Outdoor Waterproof Long Range Wireless AP

WA212BP series

Outdoor IEEE 802.11n Wireless AP

WA212BP is a high performance, 802.11n compliant, IP55 waterproof outdoor wireless AP/ Router with wireless coverage reaching up to 2km. It equips with highly sensitive, high power, and high gain 2T2R MIMO antennas that bring data rate up to 300Mbps. The dual Ethernet ports support NAT Routing and firewall/VPN connectivity. One Ethernet port receives PoE power input, and the other Ethernet port delivers PoE power output. A web-based GUI provides easy and secure management, as well as the firmware upgrade. The mini USB port can be used to add cellular dongles. WA212BP is an ideal entry-level high-speed long-range wireless communication solution for outdoor applications.

802.11b/g/n
2.4G · 4 · **300 Mbps** · **IP55** · VPN · MQTTS · amazon webservices · Microsoft Azure

NetMaster
ThingsMaster
ThingsMaster OTA

Features & Benefits

High Throughput and Extended Range Wireless Communication
· Compliant with IEEE 802.11n with 2T2R MIMO and data rate up to 300Mbps
· Long wireless transmission distance up to 2 km
· Dual Ethernet wire connection allows to expand the wireless range without bandwidth lost.
· PoE pass-through to deliver power for AP or IP cam

High power, High gain, and Smart RF management
· External Power Amplify reaches Max. 29dBm output power and -96dBm Rx sensitivity
· Directional High-Gain 11dBi Panel Antenna Inside
· Optional 5G Radio with external antenna socket
· Supports AP, Client, WDS AP/Client, multiple SSID for Point to Point/Multiple Points connectivity

Easy and WLAN Secure management
· HTTPs/ SNMP v3/ CLI management
· Built-in WPA, WPA2/ 802.1X/ Firewall security
· Multiple operating modes: Wireless AP/Client/Bridge for different applications
· Reserved USB for firmware upgrade, or optional external cellular adapter by request*

Rugged Design for Wayside installation
· Outdoor waterproof IP55 enclosure
· -30~60°C operating temp. & 24V PoE input
· Easy Pole mount installation for wayside, Port, Airport, Factory & Building applications

Dual Ethernet Routing with Enhanced Cyber Security
· Dual Ethernet port supports one LAN port, one WAN port Router mode or Bridge mode.
· NAT, Firewall, VPN is available in Router mode.
· 1:1 NAT, port forwarding and NAPT for local traffic protection
· Support Firewall for inbound/outbound traffic, port forwaring
· OpenVPN Server/Client or IPSec*
· Support L2TP with PPP, PAP, CHAP(LCP, IPCP)
· Support GRE tunnel
· HTTPs/SSH secure login
· Support TACACS+ multi-user authentication for privileged user management

Industrial IoT LAN & Cloud Management
· ARP response over 802.2 LLC SNAP
· Support MQTTS, CoAP protocol, ready to use AWS/Azure and Private Cloud Agent for cloud management
· Diagnostic tool includes Ping, TFTP, SNMP Trap, E-mail Alert and System Log
· WoMaster Software Utilities
  -**NetMaster:** Network Management System
  -**ViewMaster:** Configuration Management
  -**ThingMaster**: Interactive monitoring dashboard by Modbus Tag to collect data from Modbus devices
  -**ThingMaster OTA**: Realtime map showing the status, signal strength, location of the remote devices, over-the-air batch device registration, configuration and firmware upgrade, alerts on critical events to prevent downtime

Point to Point

Point to Multi-Points

WDS

WDS

2KM line of sight
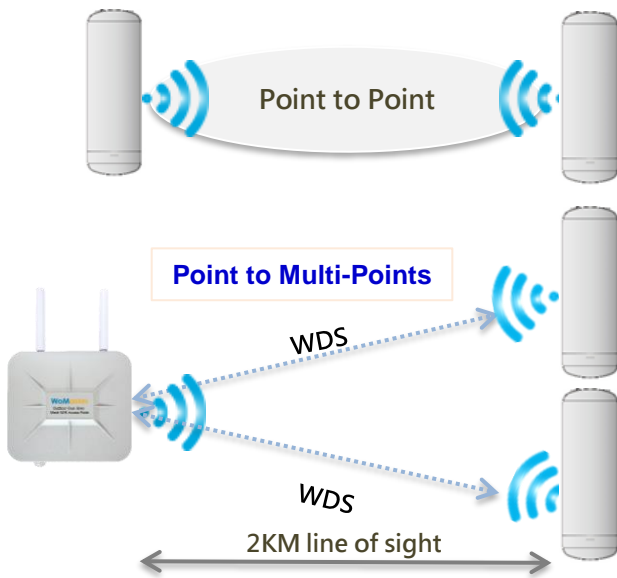
Point to point and Point to Multiple ports

WA212BP supports AP, Client, and WDS modes. Users can configure one as AP mode, and the other as client mode for point to point connection. It is an easy way to extend the wireless range.

If the user has multiple sites and would like to send traffic to the central point via wireless, the central point can be set as AP mode, and the rest points to be set as Client mode. To enhance the distance of the point to multiple points, the central AP can be WoMaster WA512 with the high gain and omni-antenna while the WA212BP acts as the client with the directional antenna.

✓ Long Range Wireless Connectivity without bandwidth lost

The WA212BP equips with two Ethernet ports for the Bridge or Router modes. While the two ports work as the Bridge mode, the traffic between the ports switch fast without bandwidth lost. Users can expand wireless coverage within one stand and reach high bandwidth wireless backhaul.While the WAN port is configured, it can support Secure Remote Access through WAN and the Cloud IIoT management.

✓ Secured Remote Access by VPN

The WA212BP can act as the VPN server for data encryption and dynamic remote access. Multiple VPN protocols are supported such as OpenVPN, IPSec*, GRE, and L2TP. The channels between multiple networks, ex. private/public/hybrid networks are fully secured and with authentication features.

Long Range Wireless without bandwidth lost

Dual Ethernet Port & PoE Pass-through

2KM   2KM

✓ ThingsMaster OTA (device management over the air)

The OTA agent embedded in the AP can upgrade device management over the air, anywhere you are and any time you want over your mobile devices. ThingsMaster OTA is a secured local OTA software that can be installed in a private or public server or even QNAP NAS (network attached storage). With OTA, all device information such as location, warning event can be shown in real time. The maintenance such as configuration reload, or device reboot can also be run by group.

Batch Configuration and Reboot OTA

Group Selection
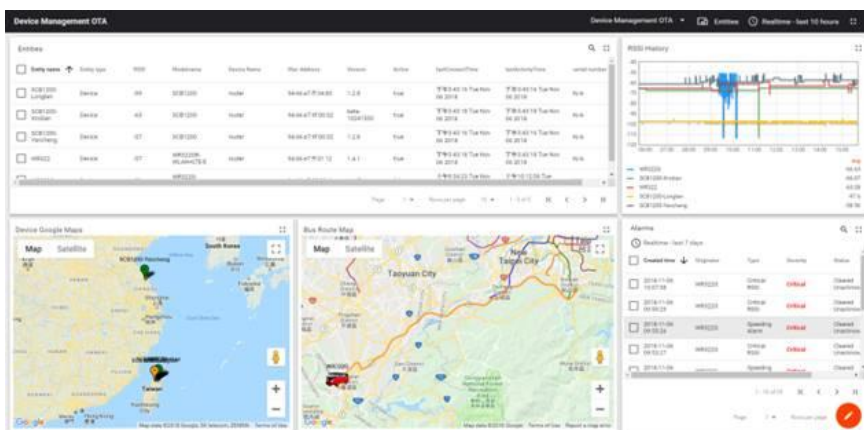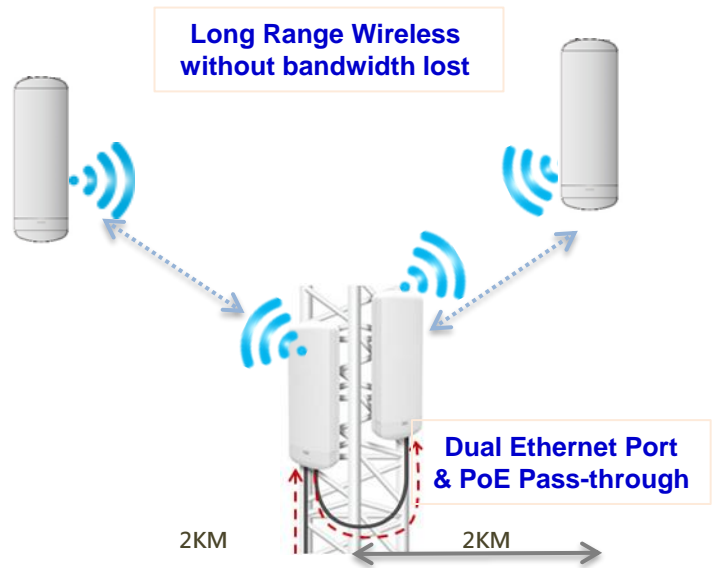
WA212BP

IP55 Housing

Embedded Antenna Directional 11dbi

Wall Mount Hole

Mount Holder for Pole Mounting Via Cable Ties

Mount Holder for Pole Mounting Via L-Mount Kit (Optional)

System LED
· Signal Strength
· PoE OUT
· WLAN
· USB
· PoE IN
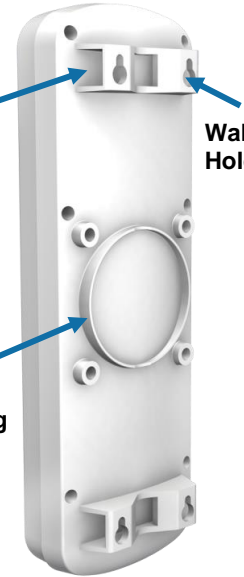
Mini USB (Reserved)

Factory Reset Button

Ethernet Port 2 (LAN)
· 1-port 10/100M RJ45 with 24V Passive **PoE Input**

Ethernet Port 1 (LAN or WAN)
· 1-port 10/100M RJ45 with 24V Passive **PoE Output**

Dimensions

Dimension: 280.86 x 91.85 x 50.35 mm
(Reference Photo)

50.35

280.86

91.85

⚙ Specifications

Technology	
Standard	IEEE 802.3u 100Base-TX Fast Ethernet
	IEEE 802.3 10Base-T Ethernet
	IEEE 802.11n 2.4GHz Wireless LAN
	IEEE 802.11ac 5GHz Wireless LAN (option)

Interface	
Ethernet Port	2 x 10/100Base-TX RJ45, Auto Negotiation Router Mode: 1 WAN + 1 LAN Bridge Mode: 2 LAN Passive PoE 24V Input/Output
System LED	PoE In: Green ON WLAN: Green ON when enabled, Green OFF when disabled, Green Blinking while transmitting data USB: Green ON while activated PoE Out: Green ON 3 x Signal LED: Green: Excellent, Yellow: Good, Red: Weak
Reset	System Reset(2~6 Seconds) / Default Settings Reset(over 7 Seconds)
Mini USB	Reserved by Request.
Antenna Socket	Embedded 11dBi Directional Antenna Optional SMA Socket: 1 x RP-SMA (WA212-NAC)

WLAN	
Radio Type	2.4GHz IEEE 802.11n/g/b, Up to 2T2R MIMO
Data Rate	802.11b: 11Mbps / 802.11g: 54Mbps / 802.11n: MCS0 ~ 15, max. 300Mbps Check detail TX/RX information in User Manual
Frequency	ISM Band, 2.412GHz ~ 2.462GHz (CH1~11), programmable by regional regulation
RSSI	≤20db, compliant with CE request
RF Conducted TX/RX Spec.	*Different area supports different RSSI, below table is the conducted capacity and only for reference. Check detail in User Manual.*

RF Conducted Spec. [Tolerance ± 2 dB]

Data Rate	TX	RX
MCS15	23	-73
MCS14	24	-77
MCS13	26	-78
MCS12	28	-83
MCS11	29	-86
MCS10	29	-89
MCS9	29	-92
MCS8	29	-94
MCS7	23	-73
MCS6	24	-76
MCS5	26	-82
MCS4	28	-85
MCS3	29	-89
MCS2	29	-91
MCS1	29	-94
MCS0	29	-95
11g 54M	25	-74
11b 1M	29	-96

| Power Requirement	
Power	DC24V Passive PoE
PoE Adapter	Input: 100-240VAC 50-60Hz 0.3A Output: 24V/0.5A, RJ45 Pin 4/5: V+, Pin 7/8: V-
Power Consumption	Max 2W full traffic, suggest to reserve 15% tolerance
Software	
Management Interface	CGI WebGUI, Command Line Interface (CLI), Telnet, SNMPv1/v2c/v3, IPv4/v6*, DHCP server/client, DHCP relay, TFTP, SMTP, ARP response over 802.2 LLC SNAP, Proxy ARP, DNS (client/proxy), System Log, PoE Out control, FTP(active/passive)*, PPPOE*
Traffic Management	Flow Control*, Traffic shaping
Security	IEEE 802.1X/RADIUS, TLS v1.2, HTTPs/SSH, First login password management WLAN AP Security: Share Key, WPA/WPA2-PSK(Pre-Shared Key), WPA/WPA2 Enterprise Encryption: 64/128-bit WEP(Wired Equivalent Privacy), TKIP(WPA-PSK), AES(WPA2-PSK),), MAC Filter
Advanced Security	TACACS+, Multiple-user authentication
Time Management	NTP, SNTP
WAN/Routing/NAT/Firewall/VPN	Routing: Static Route NAT: 1-1 NAT, NAPT(SNAT/DNAT)), Port Forwarding, DMZ Firewall: Stateful Inspection firewall, IP/Port Filter, MAC ACL VPN: OpenVPN, L2TP, GRE, IPSEC by request*
Industrial IoT	MQTTS, CoAP, RESTful API
Private Cloud	ThingsMaster, ThingMaster OTA
Public Cloud	AWS Agent, Azure Agent
Location	Google map, Baidu map
MIB	MIB-II, Entity MIB, WoMaster Private MIB
Utility	ViewMaster, NetMaster, Ping, Traceroute
WLAN Configuration	WLAN Basic Settings: Radio on/off, AP/client mode, 2.4G 11n Band and Frequency selection, SSID/Multi-SSID configuration, SSID broadcast, Advanced WLAN settings, 802.1X
Utility	ViewMaster, NetMaster, Ping, Traceroute
Wi-Fi Max. Client	Up to 20
Mechanical	
Installation	Pole Mount / Wall Mount
Enclosure Material	Plastic
Dimension	280.86 x 91.85 x 50.35 mm(H x W x D)
Ingress Protection	IP55
Weight	400g
Environmental	
Operating Temp. & Humidity	-30°C~60°C , 10%~95% Non- Condensing
Storage Temperature	-30°C~80°C
Warranty	1 years
Approval	
CE RED	EN 301 489-1 V1.9.2/EN 301 489-17 V2.2.1 EN 300 328 V1.8.1:2012 EN 55032 / EN 55035 EN 62368-1 / EN 60950-1:2006+A11:2009+A1:2010+A12:2011 (TBD)
FCC	Part15 sub C

Ordering Information

Model Name	Description
WA212BP-E	Industrial Wireless 802.11n AP/Client/Bridge,IP55, Embedded 11dBi antenna, 2 Ethernet ports, 24V Passive PoE with EU plug
WA212BP-U	Industrial Wireless 802.11n AP/Client/Bridge,IP55, Embedded 11dBi antenna, 2 Ethernet ports, 24V Passive PoE with US plug
	Package List
	1 x Product Unit
	1 x Quick Installation Guide
	2 x UV Resistant Nylon Cable Ties for Pole mounting
	1 x 24VDC PoE Injector
	1x Power cord (EU or US)

Pole Mounting by using
Cable Ties (Default)
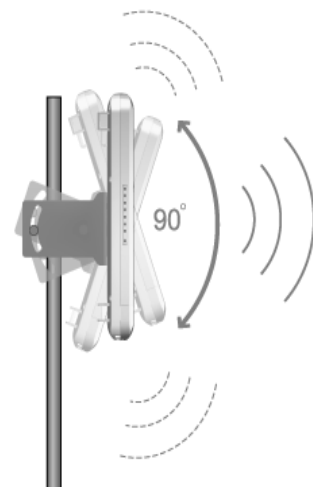
Pole Mounting by using
L-Mount kit (Optional)

Optional Accessory

MK-POLE, WA212BP
Adjustment L-Mount kit with U-ring holder for pole below 70MM diameter for Pole Mounting.