

# Smart City Solutions



The central focus is the 'All-in-One Smart City Box', a white, rectangular outdoor enclosure with multiple ports on the front. It is surrounded by various icons representing its capabilities:

- Cyber Security:** A green padlock icon.
- Weatherproof:** An umbrella icon with the text 'IP67'.
- Dashboard:** A circular gauge icon.
- Report:** A 3D pie chart icon.
- Sensor:** A black probe icon.
- Loud Speaker:** A blue and white megaphone icon.
- VoIP Microphone:** A black microphone on a stand icon.
- Lithium Battery:** A green battery icon with a lightning bolt.
- Solar Panel:** A black solar panel icon.
- Wide Temperature:** A thermometer icon showing a range from -40 to 75°C.
- Anti Shock Vibration:** An icon of a high-speed train.
- Giga Fiber:** A fiber optic connector icon.
- Ultra PoE:** A lightning bolt icon.
- GPS:** A red location pin icon.
- Router:** A brown network router icon.
- Cat.4/6 LTE:** A bar chart icon.
- 802.11ac Wi-Fi:** A white Wi-Fi signal icon.
- Cloud Services:** Logos for Microsoft Azure, Amazon Web Services, and ThingsMaster.

**Master in IIoT World**

# All-in-One IP67 Smart City Box

The SCB1000/1200 series are fully integrated communication systems within an IP67 enclosure for Smart City and Industrial Internet of Thing (IIoT) applications. The Gigabit 802.3bt ultra PoE /802.3at PoE+ ports, Fiber SFP, Serial, Voice, DI, DO are protected by weatherproof cable gland connectors. It is greatly flexible with different power in/out sources, internal USB, SD , Ethernet and mPCIe socket for wireless expansion. Comparing with traditional cabinets, the SCB1000/1200 series save you a lot of time and cost for system integration.

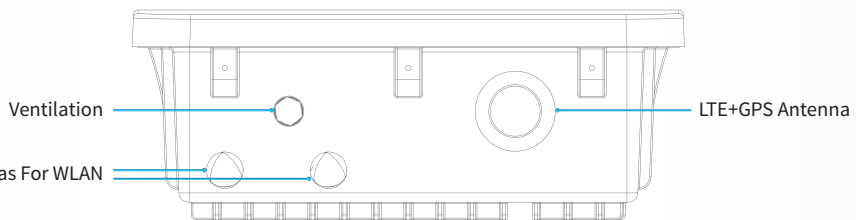
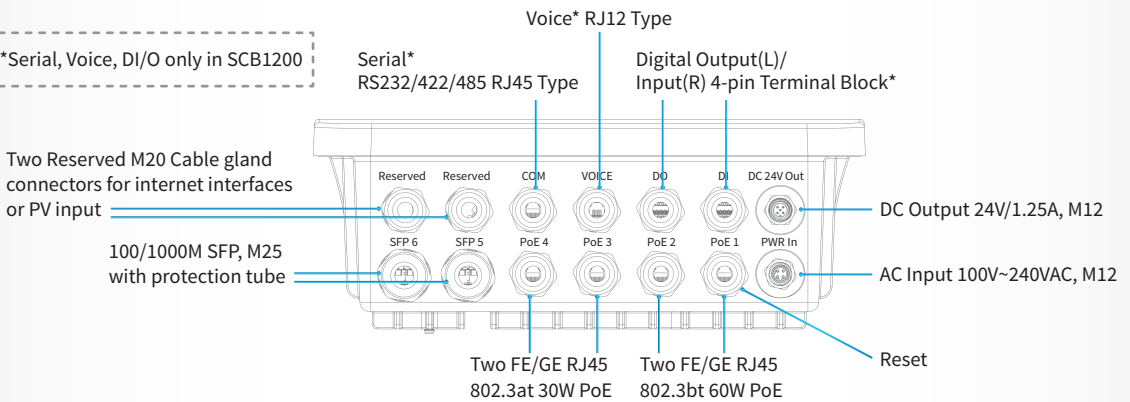
The embedded MQTT and RESTful API enable public cloud integration such as AWS or Azure. The private cloud platform ThingsMaster can also be deployed for instant and secured access to for surveillance and IIoT management. With the versatile AC/DC/Solar power sources, you can easily install the box on roadside power tower, street light or wall mount on the wall/roof in the field.



Bottom

Dimension: 346(W) x 406(D) x 135.5(H) mm

\*Serial, Voice, DI/O only in SCB1200



Top

## 60W Ultra PoE for Digital Signage / Smart Street Lighting

- 2 Giga Ultra PoE 802.3bt Ports with 60W/per port
- 2 Giga PoE+ 802.3at Ports with 30W/per port
- 1 internal PoE+ 802.3at WAN port for VPN, NAT, Routing Expansion
- PoE Enable/Disable, Budget Control, Port Control, Port Priority, PD Alive Check and port status
- Max. 240W power budget for PoE & DC Output

## Weatherproof IP67 Enclosure and cable gland connectors

- Four Giga PoE ports
- Two 100/1000M Fiber SFP slots

SCB1200 only

- One RS232/422/485 RJ-45 port
- One Audio RJ12 port
- Two Digital Inputs
- Two Relay Outputs

Weatherproof M12 connector

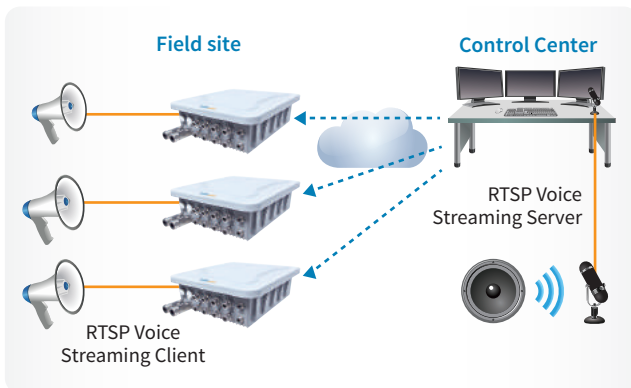
- Two DC24V outputs
- One AC100~240V Input

Internal One RS232/422/485 DB9 port

Internal One USB, and One SD socket for Storage

## VoIP Voice Broadcast

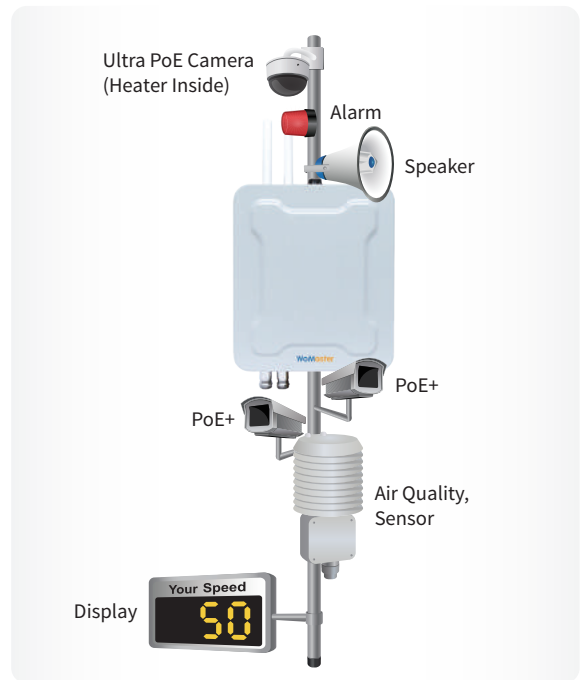
- RTSP voice streaming Server/Client for VoIP broadcast
- 1 to N VoIP broadcasting



## Optional Wireless Expansion

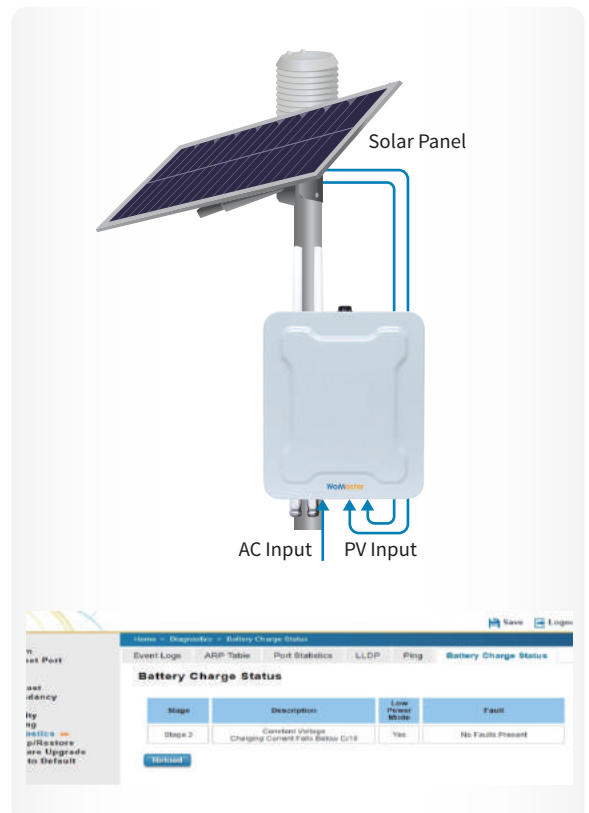
- mPCIe & SIM socket for wireless expansion
- SCB LTE Module and Antenna Kit
  - LTE Cat.4/6 Cellular Module
  - LTE+GPS Antenna on the top of the box
  - 300M(Cat.6)/150M(Cat.4) Downlink, 50M Uplink, FDD/TDD-LTE
- SCB Industrial WLAN Module
  - N-Type Antenna Socket on the top of the box
  - 5G/2.4G Qualcomm IEEE 802.11ac 2T2R MIMO, up to 866Mbps
  - WLAN AP/CPE mode

Weatherproof LTE+GPS Antenna



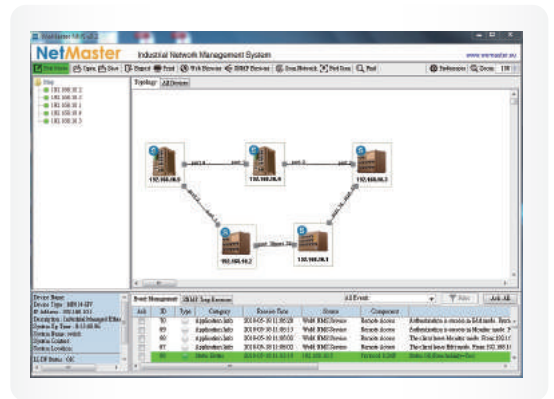
## Optional Basic Solar Kit

- 54V Battery Charge Control board for Solar power input
- Typical 48V/2.5AH Battery for power shortage
- Management Interface for Battery Status



## Management Features

- Various configuration paths, including WebGUI, CLI SNMP, LAN Utility (ViewMaster), and NMS (NetMaster)
- ViewMaster Utility, Remote configuration software utility
- Redundancy: WAN to LTE redundancy
- Diagnostic tool includes Radio LED, Ping, TFTP, SNMP Trap, E-mail Alert and System Log
- LTE watchdog, auto-reconnect cellular connection



## ITU-T G.8032 v1/v2 ERPS Ring Redundancy

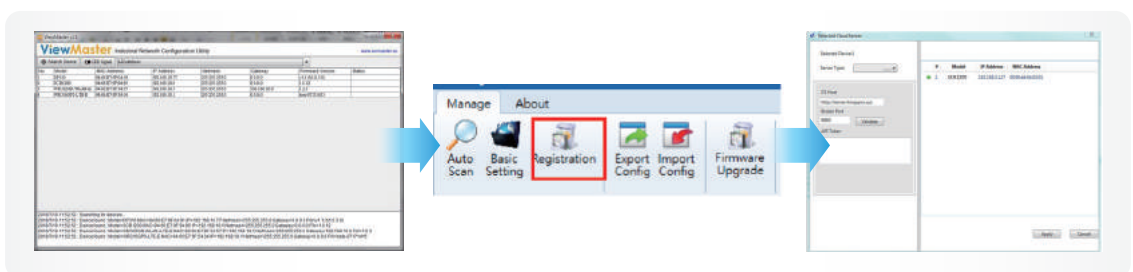
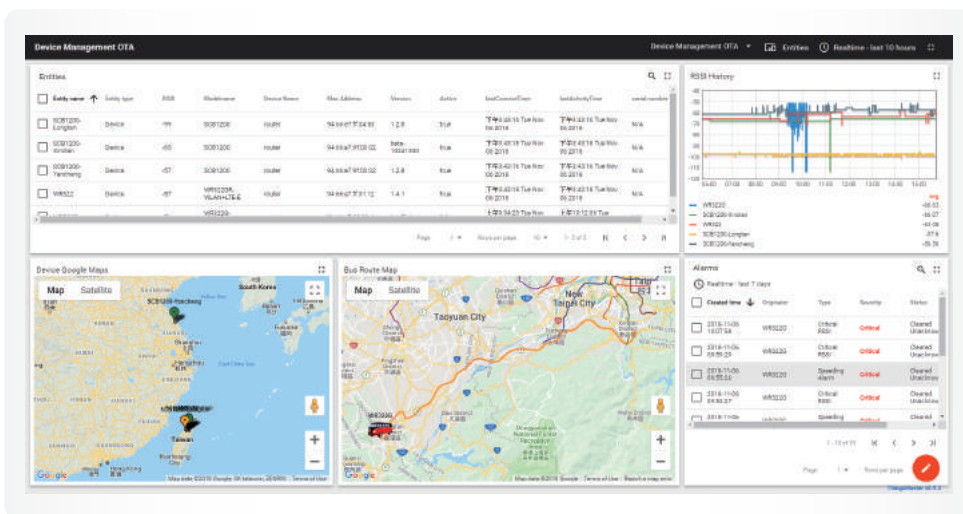
- An ITU standard Ring Redundancy Protocol
- Provide sub-50ms protection and recovery switching for Ethernet traffic
- Interoperate with 3rd party industrial switches and enhance recovery time STP/RSTP
- Efficient network interconnection and topology with ERPS chain, multiple chains

## Enhanced Cyber Security for Critical Application

- Firewall for traffic classification, port forwarding
- NAT, DMZ for LAN protection
- OpenVPN, IPsec for secure connection
- HTTPS/SSH secure login

## Device Management Over-the-Air

- Interactive monitoring dashboard and map to show the status, signal strength, and location of devices deployed
- Over-the-air batch device registration, configuration and firmware update
- Set alerts on critical events to prevent downtime (i.e signal strength is too low or temperature is too high)



Secured and Rugged LTE Router for IIoT

# Industrial IoT Cellular Edge Gateway

## WR302G/312G/322GR



- Single (WR312G) or dual (WR322GR) 4G LTE Cat.4 / Cat.6\* Routing
- One SIM + Micro SD or Dual SIM standby or Embedded SIM
- Wi-Fi networks (5G 802.11ac/a/n or 2.4G 802.11b/g/n)
- 2T2R Wi-Fi radio delivers up to 866Mbps high throughput
- 2-port Gigabit Ethernet Routing and Bridging
- One or Two RS232/422/485 DB9 ports for IIoT devices
- OpenVPN, IPsec for secured connection
- USB for easy field configuration and firmware upgrade
- Cellular to WAN redundancy, dual SIM backup
- Cellular to WLAN auto offload
- 1:1 NAT, port forwarding and NAPT for local traffic protection
- RIPv2\* static routing
- Built-in Cloud AWS Agent, Azure Agent, ThingsMaster Agent
- TACACS+ multi-user authentication for privileged user management
- -40°~75°C wide operation temperature
- EN50121-4 railway compliance

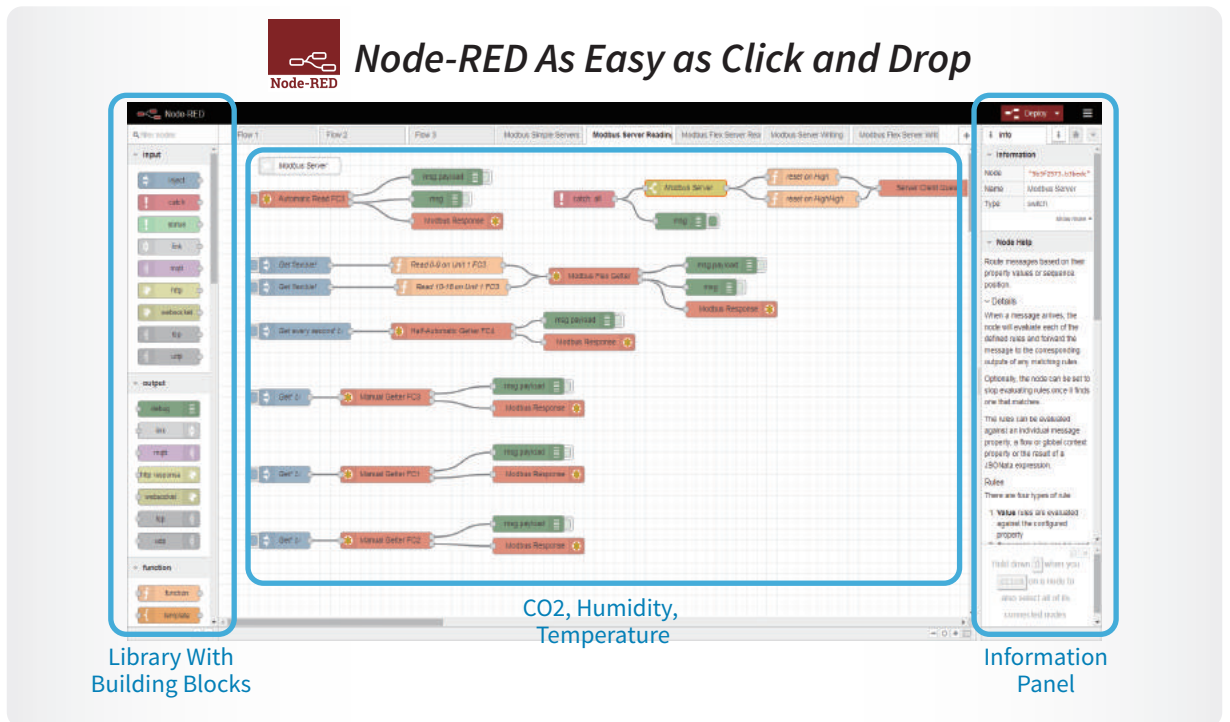
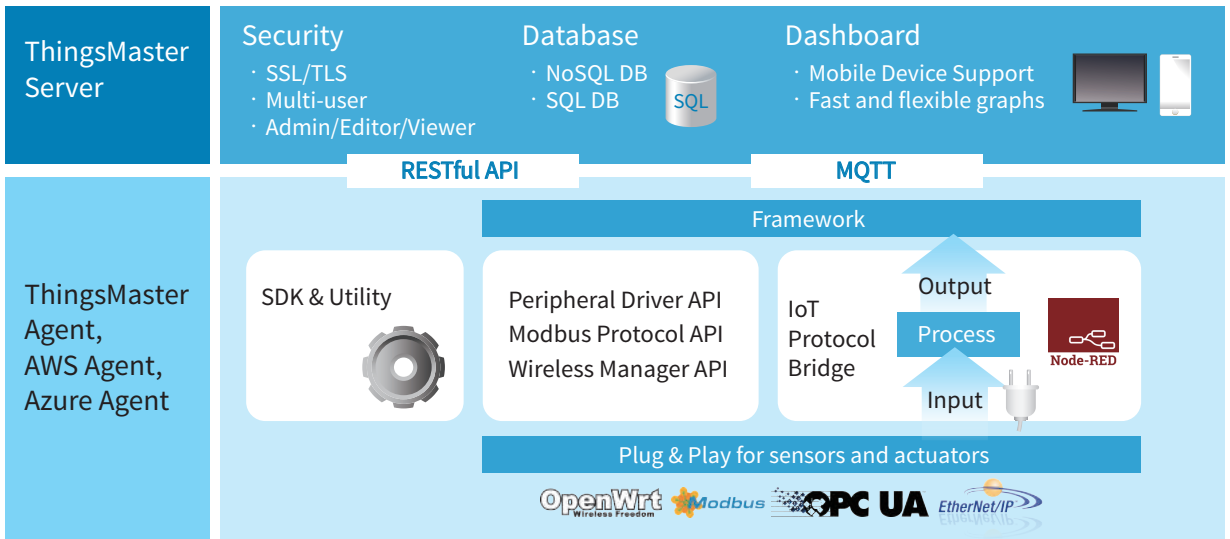


Model	WAN	LAN	Serial	Radio 1	Radio 2	USB	SD	SIM	GPS	DI/DO	Power Input	Temp.	Standard
WR302G	1xGE	1xGE	2xRS232/ 422/485	-	-	1	1	-	-	0/1	12/24/48VDC	-40~75°C	EN50121-4 EN61000-6-2/4 EN61000-4-12/ 16/17/18/29
WR312G-WLAN				Wi-Fi 2.4G 11n/5G 11ac	-	1	1	-	-	0/1			EN50121-4 EN61000-6-2/4 EN61000-4-12/ 16/17/18/29 Radio RED
WR312G-LTE				LTE Cat.4	-	1	1	1	-	0/1			
WR312G-LTE6*				LTE Cat.6	-	1	1	1	-	0/1			
WR322GR-WLAN+LTE				Wi-Fi 2.4G 11n/5G 11ac	LTE Cat.4	1	1	2	Yes	0/1			
WR322GR-WLAN+LTE6*				Wi-Fi 2.4G 11n/5G 11ac	LTE Cat.6	1	1	2	Yes	0/1			
Lite													
WR224-WLAN+LTE	1xFE	3xFE	-	Wi-Fi 2.4G 11n	LTE Cat.4	-	-	2	-	-	12/24V	-40~75°C	EN61000-6-2/4 Radio RED
WR214-WLAN				Wi-Fi 2.4G 11n	-	-	-	-					

# Industrial IoT Edge Computer / Gateway

Open Platform Software Architecture

- Linux OpenWRT LEDE (kernel v4.4)
- Latest Node-RED 0.19



Model	WAN	LAN	Serial	Radio 1	Radio 2	USB	SD	SIM	GPS	DI/DO	Power Input	Temp.	Standard
WR302G-EC	1xGE	1xGE	2xRS232/ 422/485	-	-	1	1	-	-	0/1	12/24/48VDC	-40~75°C	EN50121-4 EN61000-6-2/4 EN61000-4-12/16/17/18/29
WR312G-WLAN-EC				Wi-Fi 2.4G 11n/5G 11ac	-	1	1	-	-	0/1			EN50121-4 EN61000-6-2/4 EN61000-4-12/16/17/18/29 Radio RED
WR312G-LTE-EC				LTE Cat.4	-	1	1	1	-	0/1			
WR322GR-WLAN+LTE -EC				Wi-Fi 2.4G 11n/5G 11ac	LTE Cat.4	1	1	2	Yes	0/1			

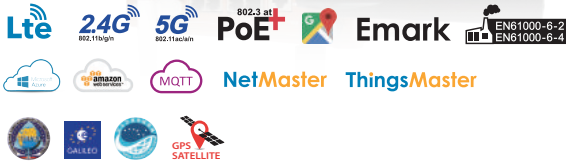


Integrate Cellular Router and 24V Boost PoE Switch for BUS / Vehicle

# Industrial Cellular Wi-Fi PoE Routing Switch

## WR329P Series

- LTE Cat.4/Cat.6, 2x2 MIMO, 150M/300M downlink and 50M uplink
- 5G/2.4G Wi-Fi for local coverage, up to 866Mbps bandwidth
- 8x Fast Ethernet PoE+ ports, up to 120W@70°C PoE power budget
- 12/24V to 54VDC Booster PoE
- 1x Gigabit Ethernet WAN port for uplink or NVR
- WAN to LTE Redundancy
- GNSS supports GPS/GLONASS/BeiDou/Galileo
- Periodically Report GPS data for Real time Location Tracking
- OpenVPN, IPsec, L2TP\*, GRE for secure connection
- Built-in Cloud AWS Agent, Azure Agent, ThingsMaster Agent
- EN50121-4 Railway compliance
- IEC61000-6-2/IEC61000-6-4 heavy industrial EMC
- Vehicle: E-mark compliance
- -40°~75°C wide operation temperature

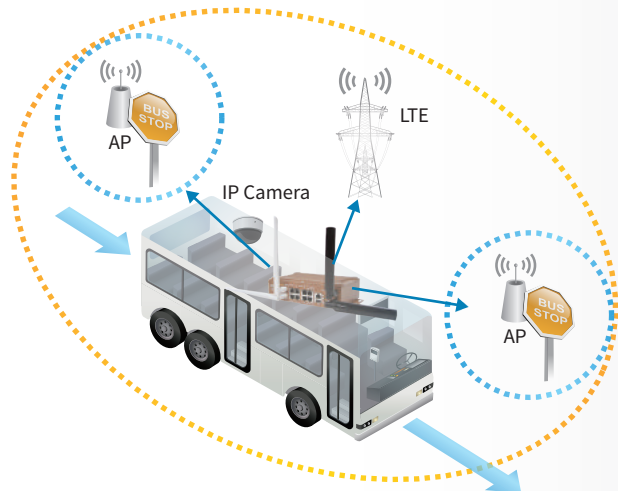


Model	Radio 1	Radio 2	Eth-WAN	Eth-LAN	USB	DI/DO	Temp.	SIM	eSIM(Optional)	GPS	Power Input
WR309	-	-	1xGE	8xFE	1	0/1	-40~75°C	0	-	-	8~32VDC
WR309P	-	-	1xGE	8xFE PoE	1	0/1	-40~75°C	0	-	-	8~32VDC
WA329	802.11ac	802.11ac	1xGE	8xFE	1	0/1	-40~75°C	0	-	-	8~32VDC
WA329P	802.11ac	802.11ac	1xGE	8xFE PoE	1	0/1	-40~75°C	0	-	-	8~32VDC
WR329-WLAN+LTE	802.11ac	LTE Cat.4	1xGE	8xFE	1	0/1	-40~75°C	2 Redundant	1	Yes	8~32VDC
WR329P-WLAN+LTE	802.11ac	LTE Cat.4	1xGE	8xFE PoE	1	0/1	-40~75°C	2 Redundant	1	Yes	8~32VDC

## Auto-Offload

When the BUS approaches to the main station, it will transmit the data of surveillance videos and traffic information to the station via Wi-Fi network of the station.

The Patented Auto-Offload technology allows moving devices to seamlessly switch Wi-Fi network to LTE network without stopping the communication.



# Industrial Cellular PoE Routing Switch

## WR316GPS series

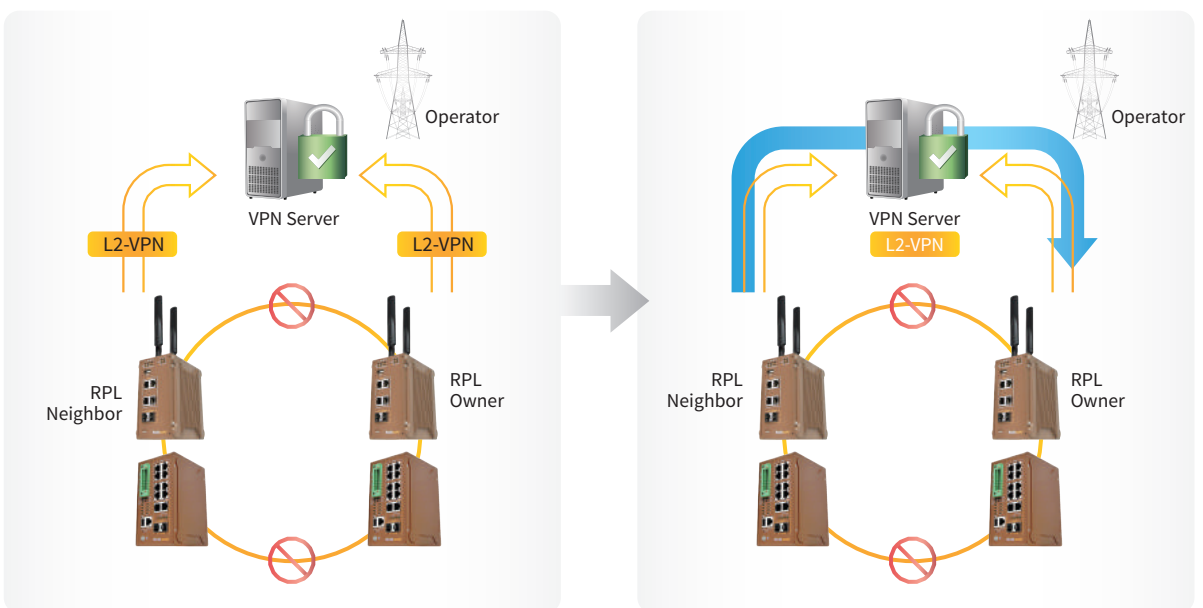
- High-speed LTE Cat.4 routing and dual SIM standby
- Full-Giga: 4x 1000M RJ45 Copper + 2x 100/1000M SFP Fiber
- 4-port IEEE PoE 802.3af/at 30W per port and 120W total PoE budget
- ITU-T G.8032 ERPS v2 Ring Redundancy
- Ring failure to LTE Redundancy
- VRRP redundancy
- OpenVPN, IPsec, L2TP for secured connection
- USB for easy field configuration and firmware upgrade
- Built-in Cloud AWS Agent, Azure Agent, ThingsMaster Agent
- Support TACACS+ multi-user authentication for privileged user management
- -40°~75°C wide operation temperature
- EN50121-4 railway compliance
- NetMaster- NMS system for individual node monitoring
- ViewMaster- Remote configuration software utility for distributed management



Model	Eth-LAN	PoE	Radio	USB	SD	SIM	DI/DO	Power Input	Temp.	Certification
WR316GPS-LTE	2xGF SFP	4xGE	LTE Cat.4	1	-	2	0/1	48/54 VDC	-40~75°C	EN50121-4 Radio RED

## ERPS Backup by Wireless Network

ITU-T G.8032 ERPS v2 is a crucial deployment in the industrial redundant network. However it can only protect in one link failure of a Ring. If there is more than one link failed, the ERPS Ring will still break. The patented Wireless ERPS Backup technology uses L2 VPN to provide the wireless L2 backup mechanism.





# Ruggedized Ethernet L2/L3 Switches



## ITU-T G.8032 v1/v2 ERPS Ring Redundancy

- Provide sub-50ms protection and recovery switching for Ethernet traffic
- Interoperate with 3rd party industrial switch and still remain fast recovery time
- Interoperate with commercial switch instead of STP/RSTP
- Efficient network interconnection and topology with ERPS Chain, multiple chains

## Management Features

- Various configuration paths, including WebGUI, CLI, Telnet, SNMP v1/v2c/v3 and RMON
- IEEE 1588v1/2 PTP time management, LLDP topology control
- Modbus/TCP, Ethernet/IP for factory automation
- ViewMaster for LAN devices management, and NetMaster for NMS Management

## Enhanced Cyber Security for Critical Application

- L2-L7 IPv4/IPv6 Access Control List (ACL)
- DHCP Snooping, IP Source Guard, Dynamic ARP Inspection
- 802.1Q VLAN, Private VLAN, Advanced Port Security, Multi-Level user passwords
- HTTPS/SSH/SFTP, 256-bit encryption
- 802.1X MAB for non-802.1X compliant end devices
- RADIUS/TACACS+ centralized password authentication

## Extreme PoE Capability

- 8-port IEEE 802.3af/at compliant PoE, up to 30W/port
- Up to 100W system power budget at 70°C operating temperature
- Complete PoE management including per-port Power Budget Control, PoE Scheduling and PoE Status



Model	PoE	Ethernet Cooper	Ethernet Fiber	L3 Managed	L2 Managed	ERPS v2	USB	Power Input	Vertical Standard
DS101	-	1xFE	1xFE SC/ST	-	-	-	-	12/24/48V DC	EN50121-4
DS105	-	5xFE	-	-	-	-	-	USB 5V/24V DC	Heavy Industrial
DS108	-	8xFE	-	-	-	-	-	12/24/48V DC	Heavy Industrial
DS108F	-	6xFE	2xFE SC/ST	-	-	-	-	12/24/48V DC	Heavy Industrial
DS208	-	8xGE	-	-	-	-	-	12/24/48V DC	Heavy Industrial
DS210	-	8xFE + 2xGE	-	-	-	-	-	12/24V DC	EN50121-4
DS310	-	8xFE	2xGE Combo	-	Yes	Yes	1	24/48V DC	EN50121-4
DS406	-	4xGE	2xGE SFP	-	Yes	Yes	1	12/24/48V DC	EN50121-4
DS409	-	6xGE	3xGE Combo	-	Yes	Yes	1	12/24/48V DC	EN50121-4
DS410F	-	2xGE	6xGE SFP, 2xGE Combo	-	Yes	Yes	-	12/24/48V DC	EN50121-4
DS412	-	8xGE	4xGE SFP	-	Yes	Yes	1	12/24/48V DC	EN50121-4
DS612	-	8xGE	4xGE SFP	Yes	Yes	Yes	1	12/24/48V DC	EN50121-4
DP101	1xFE 802.3 bt	-	1xFE SC/ST	-	-	-	-	54V DC	EN50121-4
DP208	8xGE 802.3 at	-	-	-	-	-	-	48/54V DC	Heavy Industrial
DP210v2	8xFE 802.3 at	2xGE	-	-	-	-	-	12/24V DC	EN50121-4
DP210	8xFE 802.3 af	2xGE	-	-	-	-	-	12/24V DC	EN50121-4
WR309P	8xFE 802.3 at	1xGE	-	-	Yes	-	1	12/24V DC	EN50121-4
DP310	8xFE 802.3 at	-	2xGE Combo	-	Yes	Yes	1	48/54V DC	EN50121-4
DP406	4xGE 802.3 at	-	2xGE SFP	-	Yes	Yes	1	48/54V DC	EN50121-4
DP412	8xGE 802.3 at	-	4xGE SFP	-	Yes	Yes	1	48/54V DC	EN50121-4
DP612	8xGE 802.3 at	-	4xGE SFP	Yes	Yes	Yes	1	48/54V DC	EN50121-4

# Railway M12 PoE L2/L3 Switch

## 2 Giga Link Bypass Ports

- Link Bypass function provides power fail safe solution

## Management Features

- Various configuration paths, including WebGUI, CLI, Telnet, SNMP v1/v2c/v3 and RMON
- IEEE 1588v1/2 PTP time management, LLDP topology control
- Modbus/TCP, Ethernet/IP for factory automation
- M12 USB for easy field configuration and firmware update
- ViewMaster for LAN devices management and NetMaster for NMS Management

## ITU-T G.8032 v1/v2 ERPS Ring Redundancy

- Provide sub-50ms protection and recovery switching for Ethernet traffic
- Interoperate with 3rd party industrial/commercial switch and instead of STP/RSTP still remain fast recovery time
- Efficient network interconnection and topology with ERPS Chain, multiple chains

## Enhanced Cyber Security for Critical Application

- L2-L7 IPv4/IPv6 ACL, DHCP Snooping, IP Source Guard, DAI
- 802.1Q VLAN, Private VLAN, Advanced Port Security, Multi-Level user passwords
- HTTPS/SSH/SFTP, 256-bit encryption, 802.1X MAB, RADIUS/TACACS+

## Extreme PoE Capability

- 8-port IEEE 802.3af/at compliant PoE, up to 30W/port
- Up to 100W system power budget at 70°C operating temperature
- Complete PoE management including per-port Power Budget Control, PoE Scheduling and PoE Status

## Rugged Design for Surveillance in Rail, Rolling Stock applications

- EN50155/IEC61373 railway certification
- Railway 110VDC(77~137.5V) or 54V DC(46~57V) or 24/48/110V DC(16.8~137.5V) on-board power design
- Outstanding mechanical design with good heat dissipation and lightweight
- Rugged M12 connectors and -40~70°C wide operating temperature for harsh environments



Model	PoE Cooper	Ethernet Cooper	L3 Managed	L2 Managed	Bypass	ERPS v2	USB	Power Input	Vertical Standard
MP310	7xFE+1xGE 802.3at	2xGE(Bypass)	-	Yes	Yes	Yes	1xM12	110V DC(HV); 48/54V DC(MV)	EN50155
MP414	8 x GE 802.3at	4xGE+2xGE(Bypass)	-	Yes	Yes	Yes	1xM12	110V DC(HV); 48/54V DC(MV); 24/48/110V DC(WV)	EN50155
MP614	8 x GE 802.3at	4xGE+2xGE(Bypass)	Yes	Yes	Yes	Yes	1xM12	110V DC(HV); 48/54V DC(MV); 24/48/110V DC(WV)	EN50155

# Rackmount L2/L3 Switch

## 10G High Throughput Ethernet Switching

- 52-port Ethernet, including 48-port Gigabit Ethernet and 4-port 1/10GbE dual speed SFP+
- 131Mbps maximum forwarding rate, and 176Gps switching capacity
- 32K MAC address table, and 4MBytes packet buffer

## Enhanced Cyber Security for Critical Applications

- ACL for L2/L3/L4, IPv6 ACL for L3/L4
- IP Source Guard, DAI, DHCP Snooping, 802.1X/RADIUS, TACACS+
- Port MAC secure learning, Private VLAN/IP Security/Port Security
- Private VLAN/IP Security/Port Security

## Dynamic Routing with Redundancy Protection

- IPv4 and IPv6 routing: OSPF, OSPFv3, BGP4, and ECMP
- Multicast routing features for IGMP v1/v2/v3, PIM-DM/SM, MLD v1/v2 and PIM-DM6/SM6
- VRRP guarantees sustainable routing in a single point of failure

## Management Features

- Various configuration paths, including WebGUI, CLI, SNMP and RMON
- IEEE 1588v1 PTP time management, LLDP topology control
- USB for easy field configuration and firmware update, ViewMaster for LAN devices

## Rugged Design for Wayside Network Switching with Wide Power Input Range

- IEC61850/IEEE1613/EN50121-4 compliance for power substation and railway trackside
- NEMA TS2 compliance for wayside traffic control assemblies



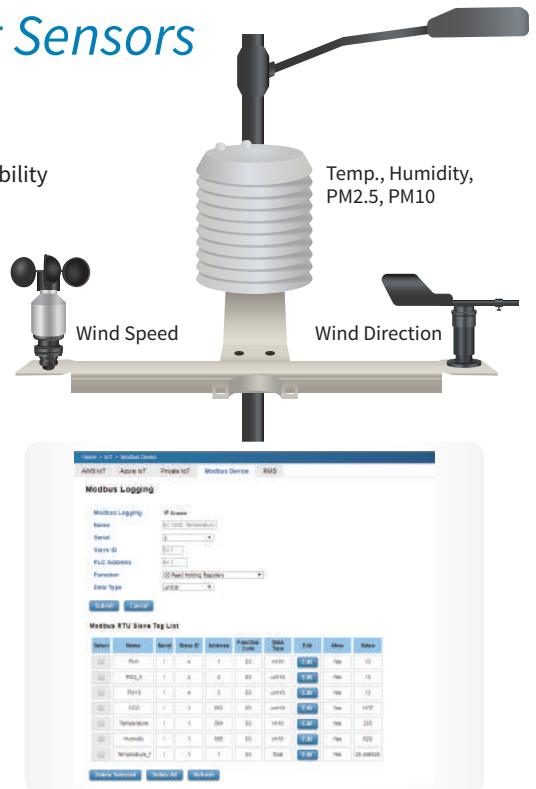
Model	Cooper	Fiber	L3 Managed	L2 Managed	USB	Power Input	Vertical Standard
RS328	24xFE	4xGE Combo	-	Yes	Yes	AC 110/220V	NEMA TS2/EN50121-4
RS428v2	20xGE	4x2.5GE + 4xGE Combo	-	Yes	Yes	AC110/220V or 88~300VDC	EN50121-4
RS752	48xGE	4x1GE/10GE SFP+	Yes	Yes	-	2xAC 110/220V	-

# Weatherproof Environment Sensors

- Weatherproof Shelter for raining or snow
- Multiple sensor parameters
- Integration of independent and high sensibility parameters
- 2-wire RS485 standard Modbus-RTU protocol for high compatibility

## Integration With Smart City Box

- 24VDC power output from SCB Plug and Play
- Sensor device address modification



Sensor	Specification	Location
PM2.5	Laser Detection Detection range : 0-1000ug/m <sup>3</sup> Resolution : 0.1ug/m <sup>3</sup> Accuracy level : <±10% Operation: -40~80°C, 0-95%RH	Embedded
PM10	Laser Detection Detection range : 0-1000ug/m <sup>3</sup> Resolution : 0.3ug/m <sup>3</sup> Accuracy level : <±10% Operation: -40~80°C, 0-95%RH	Embedded
Temp.	Detection range: -40~+80°C Accuracy level : ±0.5°C(25°C)	Embedded
Humidity	Detection range: : 0-100%RH : Accuracy level : ±3%RH	Embedded
Wind Speed	Detection range : 0-60m/s Accuracy level : ±1m/s Operation: -40~80°C, 15-95%RH	External
Wind Direction	Detection range : 0-360°(16 Direction) Accuracy level : 22.5° (1 Direction) Operation: -40~80°C, 15-95%RH	External
ES101 (Soil pH)	Power Input: 12-24V DC Power Consumption: <0.15W (@12V DC, 25C) Accuracy: +/- 0.5pH Detection Range: 0-14pH Output: RS485 (Modbus) Operation: 0~65°C Protection: IP65	External
ES101 (Noise)	Power Input: 12-24V DC Detection Range: 30~130dB Frequency Range: 35Hz~20k Hz Output: RS485 (Modbus) Power Consumption: 0.4W Operation: -20~60°C Protection: IP65	External

Model	Specification
ES106	Integrated Sensors- PM2.5, PM10, Temperature, Humidity, Wind Speed, Wind Direction, Output : RS485
ES104	Integrated Sensors- PM2.5, PM10, Temperature, Humidity, Output : RS485
ES102	Integrated Sensors- Wind Speed, Wind Direction, Output : RS485



# Build Your Private IIoT Platform for Industrial Plant Networks

**ThingsMaster** is an intelligent private IIoT platform that fits for your private IIoT platform requirement. It provides flexible and secured access from any web browser either in PC or smart phone. It also supports RTSP streaming which allows you to broadcast from cloud to remote gateways via Voice over IP. Field site video surveillance is also supported from the cloud for environment monitor via IP cameras. ThingsMaster enables fast, flexible, secured dashboard for multi-user and supports MQTT and RESTful APIs for easy access to data from an IIoT gateway. It is also designed for central network management such as device configuration, firmware version upgrade, fault alert and event records.

### User Management

Provides multi-user management, each logged-in user has his own privilege.

### Configurable Time Range and Refresh Interval

### Fast and Flexible Graphs Options

Fast and flexible client side graphs with many options. Panel plugins for different ways to visualize metrics and logs.

### Easy Add Graph Panel

From heat maps to histograms. A variety of display options to help data visualization

### Analyze Logged Data

Show histogram of time series data.

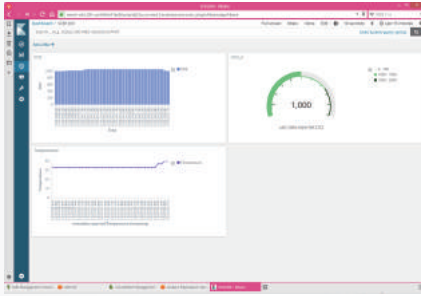
### Alert

Visually define alert rules for important metrics

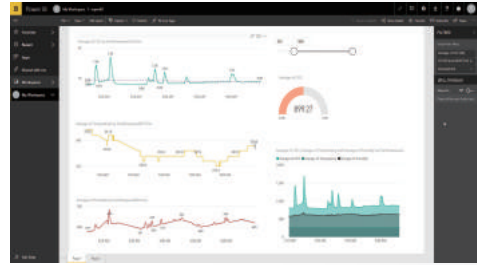
# Cloud Management over ThingsMaster

- Support Amazon AWS & Microsoft Azure cloud service
- Support proprietary ThingsMaster cloud service
- Support Modbus Tag to collect data from Modbus devices
- Interactive monitoring dashboard and map shows the status, signal strength, and location
- Support over-the-air batch device registration, configuration and firmware update
- Set alerts on critical events to prevent downtime (i.e signal strength is too low or temperature is too high)
- Node-RED like flow-based programming

## Amazon and Microsoft Dashboard



- Powered by AWS and Azure
- AWS Kibana Dashboard
- Azure Power BI Dashboard



## Ubiquitous Applications

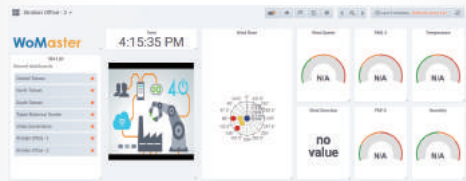
### Smart Energy Solution

Monitor meter voltage, frequency, power, current, energy consumption, etc.



### Industrial 4.0 Solution

Monitor machine downtime, speed, utilization rate, yield rate, productivity, etc.



### Smart Farming Solution

Monitor silos weights, silos temperature, silos humidity, etc



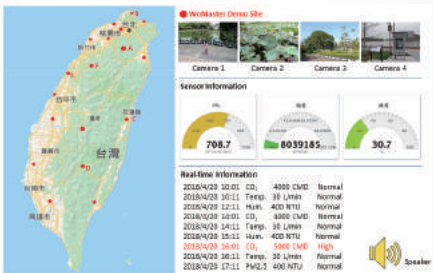
### Smart Bus Tracking Solution

Monitor bus route, speed, passenger count, fuel etc.



### Smart Environment Solution

Monitor PM1/2.5/10, CO2, temperature, humidity, radiation, wind speed, etc.



### Smart Metering Solution

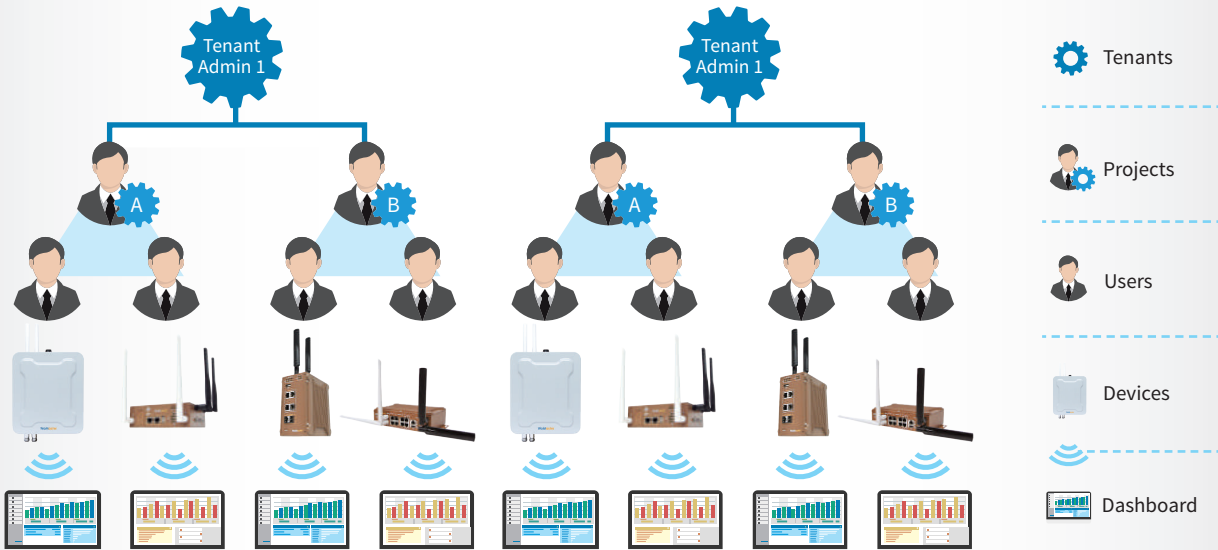
Monitor district energy consumed, water consumed, etc.





# ThingsMaster OTA - Group Management

- Group Management**
- Multi-Tenant Architecture
  - Grouping and organize tasks for IoT deployment
  - Each user has his own Dashboard



## Secured Multi-Sites Management

- N to N VPN
- Latest TLS encryption and X.509 authentication
- Demo sites:



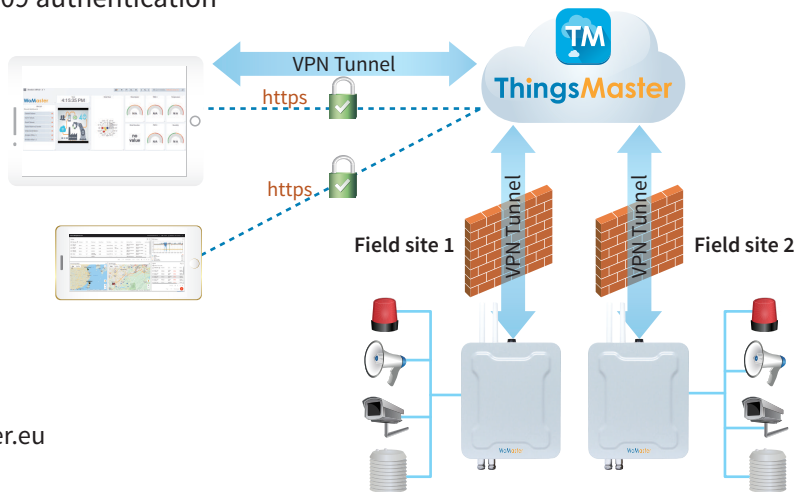
ThingsMaster

Username: womaster  
Password: womaster101

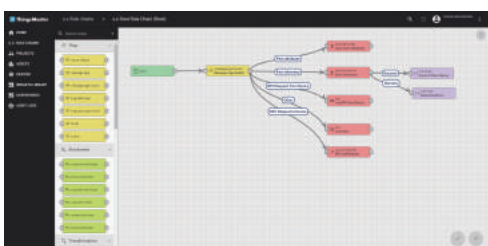


OTA

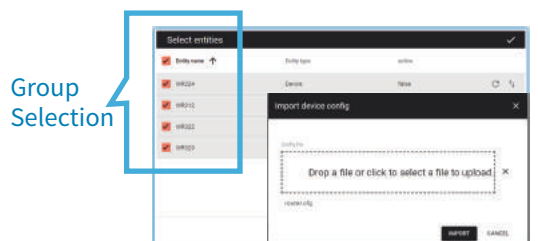
Username: womaster@womaster.eu  
Password: womaster101



## Rule Chain



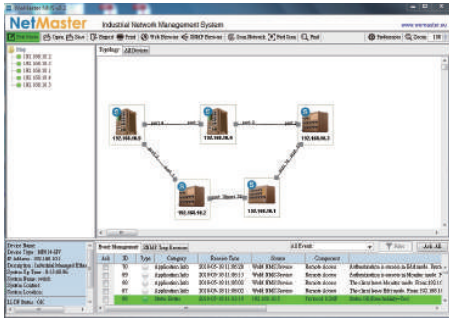
## Batch Configuration and Reboot OTA





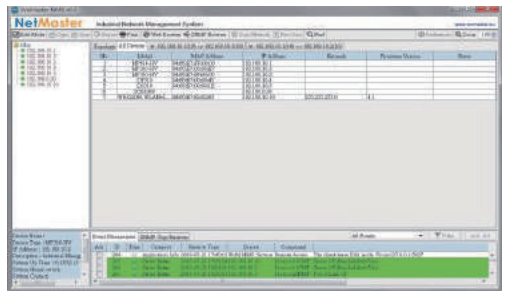
# NetMaster

## Automatic Discover and Intuitive Visualization of Network Devices and Topology



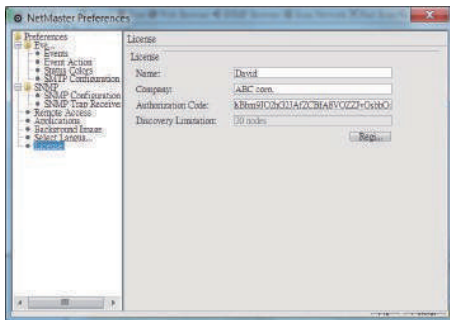
- Continuous collection of traffic statistics for analysis and reporting
- Periodic backup device configuration (auto configuration restoration while replacing a failed device)

## IP Device Lists, Device Information, Fault Alert and Event Logs



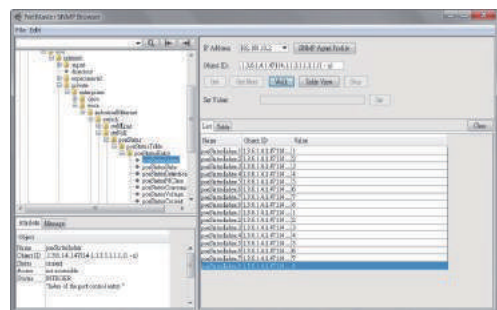
- Real-time monitoring and notification of events, alarms and thresholds through SMS, email, and SNMP trap

## High Scalability for up to 2000 network nodes by license upgrade



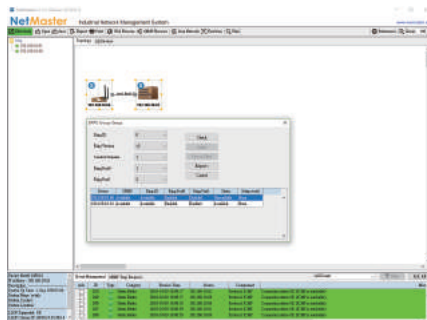
- Discovers and visualizes network devices and physical connections automatically, up to 2000 devices
- Centralized batch configuration, firmware management, and ring configurations

## MIB Browser and Compiler for 3rd Party Device Management



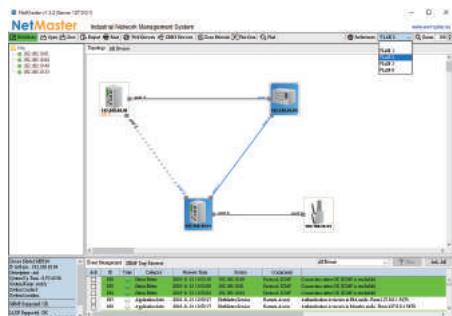
- Supports 3rd-party devices with MIB compiler and MIB browser
- Support English, Russian, Chinese multi-languages

## ERPS Group Settings over NetMaster



- ERPS Group Settings for Ring ID, Ring Version, Control Channel, and Ring Ports
- ERPS Visualization. Display ERPS Major ring and Sub ring info.

## VLAN Visualization over NetMaster



- Devices, ports, and links with the VLAN ID will be colored -coded
- Device in Blue, trunk port/access port (Blue/Orange), link in Blue/Orange/Grey for trunk/access/mixed port

# Master in IIoT World

With over 20 years of industrial IoT market experience, WoMaster Group is deemed as one of the leading IoT providers in Industrial world. The company is joint ventured by global listed Industrial companies including QNAP for industrial computing and AIoT solutions, HMS Industrial Networks Group for Industrial Automation and AnyBus technology, and HolyStone Group for Industrial Electronics Components and Touch IC, for a clear vision to provide professional and innovative solutions and services for the booming IIOT market.

In China, WoMaster Group joint ventured with Jiangsu Yueda Group, the top 1 conglomerate in North Jiangsu, to setup WoM China for designing pioneer Industrial IoT and Smart City solutions.

Based on the core belief that the real success derived only from long term trust, WoMaster is devoted to design and manufacture high quality industrial products for critical applications such as railway, power and utility, intelligent transportation and smart city surveillance. From networking devices to all-in-one communication station, WoMaster adds value by the hardened design, public and private cloud platform, high levels of cyber security protection, and customer oriented solutions.



## Reliability Lab

To verify product design for vertical certificates, WoMaster setups in-house product verification labs where required environmental tests are conducted for meeting or exceeding industrial standards such as NEMA TS2, EN50155, IEC61850, eMark, or DNV. Due to fulfilling extensive test plans and procedures, we can guarantee safety, compatibility, stability and longevity of the products in highly critical applications, such as railway, heavy industries, traffic control, etc.



**WoMaster**  
Global Website



**YouTube**  
Feature Demo



**in**  
News

**WoMaster Group** info@womaster.eu / support@womaster.eu

### WoM Europe

Carrer Tallador, 37, Santa Coloma de Cervello, Barcelona, Spain  
tel : 34-662-296-449

### WoM UK

Units 6-7 Kingfisher Business Park,  
Arthur Street, Redditch, Worcestershire,  
B98 8LG. United Kingdom  
tel : 44-1527 529774

### WoM Middle East

Office 1203, 12th Floor, Silver Tower,  
Business Bay , Dubai, United Arab  
Emirates  
tel : +971 4 564 6070

### WoM ASIA

1F., No.185-3, Kewang Rd., Longtan  
Dist., Taoyuan 325, Taiwan  
tel : 886-3-252249

### WoM France

200, rue Georges Bret, 27130 Verneuil-  
Sur-Avre, France

### WoM China

江苏省盐城市经济开发区希望大道南  
路5号1号楼801室 邮编 224000  
tel : 86-515 8838 3599