Omada by tp-link

Datasheet

# Enterprise Solution

## Omada Fusion Pro 2.5G PoE Gateway




Model: Fusion Pro 2.5G PoE

# Product Overview

Omada Fusion Pro 2.5G PoE is a gateway with a built-in controller & video management system (VMS), serving as the center of the Omada ecosystem. Integrating Omada Networking and Omada Guard unifies network management and video monitoring on a single platform. With easier setup and license free cloud management, it simplifies deployment, operations, and maintenance—boosting efficiency and profitability. Ideal for surveillance networks and small businesses such as restaurants, high-end residential, retail shops, and clinics.

- **One Platform for Networking & Surveillance:** Centrally manage Omada APs, switches, cameras, and an NVR.
- **Simplified Setup:** App-guided onboarding via Bluetooth and one-tap bulk device adoption.
- **License-Free Cloud Management:** Advanced networking & AI-powered surveillance with DPI, QoS, and Smart Search*.
- **Enterprise-Grade Performance:** 9× 2.5G ports (8× PoE+, 180W total budget), Quad-core CPU, 2.3 Gbps IPS/IDS throughput†.
- **Flexible Storage Options:** 1× NVMe SSD tray for 2TB video storage or an external NVR expansion for up to 24× cameras‡.
- **Quick Troubleshooting via Touchscreen:** Speed test, fault alerts, traffic insight, and more.
- **Advanced Software Capabilities:** Full-featured VPNs, full mesh SD-WAN, auto QoS, content filtering
- **Professional Video Monitoring:** Smart Search, case management, third-party camera support, and cloud drive & NAS archive.

# Product Appearance




*Smart Search is currently available on VIGI Insight cameras.

†Actual throughput may vary depending on traffic conditions, enabled features, and network environment.

‡SSD not included.

# Feature Descriptions

**Unified Control for Networking & Surveillance in One Platform**

Centrally manage Omada APs, switches, gateways, cameras, and an NVR for simplified management at scale—all in a single interface. Instantly detect and resolve network and surveillance issues without switching systems.

**License-Free Cloud Management**

Access all features from day one with zero license fees, including advanced networking and AI-powered surveillance. Connect up to 20 sites with Full Mesh SD-WAN and manage all IPCs centrally through a unified interface via the Omada Cloud portal or app, anytime, anywhere.

**Simplified Setup for Faster Deployment**

Easily set up the Fusion Gateway via Bluetooth using the Omada app. Automatically discover and batch adopt all other Omada devices at once. Desktop, wall, and rack mounting ensure flexible installation in a wide range of scenarios.***

**Superior Hardware and Performance**

Powered by a high-performance quad-core CPU and nine 2.5G RJ45 ports (eight with PoE+, 180W total). Supports up to 8-WAN load balancing with auto failover, a built-in SSD tray for up to 2 TB of local storage, and high-throughput IPS/IDS with optimized VPN for fast, secure connectivity.

**Touchscreen for On-Site Troubleshooting**

A 3.69-inch integrated touchscreen provides access to network health scores, speed tests, alerts, and real-time traffic, enabling basic diagnostics and troubleshooting directly on the device.

**Secure Remote Network Access**

Fusion Pro 2.5G PoE supports Omada LightLink VPN for secure remote access. Smart Split Tunneling routes only designated traffic through the VPN, reducing tunnel load while maintaining network performance.

**Advanced Software Capabilities**

Supports application- and category-level access control. QoS enables traffic prioritization, ensuring critical applications receive sufficient bandwidth. It also supports content filtering with flexible, category- and time-based rules for centralized policy enforcement.

**Professional Video Monitoring**

Quickly find footage with AI-powered people and vehicle search. Manage investigations in the Case Center and enjoy broad camera compatibility with flexible cloud and NAS storage options.

**Intelligent O&M Efficiency for Always-On Reliability**

Keep surveillance running with continuous recording via ANR. Quickly resolve issues with remote camera reboot and intelligent recovery (enhanced PoE Auto Recovery), while built-in cable testing helps pinpoint faults for reliable, uninterrupted monitoring.[△]

***Magnetic mount plate and rack mount kit sold separately.

[△]These features require implementation with compatible cameras and PoE switches.

# Specifications

| | | |
|---|---|---|
| **Overview** | | |
| Built-In Omada OS Applications | | Network Application (Network Management)<br>Guard Application (Surveillance Management) |
| Managed Omada Network Devices | | 30 (Recommended)[§] |
| Managed Cameras | | • Up to 24 Cameras[§]<br>• Recommended Capacity: 16× HD / 14× 5MP / 12× 8MP / 6× 12MP Cameras[§] |
| Managed Omada/VIGI NVRs | | Up to 1 |
| Client Capacity | | 300 (Recommended)[§] |
| Interface | | • 1× 2.5G RJ45 WAN port<br>• 8× 2.5G RJ45 LAN/WAN Ports<br>• Up to 8 Simultaneous WAN Ports |
| Mounting | | • Desktop<br>• Wall-Mount (Magnetic-Mount Plate Sold Separately)<br>• Rack-Mount (Rackmount Kit Sold Separately) |
| Dimensions | | 8.90 × 5.31 × 1.24 in (226 × 135 × 31.5 mm) |
| **Hardware** | | |
| Standards and Protocols | | IEEE 802.3, IEEE 802.3i, IEEE 802.3u, IEEE 802.3ab, IEEE 802.1q, IEEE 802.1p, IEEE 802.1ab, TCP/IP, DHCP, ICMP, NAT, PPPoE, NTP, HTTP, HTTPS, DNS, IPSec, PPTP, L2TP, OpenVPN, WireGuard VPN, SNMP, LLDP |
| Network Media | | 10BASE-T: UTP category 3, 4, 5 cable (Max 100 m)<br>EIA/TIA-568 100Ω STP (Max 100 m)<br>100BASE-TX: UTP category 5, 5e cable (Max 100 m)<br>EIA/TIA-568 100Ω STP (Max 100 m)<br>1000BASE-T: UTP category 5, 5e, 6 cable (Max 100 m)<br>2.5GBASE-T: UTP category 5, 5e, 6 cable (Max 100 m) |
| CPU | | Quad-core ARM® Cortex®-A73@1.8GHz |
| Memory | | 4 GB DDR4 |
| Storage | | 64 Mbit NOR Flash + 32 GB eMMC |
| SSD Tray | | 1× NVMe SSD Tray (Up to 2 TB Video Storage) |
| Touchscreen | | 3.69-inch Color LCM Touchscreen |
| PoE | | 8 Ports PoE+ Output, 180 W PoE Budget*** |
| Button | | Reset Button |
| Enclosure | | Polycarbonate |
| LED | | Link, PoE |
| Fan | Quantity | 1 |
| | Noise | Max: 28.0 dBA@1m |
| | | Min: Fanless Mode |
| Antenna | | 1× BLE Antenna |
| Net Weight | | Without SSD: 1.83 lb (828 g) |

[§]Controller and management features may vary depending on connected Omada devices, software versions, and deployment modes. The stated management capacity is based on laboratory testing. Actual management capacity and performance may vary depending on deployment and network conditions.

***PoE budget calculations are based on laboratory testing. Actual PoE power budget is not guaranteed and will vary as a result of client limitations and environmental factors.

| | |
|---|---|
| Power Supply | 100-240V~ 50/60Hz 54V/4.16A |
| Max Power Consumption | 225 W (With Power Adapter) |
| Surge Protection | 4 kV Surge Protection |
| ESD Protection | ±8 kV (Air)<br>±6 kV (Contact) |
| Onboarding | Bluetooth or Ethernet |
| MTBF | 406,794 h @ 25 °C |
| **Performance**[†] | |
| Concurrent Sessions | 150,000 |
| New Sessions/Second | 10,000 |
| Static IP NAT Throughput (Upload/ Download) | 2,370 Mbps / 2,374 Mbps |
| DHCP NAT Throughput (Upload/ Download) | 2,374 Mbps / 2,373 Mbps |
| PPPoE NAT Throughput (Upload/ Download) | 2,335 Mbps / 2,350 Mbps |
| L2TP NAT Throughput (Upload/ Download) | 2,149 Mbps / 2056 Mbps |
| PPTP NAT Throughput (Upload/ Download) | 1,932 Mbps / 2,172 Mbps |
| 66 Byte Packet Forwarding Rate (Upload/Download) | 3,585,051 pps / 3,555,709 pps |
| 1,518 Byte Packet Forwarding Rate (Upload/Download) | 203,185 pps / 203,181 pps |
| Omada LightLink VPN Throughput | 1,017 Mbps |
| IPSec VPN Throughput | ESP-SHA1-AES256: 1,332 Mbps<br>ESP-SHA256-AES256: 1,285 Mbps<br>ESP-SHA384-AES256: 1,317 Mbps<br>ESP-SHA512-AES256: 1,227 Mbps |
| OpenVPN Throughput | 393 Mbps |
| L2TP VPN Throughput | 1,109 Mbps |
| PPTP VPN Throughput | 404 Mbps |
| SSL VPN Throughput | 371 Mbps |
| WireGuard VPN Throughput | 1,044 Mbps |
| IPS Throughput (Upload/Download) | 2,357 Mbps / 2,364 Mbps |
| DPI Throughput (Upload/Download) | 2,370 Mbps / 2,374 Mbps |
| **Environment & Certifications** | |
| Environment | Operating Temperature: 14°F to 104°F (-10 °C to 40 °C)<br>Storage Temperature: -22°F to 158°F (-30 °C to 70 °C)<br>Operating Humidity: 10% to 90% non-condensing<br>Storage Humidity: 5% to 90% non-condensing |
| Certifications | CE, FCC |

[†] Rated specifications may vary depending on traffic conditions, enabled features, and network environment.

# Software Features

## Network Application

| Centralized Monitoring and Management | |
|---|---|
| Dashboard-Overview/Wi-Fi/Clients/ Traffic | √ |
| Dashboard-Network Topology | √ |
| Health Monitoring | √ |
| Device Management | Automatic Device Discovery |
| Switch Ports | √ |
| Client Management | √ |
| Reports | √ |
| Logs | Alerts / Events / Audit Logs |
| **Maintenance** | |
| Network Tools | Ping Test / Packet Capture / Terminal / Cable Test / Interference Detection / Remote Access |
| IntelliRecover | √ |
| **Network Config** | |
| SNMP | v1/v2c/v3 |
| Bonjour/mDNS | √ |
| WAN Connection | Static IP / Dynamic IP / PPPoE / PPTP / L2TP / MAP-E / DS-Lite |
| Dynamic DNS | Dyndns / No-IP / Peanuthull / Comexe / TP-Link DDNS / DDNS Customization |
| Multi-WAN Failover & Load Balancing | √ |
| DHCP | DHCP Server<br>DHCP Options Customization<br>DHCP Address Reservation<br>Multi-IP Interfaces<br>Multi-Net DHCP<br>WAN DHCP Option 60 |
| IPv6 | Static IP / SLAAC / DHCPv6 / PPPoE / 6to4 Tunnel / Pass-Through / Non-Address Mode |
| VLAN Segmentation | 802.1Q VLAN |
| MAC Clone | √ (Customizable WAN MAC Address) |
| Bridge VLAN | √ |
| SSID | √ |
| PPSK | √ |
| WLAN Optimization | √ |
| Route | Static Route / Policy Routing |
| IPTV | IGMP v2/v3 Proxy / Custom Mode / Bridge Mode |
| Session Limit | IP-Based Session Limit |
| QoS | √ |

| | |
|---|---|
| NAT | Virtual Server<br>NAT-DMZ<br>FTP/H.323/SIP/IPSec/PPTP ALG<br>UPnP<br>One-to-One NAT<br>Disable NAT |
| OUI-Based VLAN | √ |
| VRRP | √ |
| Portal | √ |
| 802.1X | √ |
| EoGRE Tunnel | √ |
| Bluetooth | √ |
| MAC-Based Authentication | √ |
| **Security** | |
| IDS/IPS | Signature-Based IPS / IDS Threat Detection |
| DPI | Deep Packet Inspection (DPI)<br>Application Filter |
| ACL | Source/Destination IP-Based ACL<br>Application-Based ACL<br>Stateful ACL<br>IPv4/IPv6 ACL<br>Nation-Based ACL<br>FQDN |
| Content Filtering | URL Category / Ad Block / Allow List / Block List / Safe Search |
| Secure DNS | DNSSEC / DoH / DoT / DNS Redirection |
| Firewall | Stateful Firewall / Attack Defense |
| ARP Inspection | √ |
| MAC Filtering | √ |
| IP-MAC Binding | √ |
| Attack Defense | √ |
| IMPB | √ |
| **VPN & SD-WAN** | |
| Omada LightLink VPN | Invite by Link<br>Invite by Email<br>Max LightLink Clients: 253 |
| SD-WAN[§] | Full Mesh Mode |
| Site-to-Site VPN | WireGuard VPN / IPsec VPN |
| VPN Server | WireGuard VPN / OpenVPN / IPsec VPN / SSL VPN / L2TP VPN / PPTP VPN |
| VPN Client | WireGuard VPN / OpenVPN / L2TP VPN / PPTP VPN |

[§]SD-WAN can only be configured via the Omada Cloud Portal.

| | |
|---|---|
| IPSec VPN | Max IPSec VPN Tunnels: 20<br>LAN-to-LAN, Client-to-LAN<br>Main and Aggressive Negotiation Modes<br>DES, 3DES, AES128, AES192, and AES256 Encryption Algorithms<br>IPSec Failover<br>IKE v1/v2<br>MD5, SHA1, SHA256, SHA384, and SHA512 Authentication Algorithms<br>NAT Traversal (NAT-T)<br>Dead Peer Detection (DPD)<br>Perfect Forward Secrecy (PFS) |
| PPTP VPN | PPTP VPN Server<br>Max PPTP VPN Clients: 10<br>Max PPTP VPN Tunnels: 16<br>PPTP with MPPE Encryption |
| L2TP VPN | L2TP VPN Server<br>Max L2TP VPN Clients: 10<br>Max L2TP VPN Tunnels: 16<br>L2TP over IPSec |
| OpenVPN | OpenVPN Server<br>Max OpenVPN Clients: 10<br>Max OpenVPN Tunnels: 110<br>"Certificate + Account" Mode<br>Full Mode<br>Split Mode |
| SSL VPN | Max SSL VPN Tunnels: 80 |
| Virtual WAN | WAN Connection Type: Static IP, Dynamic IP, PPPoE<br>Max Virtual WAN Entries: 3 |
| VPN Status | √ |

## Guard Application

| | |
|---|---|
| Videos | Live View<br>Playback |
| Devices | Device Management |
| Events | Event List<br>Notification Settings |
| Smart Search | Human Event<br>Vehicle Event |
| Case Center | Add Case<br>Case List<br>Video Clips |
| Recording | Recording Management |
| Logs | Alerts<br>System Events<br>Audit Logs |
| Storage Management | Disk Management<br>Loop Recording<br>Pre-recording Time<br>Delay-recording Time<br>Auto Delete Old File<br>ANR |
| Smart Analytics | √ |
| Auto Discover Device | √ |
| Archiving Management | √ |

## Omada OS & Cloud Portal

| | |
|---|---|
| Management | Cloud Access<br>On-Premises Management<br>Omada App<br>Omada Guard App<br>Account & Role<br>Multi-Site Management |
| Maintenance | Restore & Backup |
| OS / Portal Config | System Settings<br>OS & Applications |

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