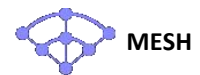


World First Industrial Wireless 2.4G+5GHz MESH AP/Router

512W-D

Industrial 2.4G+5GHz Mesh WLAN AP/Router

The 512W-D is the first industrial 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 512W-D 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 slim din-rail mounting, extended -40~70C operation temperature, and PoE power input integrate easily into IoT applications.



Dual Bands Wireless LAN

- Quad-Core ARM Processor
- IEEE 802.11ac Wave 2, compatible with 802.11a/b/g/n
- Concurrent dual-band 2.4 G+5GHz radio, up to 866Mbps + 300Mbps Bandwidth
- Dual Gigabit Ethernet ports in Router mode for WLAN/LAN to Eth-WAN routing

Qualcomm® Wi-Fi SON Technology

- Self-Healing auto rerouting through multi-hop (up to 4 layers and 8 hops)
- Self-Configuring Plug-and-play via Wireless network with ViewMaster utility
- Autonomous performance optimization (802.11k)*
- Interference management via band steering (802.11v)*
- Seamless roaming (802.11r)*
- Self-defending (Round-the-clock security)*

Enhanced Cyber Security & Redundancy

- Support Firewall for inbound/outbound traffic
- OpenVPN (server/client), IPsec for secure remote connection
- IPsec Performance >150Mbps @256-bit encryption
- 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 (ViewMaster) and NMS (NetMaster)
- 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 proprietary ThingsMaster cloud service
- Interactive monitoring dashboard and map shows the status, signal strength, location etc.

Slim & Rugged Design for Industrial IoT Application

- Slim size Din-Rail mounting design
- Effective heat dissipation design for operating in -40~70°C environments
- Power Input 802.3af PD by Industrial PoE switch as a complete wire/wireless solution.

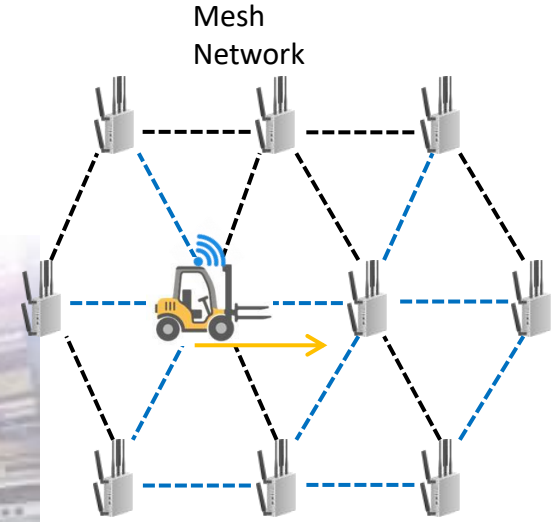
Features & Benefits

✓ Self-Healing Mesh Technology

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

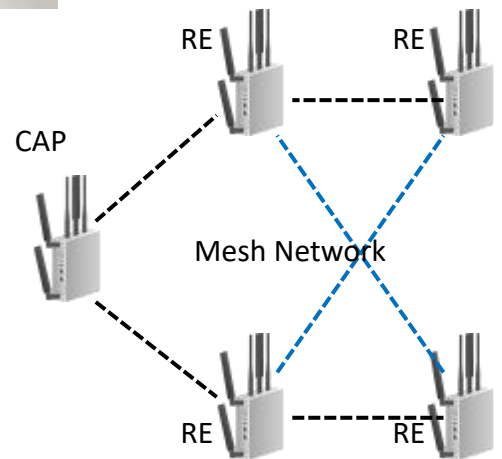
*By Request

CAP

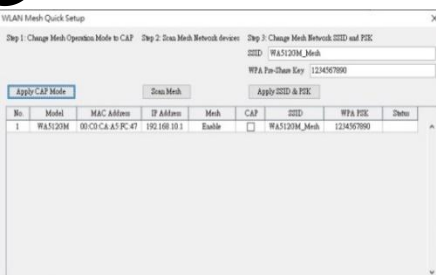


✓ Self-Configuring by ViewMaster Utility

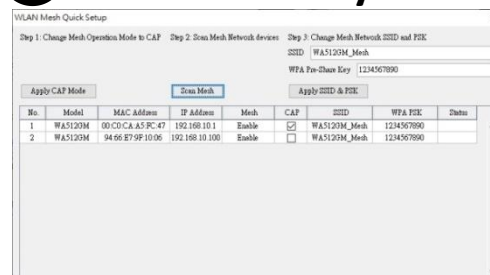
- Simple configuration with 3 steps
 1. Select a CAP (Central AP)
 2. Auto discovery RE (Range Extender)
 3. Group Mesh setting
- Group Mesh SSID and WPA PSK setting
- Mesh status (signal, channel, uplink) *



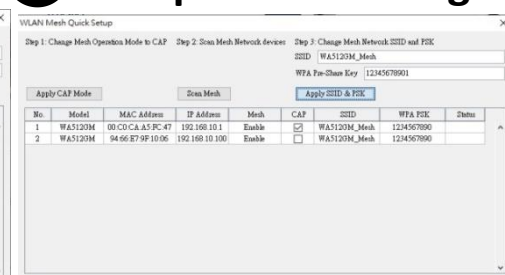
1 Select a CAP



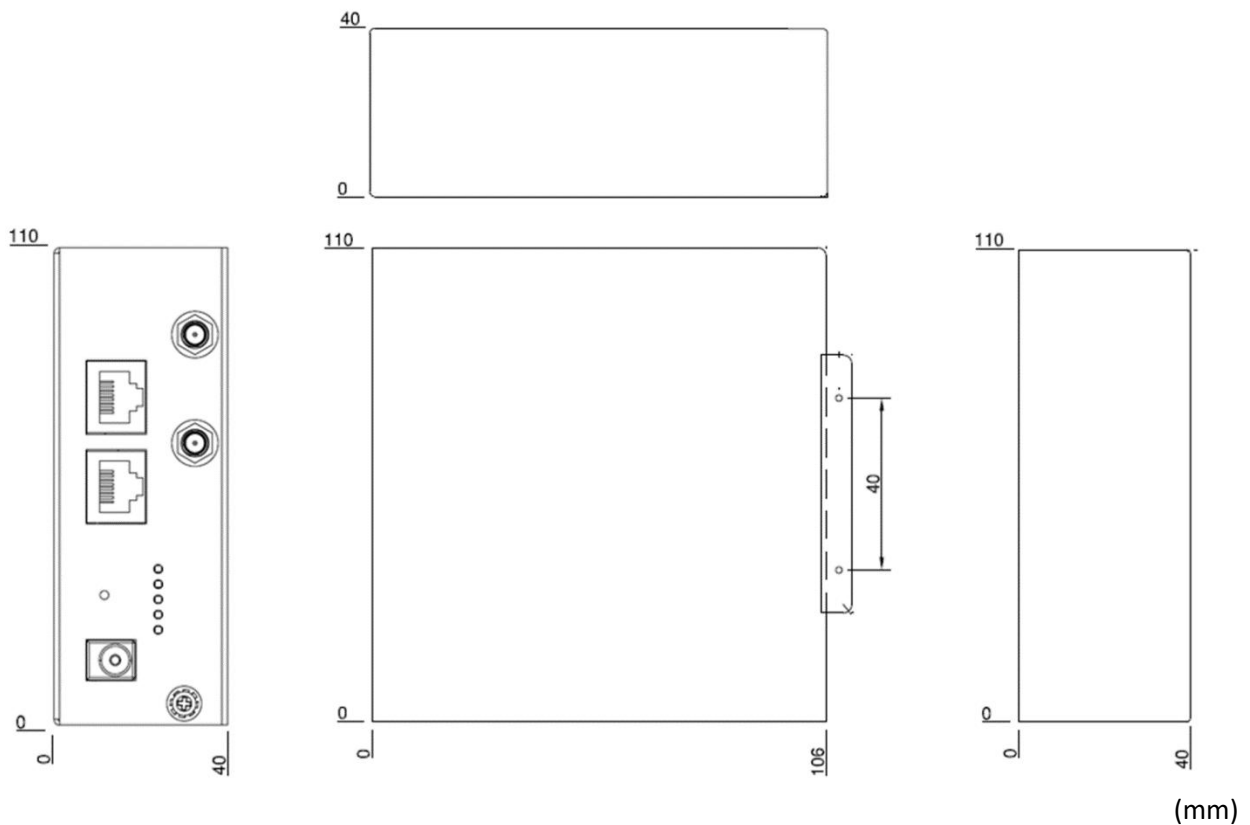
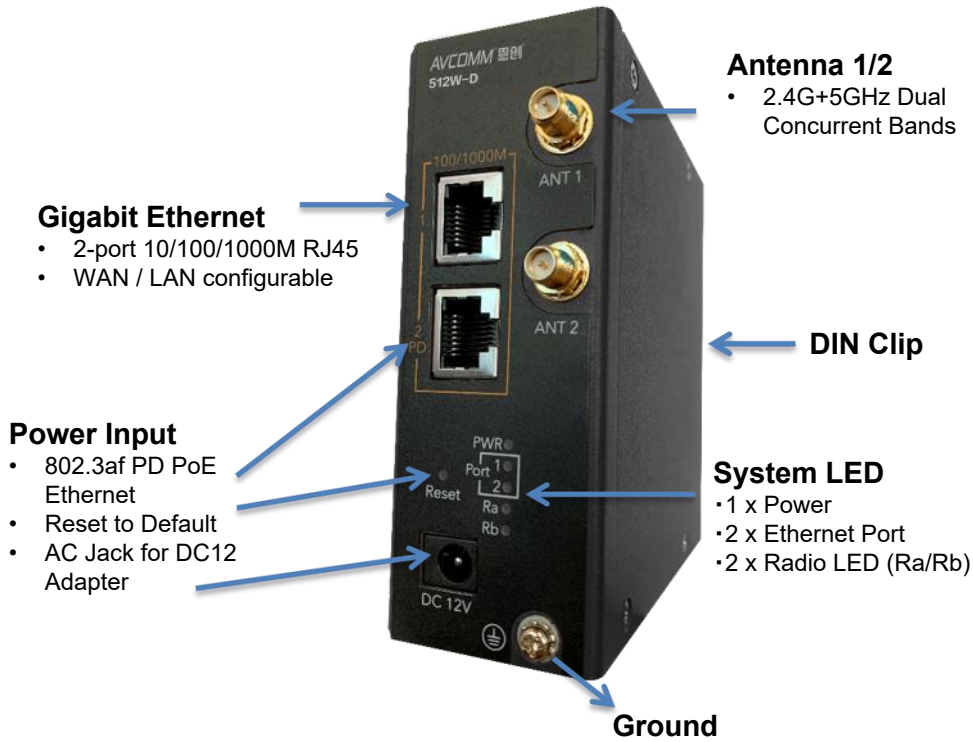
2 Auto Discovery RE



3 Group Mesh Setting



512W-D	
Ant 1	WLAN-Main 2.4/5G Dual Band
Ant 2	WLAN-Diversity 2.4/5G Dual Band



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 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 connected: Green Blinking, Station mode/radio disable: Off 1x Rb (5GHz): AP mode: Green On, Station mode connected: Green Blinking, Station mode/radio disable: Off Mesh mode*: 1x Ra: Mesh Status: Green On: Uplink existing (for both 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) CAP(Central AP): With connection to internet through Ethernet RE(Range Extender): mesh node with mesh uplink through wireless
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


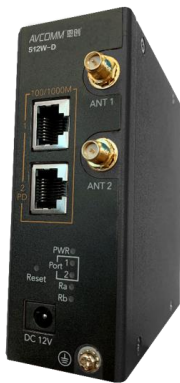
Software	
Management	CGI WebGUI, Command Line Interface (CLI), IPv4/IPv6*, Telnet, SNMP v1/v2c/v3, DDNS, DHCP server/client, DHCP Relay, TFTP, System Log, SMTP, ARP response over 802.2 LLC SNAP, Proxy ARP, DNS (client/proxy)
MESH Wi-Fi	Qualcomm® Wi-Fi SON Technology, Self-healing by auto rerouting through multi-hop, Self-configuring Plug-and-play via ViewMaster, Mesh SSID/WPA PSK, 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/Routing/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	ThingsMaster, ThingMaster OTA
Public Cloud	AWS Agent, Azure Agent
MIB	MIB-II, Entity MIB, WoMaster Private MIB*
Utility	ViewMaster, NetMaster, 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 x 110 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	>200,000 hours at 40° full cycle
Warranty	3 years
Attached 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

Ordering Information

Model Name	Description
512W-D-E	Industrial Dual Radio 2.4G+5GHz Concurrent Wireless MESH AP, 802.11ac Wave2 + 802.11b/g/n WLAN, 2GE, Din-Rail, EU-plug
512W-D-US	Industrial Dual Radio 2.4G+5GHz Concurrent Wireless MESH AP, 802.11ac Wave2 + 802.11b/g/n WLAN, 2GE, Din-Rail, US-plug
Package List	
1 x Product Unit	
2 x WLAN Antenna, White	
1 x PoE Injector with AC Plug	
1 x Quick Installation Guide	
1 x Attached Din Clip	

Family Information

Model Name	Description
512W-D-IP67-US	Industrial Dual Radio 2.4G +5GHz Concurrent Wireless AP, 802.11ac Wave 2 + 802.11b/g/n WLAN, 2GE, USB, IP67 Enclosure, US-plug
512W-D-M-IP67-US	Industrial Dual Radio 2.4+5GHz Concurrent Wireless MESH AP, 802.11ac Wave 2 + 802.11b/g/n WLAN, 2GE, USB, IP67 Enclosure, US-plug
512W-D-IP67-E	Industrial Dual Radio 2.4G +5GHz Concurrent Wireless AP, 802.11ac Wave 2 + 802.11b/g/n WLAN, 2GE, USB, IP67 Enclosure, EU-plug
512W-D-M-IP67-E	Industrial Dual Radio 2.4+5GHz Concurrent Wireless MESH AP, 802.11ac Wave 2 + 802.11b/g/n WLAN, 2GE, USB, IP67 Enclosure, EU-plug

WA512W/WA512GM	WA512W-D
	
269mm x 239mm x 68mm (W x H x D) IP67 Enclosure	40 x 110 x 106 mm(W x H x D) Din-Rail Mount