



AVCOMM®

502W Datasheet

Aiming to create better and safer working environments and life experiences through the products we deliver.



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Industrial Wireless MESH AP/Router for IIoT

502W

Industrial Dual Radio Concurrent MESH WLAN AP/Router

The 502W is the first industrial wireless LAN AP/Router in the world to adopt the latest MESH WiFi technology for the growing demands of the industrial WiFi network. The MESH WiFi features Self Organizing Network that automatically selects and links different wireless networking devices together by the MESH topology. The 502W significantly improves network coverage in different corners in a large warehouse with AGV or automated factory with advanced security. Equipped with a high-performance quad-core ARM processor, it can serve dual channels 5GHz IEEE 802.11ac Wave 2 and 2.4G 802.11n WLAN radio at the same time and reaches up to 866M+300Mbps high throughput. Advanced cybersecurity features such as OpenVPN, IPSec, L2TP and GRE tunnel are supported. The industrial designs such as ultrathin dual din-rail mounting, -40~70°C operation temperature, and PoE power input integrate easily into IIoT applications.



High Performance Wireless LAN

- Quad Core ARM Processor
- Compatible with 802.11a/b/g/n
- Simultaneously dual band 2.4 G+5GHz concurrent, up to 866Mbps + 300Mbps Bandwidth
- Dual Gigabit Ethernet port supports Router mode for WLAN/LAN to Eth-WAN routing

Wireless MESH System

- Qualcomm Wi-Fi SON Technology
- Not required Wire Ethernet in field with Wireless MESH system
- Self-healing by auto rerouting through multi-hop
- Self-configuring Plug-and-play via AIAS
- Easy to configure Mesh Setting and SSID/Password/Gateway, Mesh status (signal/channel/uplink)

Enhanced Cyber Security & Redundancy

- Support Firewall for inbound/outbound traffic
- OpenVPN (server/client), IPsec for secure remote connection
- IPSec performance with 256-bit encryption is 150Mbps
- Support L2TP with PPP, PAP, CHAP(LCP, IPCP)
- *Support GRE tunnel
- HTTPs/SSH secure login
- Support TACACS+ multi-user authentication for privileged user management

Management Features

- Various configuration paths, including Web GUI, Telnet, LAN Utility (AIAS) and ANMS
- Support First login password management
- Web GUI for Wireless LAN Setting, Radio On/Off, Band and Frequency selection, SSID/Multiple SSID, SSID Broadcast On/Off
- 1:1 NAT, port forwarding for local traffic protection
- Support SNMPv3 and entity-MIB (RFC4133), MIB II (RFC1213)
- NTP v3 time management

Cloud Management Service*

- Support Amazon AWS & Microsoft Azure cloud service
- Support private cloud service
- Interactive monitoring dashboard and map shows the status, signal strength, location etc.

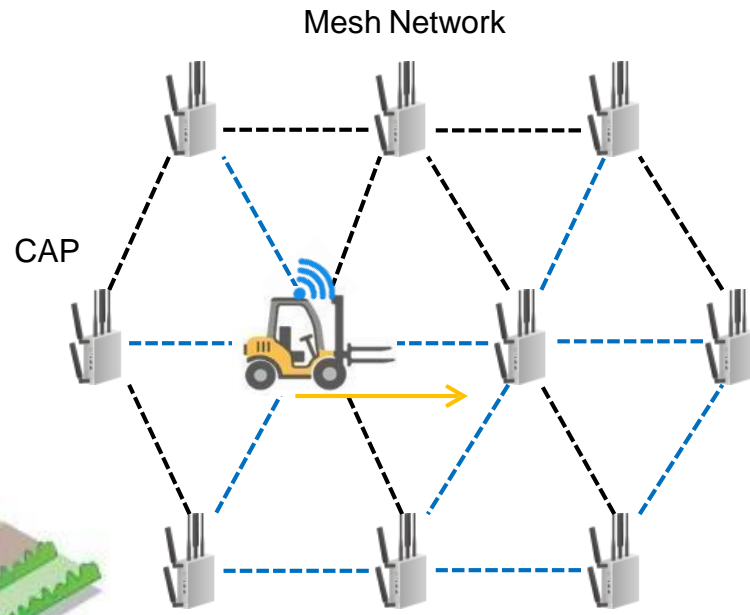
Slim & Rugged Design for Industrial IIoT Application

- Slim size dual Din-Rail mounting design
- Effective heat dissipation design for operating in -40~70°C wide-temperature design
- Support 802.3af PD to be integrated with Industrial PoE switch as complete wire/wireless solution for industrial IIoT, FA, ITE applications

✓ Self-Healing Mesh Technology

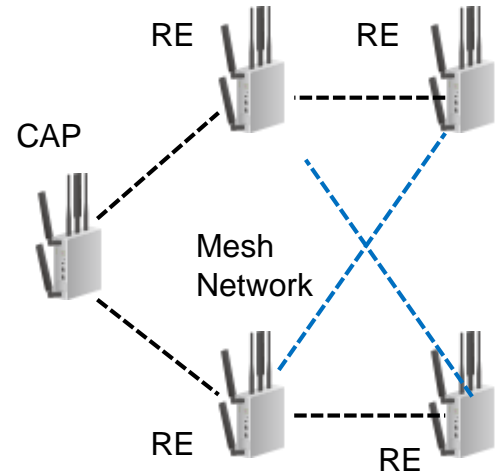
- Eliminate network bottleneck
- Auto rerouting through multi-hop
- Interference management (band steering)*
- Airtime fairness*
- Seamless roaming*

*By Request



✓ Self-Configuring by AIAS Utility

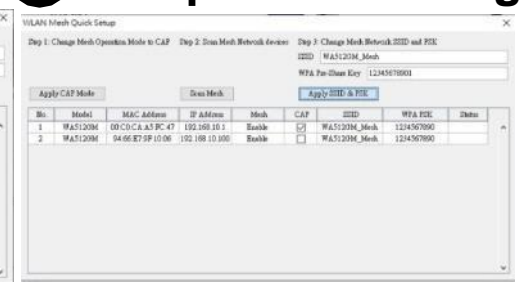
- Simple configuration with 3 steps
 1. Select a CAP (Central AP)
 2. Auto discovery RE (Range Extender)
 3. Group Mesh setting
- Group Mesh SSID and WPA PSK setting
- Mesh status (signal, channel, uplink) *



1 Select a CAP



2 Auto Discovery RE



Ordering Information

Model Name	Description
502W	Industrial wireless AP/ router, compatible with 802.11a/b/g/n, dual-band 2.4g +5GHz concurrent, 2 RJ45 Ports 10/100 Base-T(X), Auto-MDI/MDIX, Wireless Mesh System, -40°C~85°C, IP30, DIN-Rail, metal case
502MW	Industrial wireless AP/ router, Mesh WiFi, compatible with 802.11a/b/g/n, dual-band 2.4g +5GHz concurrent, 2 RJ45 Ports 10/100 Base-T(X), Auto-MDI/MDIX, Wireless Mesh System, -40°C~85°C, IP30, DIN-Rail, metal case

Technology	
Standard	IEEE 802.11ac wireless local area network (WLAN), Backward support 802.11n/g/a/b Wireless LAN
	IEEE 802.3 10Base-T Ethernet
	IEEE 802.3u 100Base-TX Fast Ethernet
	IEEE 802.3ab 1000Base-T Gigabit Ethernet Copper
	IEEE 802.3af PoE
Interface	
Ethernet Port	2 x 10/100/1000MBase-T RJ45, Auto Negotiation Auto-MDI/MDIX 1 WAN/P.D. + 1 LAN
System LED	1x PWR: Green On 2 x Ethernet Ports: Link: Green On, Activity: Green Blinking AP/Client mode: 1x Ra (2.4GHz): AP mode: Green On, Station mode client connected: Green Blinking, Station mode/radio disable: Off 1x Rb (5GHz): AP mode: Green On, Station mode client connected: Green Blinking, Station mode/radio disable: Off Mesh mode: 1x Ra: Mesh Status: Green On: Uplink existing (CAP/RE), Green Blinking: no uplink 1x Rb: Mesh Signal Status: Green ON: signal strong, Green Blinking: signal weak, Off: signal low (need to change position)
Reset	System Reset(2~6 Seconds) / Default Settings Reset(over 7 Seconds)
SMA Socket	2x RP-SMA Female
Power Input	802.3af PD or DC jack 12VDC
WLAN Properties	
Processor	Quad-Core CPU, 4x ARM Cortex A7 at 716.8MHz
Standard	Dual Band 2x2 2.4GHz 802.11n + 2x2 5GHz 802.11ac Radio IEEE 802.11ac/a/b/g/n wave2 MU-MIMO 802.11ac: OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM)
Data Rate	802.11ac: MCS0 ~ 9, max. 866Mbps 802.11b: 11Mbps / 802.11a/g: 54Mbps / 802.11n: MCS0 ~ 15, max. 300Mbps Check detail TX/RX information in User Manual
Frequency	ISM Band, 2.4GHz: 2.412GHz ~ 2.472GHz 5GHz: 5.180MHz ~ 5.240MHz, 5.745 ~ 5.825MHz(Band 1,4) 802.11ac 80MHz@5210MHz/5770MHz 2x SMA connector for simultaneous dual bands concurrent
MIMO	2.4/5GHz: 2T2R MU-MIMO DBDC (Dual Band Dual Concurrent)
Max. E.I.R.P.	≤20db, compliant with CE request
Antenna	
WLAN Default Antenna	Frequency: 2400~2500/ 4900~5900 MHz
	Peak Gain: 2.4GHz: 3.5 dBi, 5GHz: 5dBi
	Direction: Omni-directional
	Connector: SMA Male
	Dimension: 196xΦ13 mm
Power Requirement	
Input Voltage	802.3af PD or DC jack 12VDC
Power Consumption	9.12W / 48VDC Normal load

Software	
Management	CGI WebGUI, Command Line Interface (CLI), IPv4/IPv6*, Telnet, SNMP v1/v2c/v3, DDNS, DHCP server/client, DHCP Relay, TFTP, System Log, SMTP, ARP response over 802.2 LLC SNAP, Proxy ARP, DNS (client/proxy)
MESH Wi-Fi*	Qualcomm Wi-Fi SON Technology, Self-healing by auto rerouting through multi-hop, Self-configuring Plug-and-play via AIAS, Mesh SSID/Password/Gateway, Mesh status (signal/channel/uplink)
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)
Advanced Security	TACACS+, Multi-user authentication
Time Management	NTP, SNTP
WAN/Router/NAT/Firewall/ VPN	NAT: 1-1 NAT, NAPT(SNAT/DNAT), Port Forwarding Firewall: Stateful Inspection firewall, DMZ, IP/Port Filter, *MAC Filter VPN: IPSec, OpenVPN, L2TP, *PPTP, *GRE, >150Mbps IPSec Performance @256-bit encryption
IIoT Industrial Protocol	MQTT*, RESTful API*
Private Cloud	ATMS™, ATMS™ OTA
Public Cloud	AWS Agent*, Azure Agent*
MIB	MIB-II, Entity MIB, AVCOMM Private MIB
Utility	AIAS, ANMS, Ping, Traceroute
WLAN Configuration	WLAN Basic Settings: Radio on/off, 2.4G 11n/5G 11ac Band and Frequency selection, SSID/Multi-SSID configuration, SSID broadcast and advanced WLAN settings
Mechanical	
Installation	DIN Rail
Enclosure Material	Steel Metal
Dimension	40 mm x 110 mm x 106 mm(W x H x D) / without DIN Rail Clip
Ingress Protection	IP30
Weight	660g (without PoE Injector) 900g (with PoE injector)
Environmental	
Operating Temperature & Humidity	-40°C~70°C (PD mode) 5%~95% Non- Condensing Note: Power the device by Industrial PoE Switch for high temperature environment.
Storage Temperature	-40°C~85°C
MTBF	>2,000,000 hours at 40° full cycle
Warranty	3 years
Enclosed PoE Injector	Input: 90~264Vac, 47~63Hz, Max. 0.55A Output: Passive 48V, 500mA (RJ45 Output Pin 4/5: V+, Pin 7/8: V-) Operating Temperature: 0~40°C Storage Temperature: -20~85°C
Approval	
CE	CE RED Compliance Safety: IEC/EN60950-1 EN 55032/55035/EN51000-3-2/EN61000-3-3 EN 301 489-1/17 EN 300 328/EN 301 893/EN 300 400 EN 62311 MPE
FCC	EMC: Part 15B



function interface

	502W
ANT 1	WLAN-Main 2.4/5G DualBand
ANT 2	WLAN-Diversity 2.4/5G DualBand

Gigabit Ethernet

- 2-port 10/100/1000M RJ45
- WAN + LAN configurable

Power Input

- 802.3af PD PoE Ethernet Resets to Default
- AC Jack for DC12 Adapter



Antenna 1/2

- Available for both 2.4G+5GHz
- Dual Band concurrent

DIN Clip

System LED

- 1 x Power
- 2 x Ethernet Port
- 2 x Radio LED (Ra/Rb)

Ground



Installation dimensions

Unit: $\frac{\text{inch } \pm 0.040}{[\text{mm}] \pm 1.00}$

