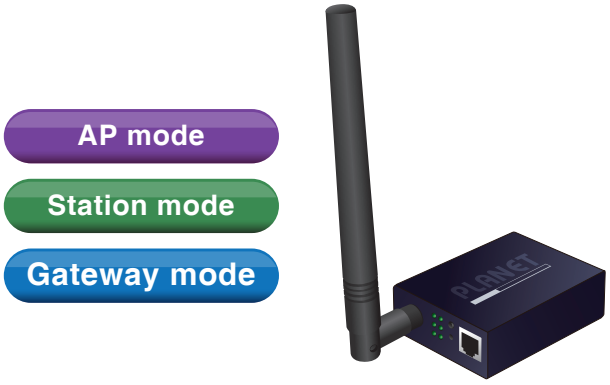
802.11ah HaLow Wi-Fi Bridge/Station

Outstanding Features of PLANET HaLow AP

PLANET HaLow Wireless Access Point combines advanced technology with exceptional versatility, making it the ideal choice for demanding network applications. Its key features include:

- **Flexible Deployment Options**: Supports wireless **AP**, **Station**, and **Gateway** modes to meet various network demands.
- **Extreme Environmental Adaptability**: Operates reliably in temperatures ranging from -20°C to 60°C, ideal for industrial applications.
- **Advanced Data Encryption**: Equipped with WPA3 technology to ensure secure data transmission, suitable for enterprise and public networks.
- **Powerful Centralized Management**: Seamlessly integrates with PLANET NMS-AIoT platform, enabling management of over 3,000 devices for IoT and smart city applications.
- **Reliable IoT Solution**: Delivers high stability and scalability for scenarios like smart cities and industrial automation.



Multiple Operation Modes
HLB-100

Hardware

- Supports IEEE 802.11ah wireless technology.
- 1 x 10/100 RJ45 port
- 1 x RS485 serial interface
- 1 x pair button
- 1 x reset Button
- 3 x LED indicators for the Strength Signal
- LED indicators for Station, Power and LNK/ACT statuses

Multiple Operation Modes and Wireless Features

- Multiple operation modes: AP, gateway and station
- Low power wide area network (LPWAN) connectivity
- Supports WPA3 personal encryption.
- Supports up to 1km wireless range.

Router Features

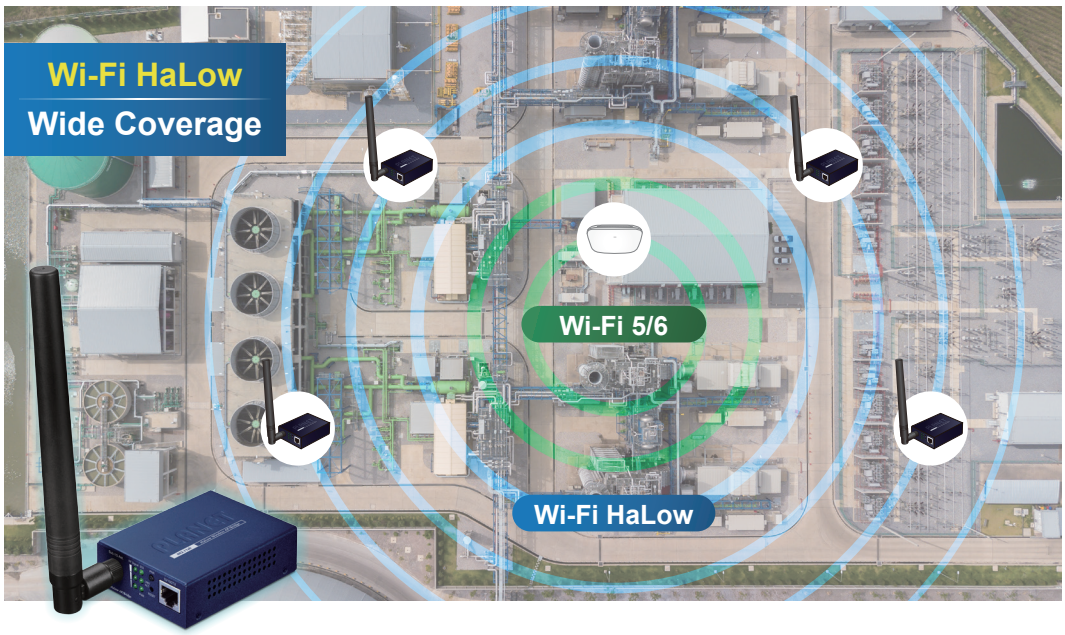
- Bandwidth control per IP address to increase network stability
- Supports NAT Routing, IP Routing or Bridge mode.
- Supports routing / dynamic routing (RIPv1/v2) and VLAN tagging (802.1Q).
- Supports DHCPv6 and DHCP client/server.

Easy Deployment and Management

- Supports management by using PLANET NMSViewerPro and CloudViewerPro app.
- Easy discovery by PLANET Smart Discovery
- Self-healing mechanism through system auto reboot setting
- System status monitoring through remote syslog server

Benefits of HaLow Technology

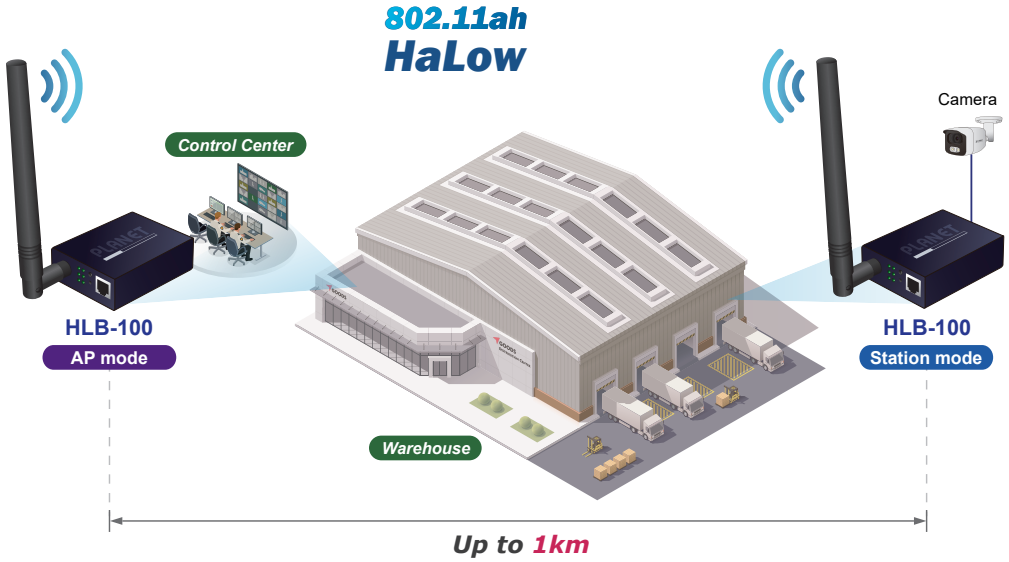
With its exceptional range and stable transmission, PLANET HaLow Wireless AP is ideal for large-area applications. Whether for smart city deployments, industrial automation, or wide-area surveillance, it ensures reliable connectivity even in challenging environments. Its WPA3 encryption further enhances security, protecting data transmissions from potential breaches and ensuring peace of mind for users.



Long Range, Low Power Solution for IoT Connectivity

PLANET HaLow Wireless AP redefines IoT connectivity with its ultra-long range of up to 1km and energy-efficient design. Operating on low power, it ensures extended device runtime, making it ideal for IoT applications in smart cities, agriculture, and industrial automation.

With support for **AP**, **Station**, and **Gateway** modes, the HaLow AP offers versatile deployment options, while its advanced WPA3 encryption safeguards data transmission across networks. Designed to withstand extreme environments and equipped with wall-mount installation, it delivers reliable, secure, and flexible connectivity for a wide range of IoT use cases.



Robust and Versatile Design

PLANET HaLow Wireless AP supports wall-mount installation, making it suitable for indoor use. The device's ability to adapt to diverse conditions and environments is further enhanced by its energy-efficient and low-power design, delivering long-lasting performance.

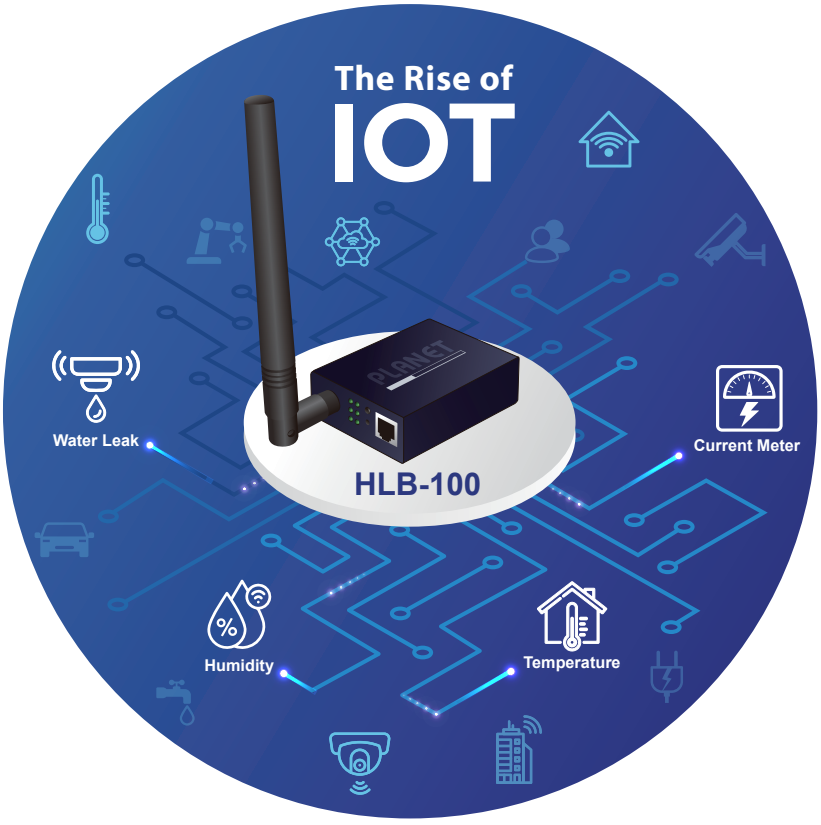
Enhanced Security with WPA3

By adopting the advanced WPA3 encryption protocol, PLANET HaLow Wireless AP ensures that data remains secure and protected from unauthorized access. This makes it a perfect fit for enterprises and public deployments where security is paramount.

Seamless Integration with NMS-AIoT for Enhanced IoT Management

PLANET HaLow Wireless AP is fully compatible with PLANET NMS-AIoT platform, enabling centralized management of IoT networks. By integrating with NMS-AIoT, users can monitor and manage over 3,000 sensing devices across wide areas through an intuitive dashboard and map-based interface.

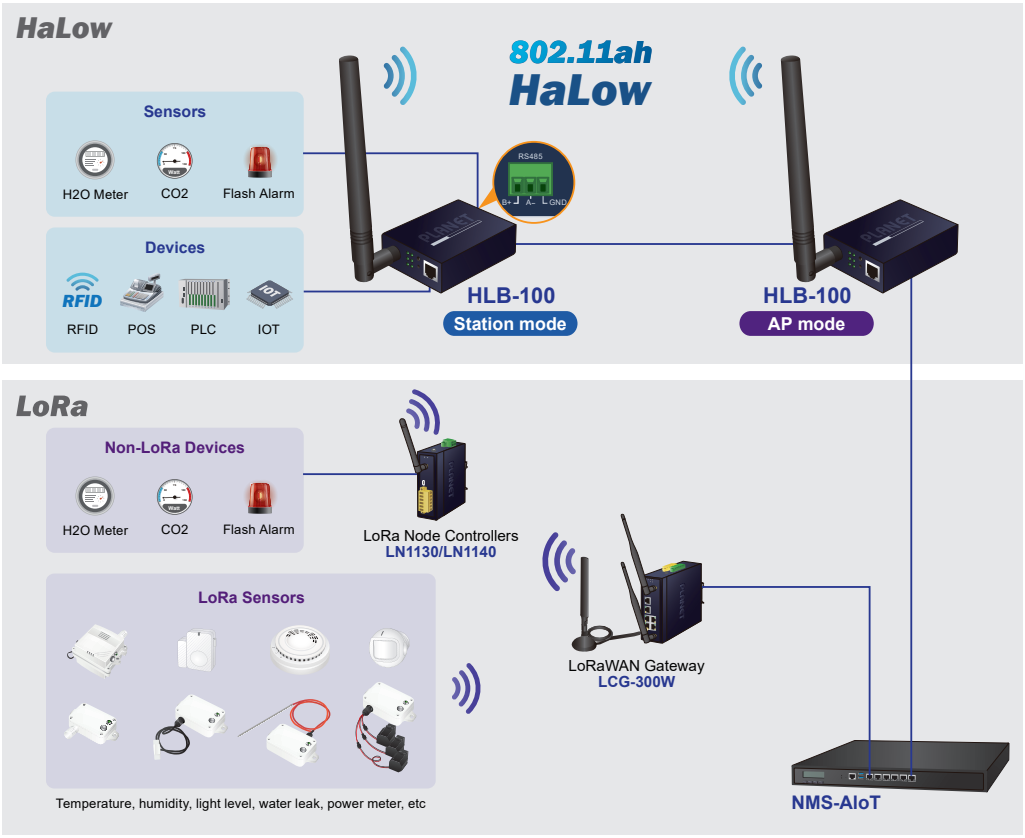
The HaLow AP's long-range capabilities and energy-efficient design perfectly complement NMS-AIoT's AI edge computing, ESG energy management, and cybersecurity features. Together, they provide a robust and scalable solution for enterprises looking to optimize IoT operations with sustainability and security at the forefront.



Applications

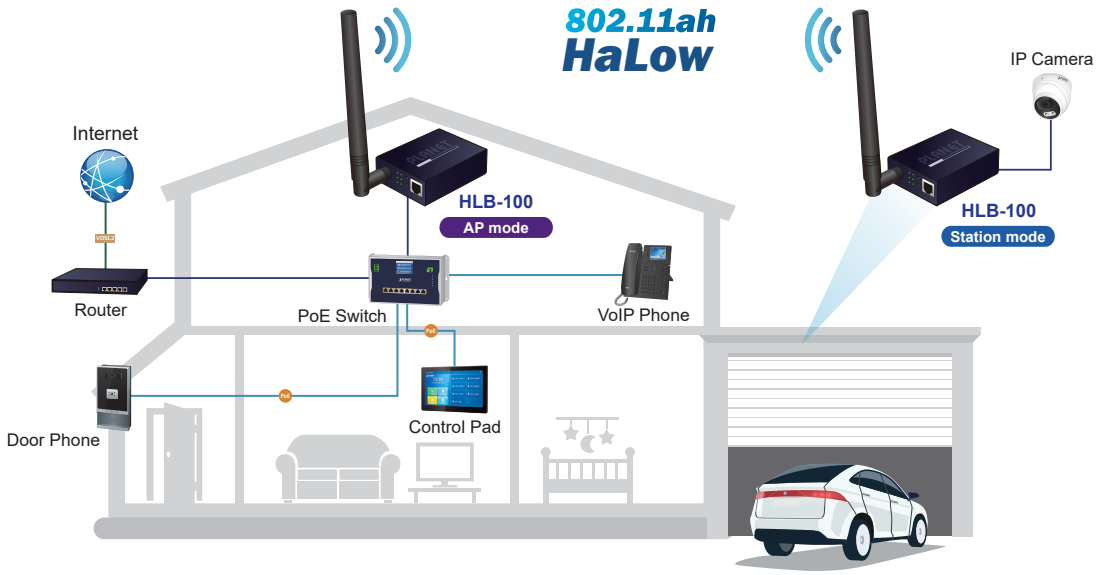
Seamless Integration of HaLow AP with NMS-AIoT for Efficient IoT Management

The HaLow AP (HLB-100) combined with the NMS-AIoT management platform offers a powerful, long-range IoT deployment solution. Supporting up to 1km wireless coverage, the HLB-100 connects various IoT devices to centralize data monitoring and management. By linking HaLow AP to the NMS-AIoT platform through its Ethernet port, businesses can streamline real-time device status updates, alerts, and analytics within one comprehensive interface. This setup is ideal for smart buildings, industrial automation, and energy management, providing robust control over IoT deployments.



Reliable Home Surveillance with Long-Range HaLow Connectivity

The HaLow AP (HLB-100) provides a practical solution for extending your home surveillance system's coverage. With its long-range wireless capability of up to 1km, the HLB-100 ensures stable connectivity to security cameras placed across large areas, such as backyards, garages, and driveways. By connecting IP cameras to the HLB-100's Ethernet port, homeowners can enable real-time video monitoring and recording. It delivers reliable performance, ensuring continuous operation for enhanced safety and peace of mind.



Product Specifications

Product	HLB-100
Hardware Specifications	
Interfaces	1 10/100BASE-TX RJ45 port including 1 LAN/WAN port Supports WAN mode and LAN mode, configurable via software.
Antenna Connector	1 × 50 Ω SMA Connector (Center Pin: SMA Female)
Serial Interface	1 x RS485 serial interface
Button	1 x reset button Press over 5 seconds to reset the device to factory default 1 x pair button
Dimensions (W x D x H)	94 x 70.3 x 26.2 mm
Weight	223g
Power Requirements	5V 2A
Power Consumption	2W
Installation	Wall-mount
LED Indicators	Power, station, strength signal
Wireless Interface Specifications	
Standard	IEEE 802.11ah (Wi-Fi HaLow) Compliance with regional regulatory requirements (FCC, ETSI)
Band Mode	Sub-1 GHz frequency operation
Frequency Range	868 MHz: European Union 902–928 MHz: North America
Operating Channels (US)	**Sub1G:** 1MHz 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51 (Channels) 2MHz 2,6,10,14,18,22,26,30,34,38,42,46,50 (Channels) 4MHz 8,16,24,32,40,48 (Channels) 8MHz 12,28,44 (Channels)
Operating Channels (EU)	**Sub1G:** 1MHz 1, 3, 5, 7, 9

Max. Transmit Power (dBm)

Bandwidth	MCS 0 Typ. (dBm)	MCS 7 Typ. (dBm)	MCS 0 Range (dBm)	MCS 7 Range (dBm)
1MHz	21	17	20 ~ 22	16 ~ 18
2MHz	21	17	20 ~ 22	16 ~ 18
4MHz	21	17	20 ~ 22	16 ~ 18
8MHz	21	17	20 ~ 22	16 ~ 18

Receive Sensitivity

Bandwidth	MCS 0 (dBm)	MCS 1 (dBm)	MCS 2 (dBm)	MCS 3 (dBm)	MCS 4 (dBm)	MCS 5 (dBm)	MCS 6 (dBm)	MCS 7 (dBm)
1MHz	-105	-102	-99	-96	-93	-89	-88	-87
2MHz	-103	-100	-97	-94	-90	-87	-85	-84
4MHz	-101	-97	-95	-91	-88	-84	-83	-81
8MHz	-97	-93	-91	-88	-85	-80	-79	-77

Software Features	
LAN	Static IP / Dynamic IP
Wireless Mode	■ Gateway ■ Access Point ■ Station
Channel Width	1MHz, 2MHz, 4MHz, 8MHz
Encryption Security	WPA3 Personal
Wireless Security	Enable/Disable SSID Broadcast
Status Monitoring	Device status, wireless client List PLANET Smart Discovery DHCP client table System Log supports remote syslog server
Management	
Basic Management Interfaces	Web browser SNMP v1/v2c PLANET Smart Discovery utility and NMS controller supported

Secure Management Interfaces	TLSv1.2, SNMP v3
System Log	System Event Log
Others	Setup wizard Dashboard System status/service Statistics Connection status Auto reboot/Diagnostics Remote management through PLANET DDNS/Easy DDNS Configuration backup and restore Supports IGMP Proxy. Supports UPnP. Diagnostics
Central Management	PLANET NMSViewerPro, PLANET CloudViewerPro
Environment & Certification	
Temperature	Operating: -20~ 60 degrees C Storage: -40 ~ 70 degrees C
Humidity	Operating: 10 ~ 90% (non-condensing) Storage: 5 ~ 90% (non-condensing)
Regulatory	CE, FCC, RoHS

Ordering Information

HLB-100	802.11ah HaLow Wi-Fi Bridge/Station

Related Wireless Products

NMS-AIOT	Universal Network Management AIoT Application Server with LCD & 6 10/100/1000T LAN Ports

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