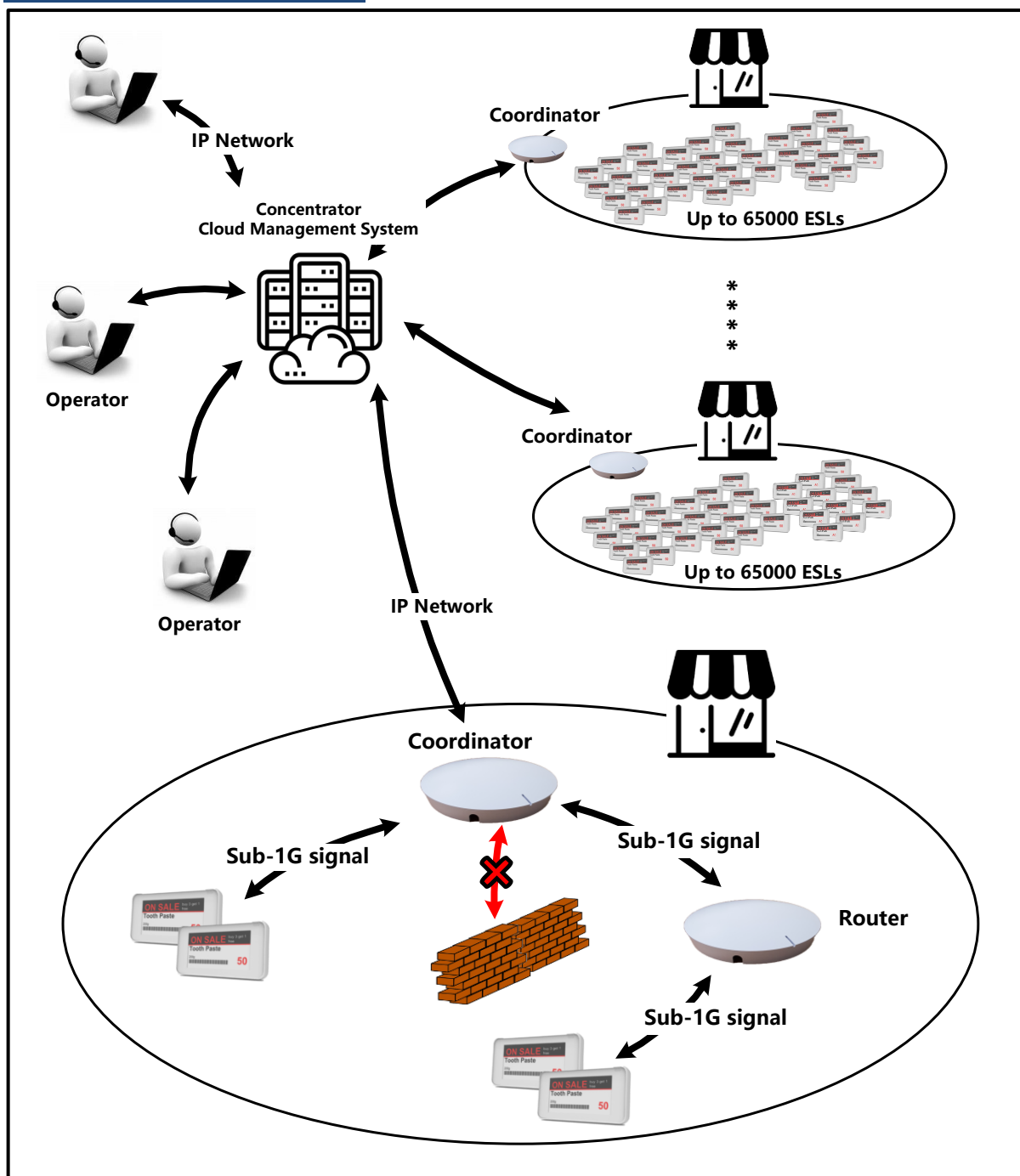
Role in Solution

Concentrator

Coordinator	
Router (optional)	
ESL Tag 65000	

Signal Coverage

Device Number
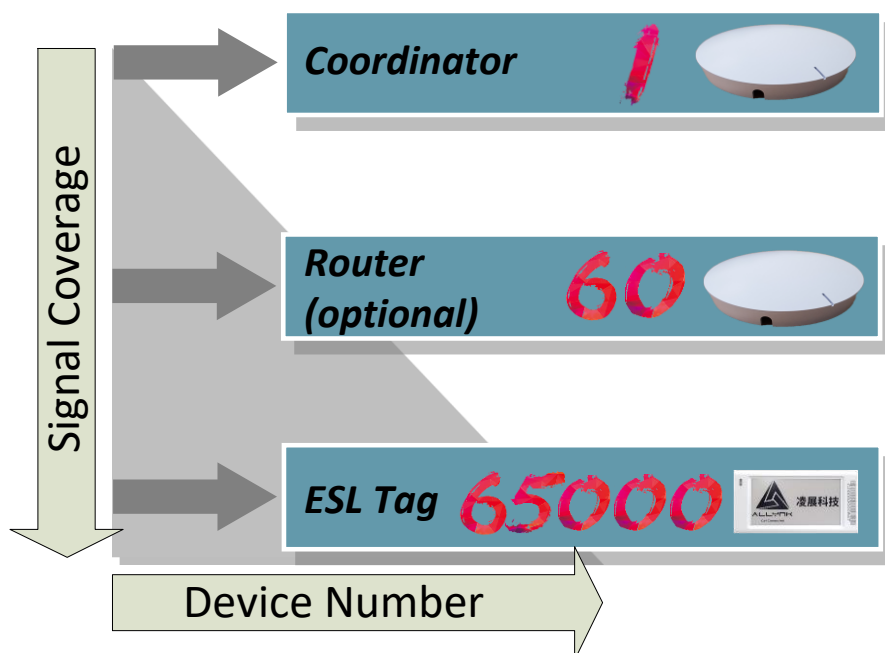
Concentrator	• Manage Coordinators via IP network • Provide management interface to operator
Coordinator	• Receive command from Concentrator • Manage Routers and ESLs via sub-1g wireless communication • Mandatory device in each ESL network
Router	• Forward sub-1g signal to ESL or Coordinator • Optional device in each ESL network
ESL	• Receive data from Coordinator via Sub-1g wireless communication

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Solution Highlights

Huge Network Capacity

Support up to 65000 ESL tags in a network

Coordinator

Up to 65K ESLs

Self-Constructed Network

Device will join to the network automatically without hassles

Coordinator

Wakeup Signal

Auto Detect & select

ESL

Construct connection

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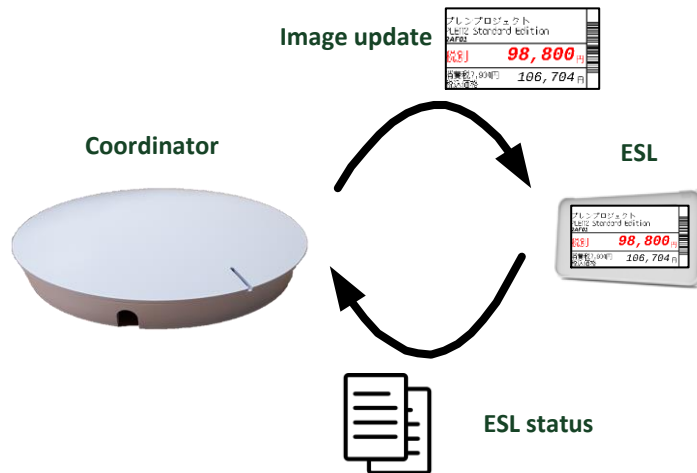8F No.20, Chenggong 13th St. Zhubei City, Hsinchu County 30264, Taiwan
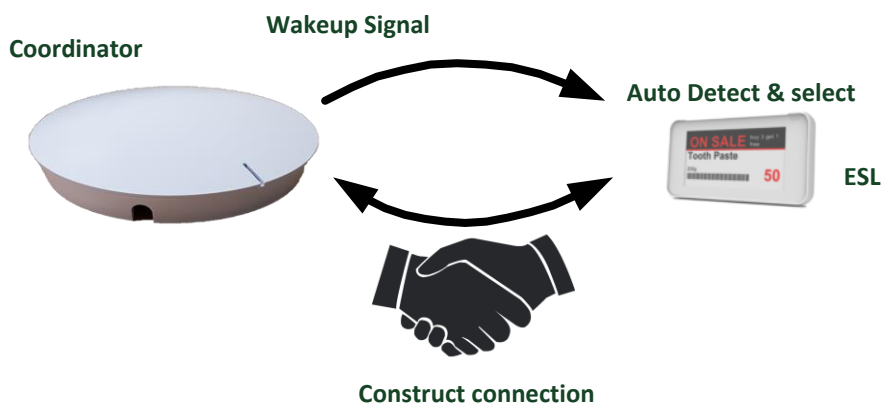
ESL SOLUTON INTRODUCTIONS
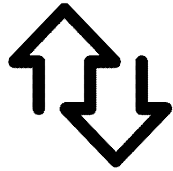
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Symmetric Bi-directional Tx

Ease of pushing data to tag or retrieving statistics from tag

Image update

Coordinator

ESL

ESL status

Signal Extension

Convey signal and bypass dead corners

Router 1

Router 2

Can not reach ESL Group2

Coordinator

ESL Group1

ESL Group2

Can not reach ESL Group1

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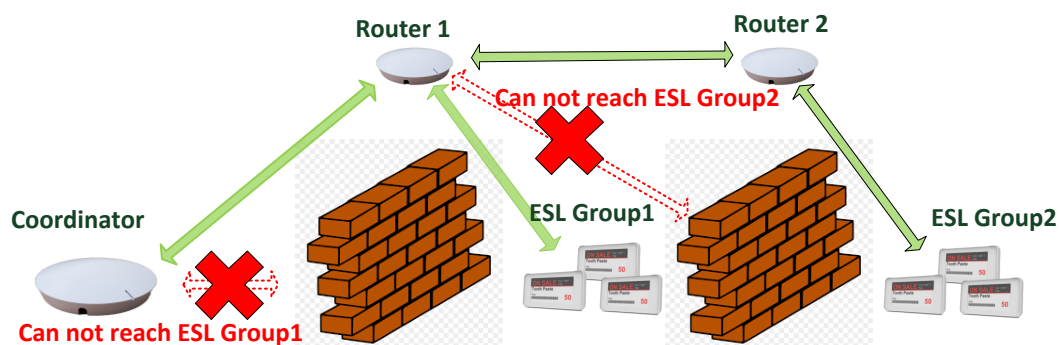
ESL SOLUTON INTRODUCTIONS
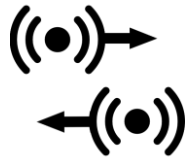
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Fast Roaming

Device can roam between authorized networks with short latency

Coordinator 1

Coordinator 2

Camp to Coordinator 1

Signal blocked

Roam to Coordinator 2

ESL

ESL is moving

ESL
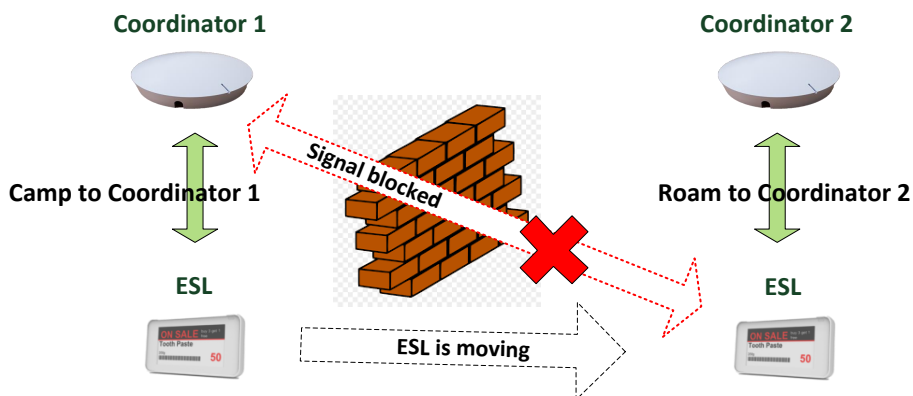
Fast Image Update

More than 20000 full image updates per hour

Coordinator

20000 Full Image updates / hr
(* All images are different)

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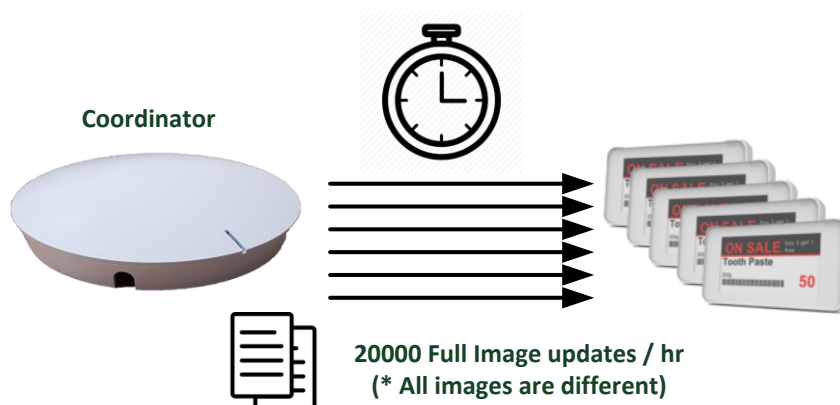
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Smart Firmware Upgrade

Upgrade device's firmware wirelessly (65K ESLs in 10 mins)

Firmware update

Firmware

Coordinator
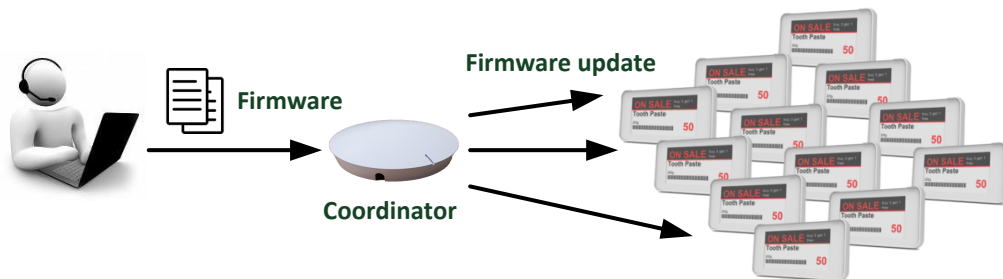
Solid Security Mechanism

Device authorization and data encryption with dynamic key exchange keep customer data safe

Authorization

Key exchange and AES128 Encryption

Coordinator

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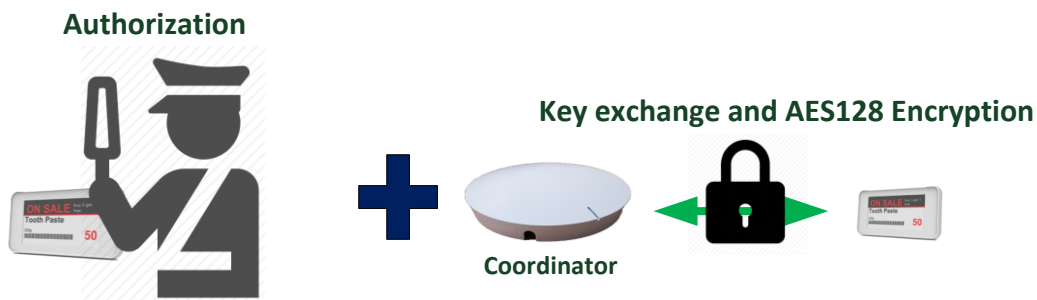
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Extremely Long Battery Life

No battery replacement in 5 years (CR2450*1)

Full Function Management Software
Concentrator software can rule all coordinators and also provides universal RPC interface to integrate with customer's system

Concentrator software

Coordinator → Up to 65K ESLs

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Coordinator → Up to 65K ESLs

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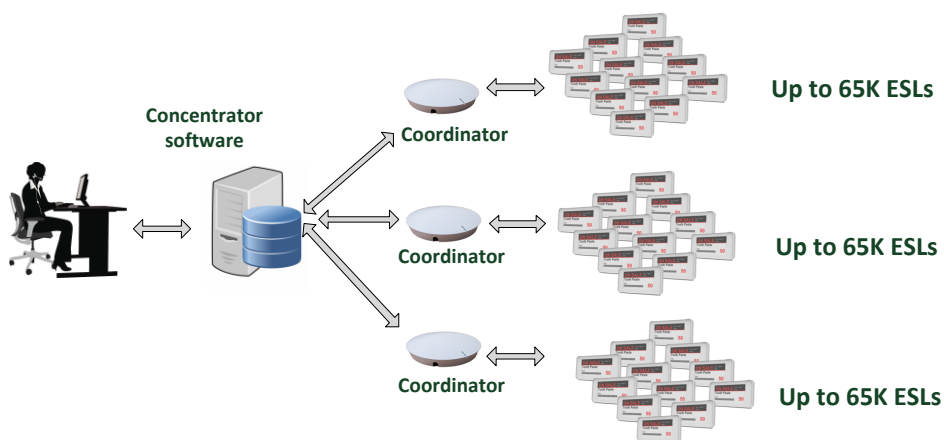
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Product Specifications

Model Name	AKC26V	AKC42V
Dimensions	83 x 41 x 11.6 mm	105.3 x 94.5 x 12.3 mm
Display	2.66" Epaper (296x128 pixels) Black/White/Red	4.2" Epaper (400x300 pixels) Black/White/Red
Transmission range	~30m indoors	~30m indoors
Connectivity	Sub-1G wireless (902~928Mhz) NFC	Sub-1G wireless (902~928Mhz) NFC
I/O	LED x 1	LED x 1
Power supply	CR2450 x 2	CR2450 x 2
Battery life	7 years (2 updates/day)	5 years (2 updates/day)
Security	Device authentication AES128 + key exchange	Device authentication AES128 + key exchange

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Model Name	AKE58V	AKC58V
Dimensions	135.4 x 109.5 x 8.5 mm	135.4 x 109.5 x 8.5 mm
Display Size	5.65" 7-Color Epaper (600 x 448 pixels)	5.65" 3-Color Epaper (600 x 448 pixels)
Display Color	Black / White / Green / Blue / Red / Yellow / Orange	Black / White / Red
Transmission range	~30m indoors	~30m indoors
Connectivity	Sub-1G wireless (902~928Mhz) NFC	Sub-1G wireless (902~928Mhz) NFC
Power supply	CR2430 x 4	CR2430 x 4
Battery life	5 years (2 updates/day)	5 years (2 updates/day)
Security	Device authentication AES128 + key exchange	Device authentication AES128 + key exchange

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Model Name	CO900D	RT900D
Key Feature	Network management	Signal forwarding
Dimensions	160 x 160 x 20 mm	160 x 160 x 20 mm
Transmission range	~30m indoors	~30m indoors
Connectivity	Sub-1G wireless (902~928Mhz) 10/100Mbps Ethernet	Sub-1G wireless (902~928Mhz)
I/O	LED x 3	LED x 3
Power supply	POE / MicroUSB	POE / MicroUSB
Security	Device authentication AES128 + key exchange	Device authentication AES128 + key exchange

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Model Name	CONCENTRATOR
Descriptions	Site management Software
Features	• For both Windows and Linux platform • Cloud-Ready • Manage multiple networks • Device & Application data management • Data-to-image generation engine • RPC Interface for integration • Support C# / Java / Node.JS / Ruby /Go / C++...

FCC Warning:
Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1)This device may not cause harmful interference, and
(2)This device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

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