

# Omada Multi-Gigabit VPN Router

MODEL: ER707-M2



## Highlights

- Dedicated Dual-core CPU for outstanding performance
- 1GB DDR4 high-speed memory for high concurrent connections
- Equipped with 1× 2.5G RJ45 WAN Port, 1× 2.5G RJ45 WAN/LAN Port, 1× Gigabit SFP WAN/LAN Port, 4× Gigabit RJ45 WAN/LAN Ports, 1× USB2.0 (Storage & LTE) Port
- Supports multiple VPN protocols including SSL VPN/ GRE VPN/ OpenVPN/ IPSec/ PPTP/ L2TP/ L2TP over IPSec, helping users to establish VPN connections more flexibly
- Supports up to 500,000 concurrent connections
- Abundant features including load balance, bandwidth control and access control
- Professional 4 kV lightning protection keeps your investments as safe as possible

# Omada Solution



## Software Defined Networking (SDN) with Cloud Access

Omada Software Defined Networking (SDN) platform integrates network devices, including access points, switches and gateways, providing 100% centralized cloud management. Omada creates a highly scalable network—all controlled from a single interface. Seamless wireless and wired connections are provided, ideal for use in hospitality, education, retail, offices, and more.



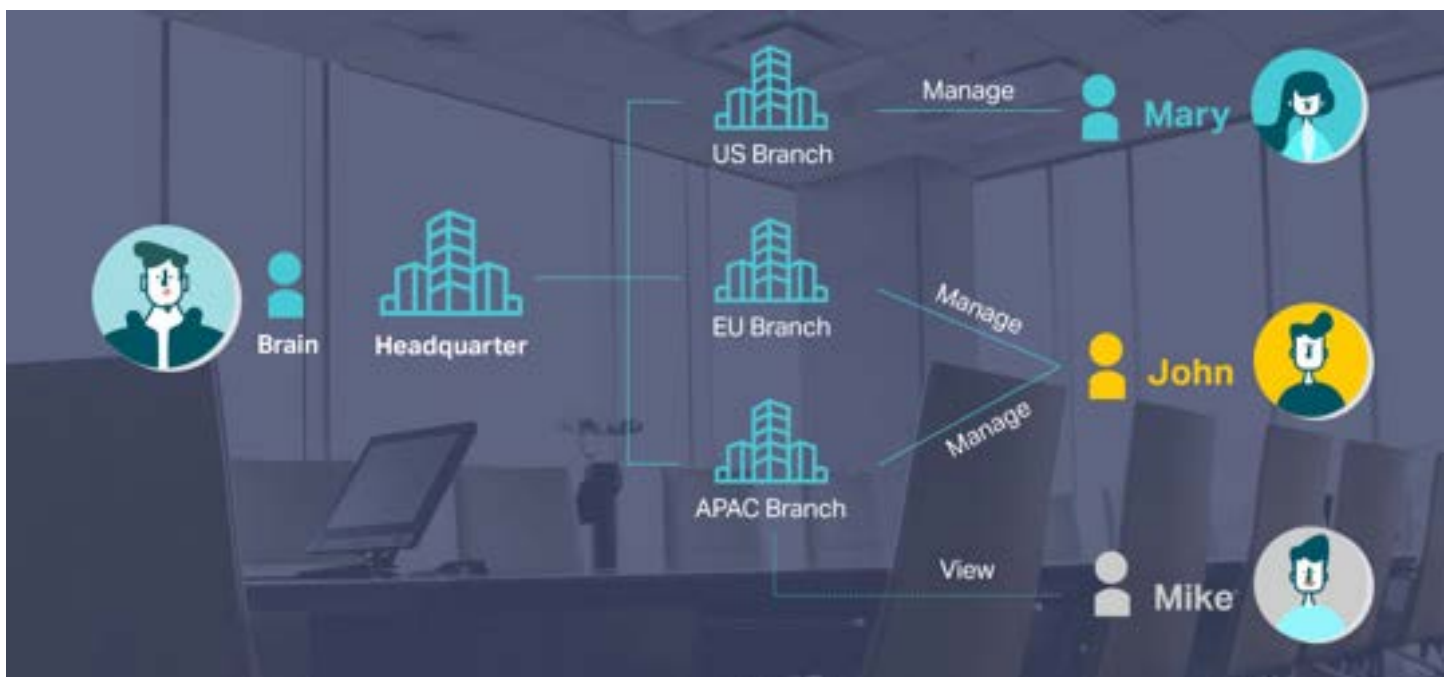
## Hassle-Free Centralized Cloud Management

100% centralized cloud management of the whole network from different sites—all controlled from a single interface anywhere, anytime.



## Assign Different Management Roles

Multi-user privilege assignment is available to increase management efficiency and security. Multi-person management, multi-level permissions, and the ability to add admins as needed, enable flexible network operation and maintenance.

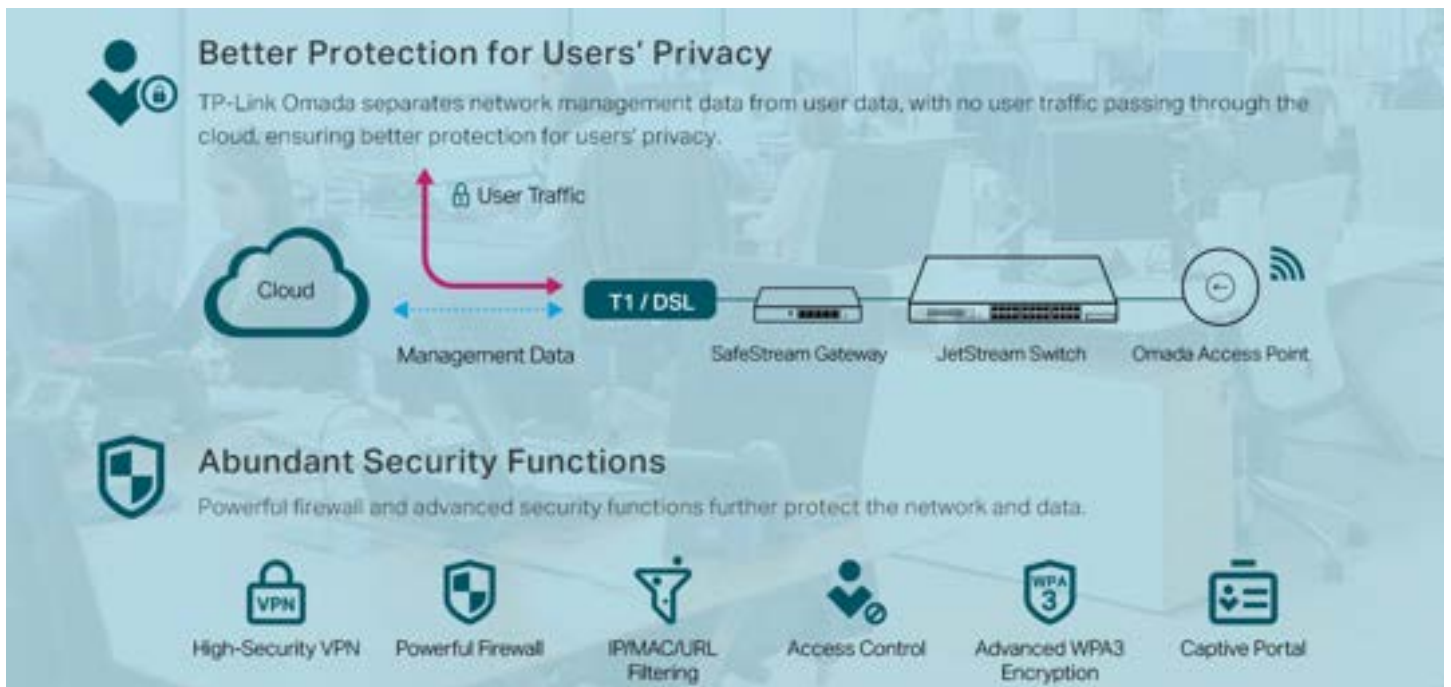


## Easy and Intelligent Network Monitoring

The easy-to-use dashboard makes it easy to see your real-time network status; check network usage and traffic distribution; receive network condition logs, abnormal event warnings, and notifications; or even track key data for better business results. Network topology helps IP admins quickly see and troubleshoot connection at a glance.



## Comprehensive Protection for the Whole Network



# Specifications

| Model               |                          | ER707-M2                                                                                                                                                                                                          |
|---------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Picture     |                          |                                                                                                                                 |
| Product Description |                          | Omada Multi-Gigabit VPN Router                                                                                                                                                                                    |
| General             | CPU                      | Dual-core ARMv8                                                                                                                                                                                                   |
|                     | Interface                | 1× 2.5G RJ45 WAN Port,<br>1× 2.5G RJ45 WAN/LAN Port,<br>1× Gigabit SFP WAN/LAN Port,<br>4× Gigabit RJ45 WAN/LAN Ports                                                                                             |
|                     | USB                      | 1 USB2.0 (Supports LTE backup with LTE dongle, and USB Storage)                                                                                                                                                   |
|                     | Button                   | Reset button                                                                                                                                                                                                      |
|                     | Power Supply             | 12V / 1.5A Adapter                                                                                                                                                                                                |
|                     | Flash                    | 128 MB NAND                                                                                                                                                                                                       |
|                     | DRAM                     | 1 GB DDR4                                                                                                                                                                                                         |
|                     | Surge Protection         | 4 kV surge protection                                                                                                                                                                                             |
|                     | Max Power Consumption    | 14.2 W (with USB2.0 connected)<br>7.1 W (without USB2.0 connected)                                                                                                                                                |
|                     | Dimensions ( W x D x H ) | 8.9 × 5.2 × 1.4 in (226 × 131 × 35 mm)                                                                                                                                                                            |
| SDN Support         | Hardware Controller      | Automatic Device Discovery<br>Intelligent Network Monitoring<br>Abnormal Event Warnings<br>Unified Configuration<br>Reboot Schedule<br>Captive Portal Configuration<br>ZTP (Zero-Touch Provisioning) <sup>1</sup> |
|                     | Software Controller      |                                                                                                                                                                                                                   |
|                     | Cloud-Based Controller   |                                                                                                                                                                                                                   |

1. Zero-Touch Provisioning is supported only when using Omada Cloud-Based Controller.

| Model                    |                                                       | ER707-M2                                                                                                                                                                                          |
|--------------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Performance <sup>3</sup> | Concurrent Session                                    | 500,000                                                                                                                                                                                           |
|                          | New Sessions /Second                                  | 6,000                                                                                                                                                                                             |
|                          | IPS Throughput                                        | TCP: 208 Mbps<br>UDP: 161 Mbps                                                                                                                                                                    |
|                          | DPI Throughput                                        | TCP: 1823 Mbps<br>UDP: 1272 Mbps                                                                                                                                                                  |
|                          | Static IP NAT Throughput (Upload / Download)          | 2365.17 Mbps / 2364.45 Mbps                                                                                                                                                                       |
|                          | DHCP NAT Throughput (Upload / Download)               | 2364.45 Mbps / 2366.04 Mbps                                                                                                                                                                       |
|                          | PPPoE NAT Throughput (Upload / Download)              | 2347.14 Mbps / 2348.29 Mbps                                                                                                                                                                       |
|                          | L2TP NAT Throughput (Upload / Download)               | 1308.86 Mbps / 974.10 Mbps                                                                                                                                                                        |
|                          | PPTP NAT Throughput (Upload / Download)               | 1236.27 Mbps / 1280.99 Mbps                                                                                                                                                                       |
|                          | 66 Byte Packet forwarding rate (Upload / Download)    | 1832.69 Mbps / 1741.84 Mbps                                                                                                                                                                       |
|                          | 1,518 Byte Packet forwarding rate (Upload / Download) | 2461.18 Mbps / 2457.32 Mbps                                                                                                                                                                       |
|                          | SSL VPN Throughput                                    | 132.24 Mbps                                                                                                                                                                                       |
|                          | GRE VPN <sup>1</sup> Throughput                       | 286.84 Mbps                                                                                                                                                                                       |
|                          | IPSec VPN Throughput                                  | ESP-SHA1-AES256: 673.3 Mbps, ESP-SHA256-AES256: 650.2 Mbps<br>ESP-SHA384-AES256: 629.3 Mbps, ESP-SHA512-AES256: 633.8 Mbps                                                                        |
|                          | L2TP VPN Throughput                                   | Unencrypted: 1243.7 Mbps; Encrypted: 561.0 Mbps                                                                                                                                                   |
|                          | OpenVPN Throughput                                    | 135.0 Mbps                                                                                                                                                                                        |
|                          | Wireguard VPN Throughput                              | 343Mbps                                                                                                                                                                                           |
| Basic Functions          | WAN Connection Type                                   | IPv4_Static IP; IPv4_Dynamic IP; IPv4_PPPOE; IPv4_L2TP; IPv4_PPTP<br>IPv6_PPP; IPv6_DHCPv6; IPv6_Static IP; IPv6_6in4; IPv6_Pass-Through<br>Mobile Broadband: 4G/3G modem for backup via USB port |
|                          | DHCP                                                  | DHCP Server<br>DHCPv6 PD Server (only in Standalone Mode)<br>DHCP Options Customization<br>DHCP Address Reservation<br>Multi-IP Interfaces<br>Multi-Net DHCP                                      |
|                          | MAC Clone                                             | Modify WAN/LAN MAC Address <sup>2</sup>                                                                                                                                                           |
|                          | IPTV                                                  | IGMP v2/v3 Proxy, Custom Mode, Bridge Mode                                                                                                                                                        |
|                          | IPv6                                                  | StaticIP / SLAAC / DHCPv6 / PPPoE / 6to4Tunnel / PassThrough / Non-Address mode                                                                                                                   |
|                          | Stateful ACL                                          | √                                                                                                                                                                                                 |
|                          | mDNS Repeater                                         | √                                                                                                                                                                                                 |
|                          | Quality of Service                                    | √                                                                                                                                                                                                 |
|                          | Bridge VLAN                                           | √                                                                                                                                                                                                 |
|                          | VLAN                                                  | 802.1Q VLAN                                                                                                                                                                                       |

1. GRE VPN is supported only in Standalone Mode.

2. LAN MAC Address can be modified only in Standalone Mode.

3. Rated specifications are based on test results using software version 1.1.0 Build 20230609 Rel. 34068. Device performance may vary as a result of the actual scenario.

| Model        |                   | ER707-M2                                                                                                                                                                                                                                                                                                                 |
|--------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Transmission | Load Balance      | Intelligent Load Balance<br>Application Optimized Routing<br>Link Backup (Timing <sup>1</sup> , Failover)<br>Online Detection                                                                                                                                                                                            |
|              | NAT               | One-to-One NAT<br>Multi-Net NAT<br>Virtual Server<br>Port Triggering <sup>2</sup><br>NAT-DMZ<br>FTP/H.323/SIP/IPSec/PPTP ALG<br>UPnP                                                                                                                                                                                     |
|              | Routing           | Static Routing<br>Policy Routing<br>RIP (only in Standalone Mode)<br>OSPF (only in Standalone Mode)                                                                                                                                                                                                                      |
|              | Session Limit     | IP-based Session Limit                                                                                                                                                                                                                                                                                                   |
|              | Bandwidth Control | IP/Port-based Bandwidth Control<br>Guarantee & Limited Bandwidth                                                                                                                                                                                                                                                         |
| VPN          | SSL VPN           | SSL VPN Server<br>60 SSL VPN Tunnels                                                                                                                                                                                                                                                                                     |
|              | IPSec VPN         | 100 IPSec VPN Tunnels<br>LAN-to-LAN, Client-to-LAN<br>Main, Aggressive Negotiation Mode<br>DES, 3DES, SHA1, AES128, AES192, AES256 Encryption Algorithm<br>IKE v1/v2<br>MD5, SHA1, SHA2-384 and SHA2-512 Authentication Algorithm<br>NAT Traversal (NAT-T)<br>Dead Peer Detection (DPD)<br>Perfect Forward Secrecy (PFS) |
|              | GRE               | Only in Standalone Mode                                                                                                                                                                                                                                                                                                  |
|              | WireGuard VPN     | √                                                                                                                                                                                                                                                                                                                        |
|              | PPTP VPN          | PPTP VPN Server<br>PPTP VPN Client (12) <sup>3</sup><br>60 Tunnels (Shared with L2TP)<br>PPTP with MPPE Encryption                                                                                                                                                                                                       |
|              | L2TP VPN          | L2TP VPN Server<br>L2TP VPN Client (12) <sup>3</sup><br>60 Tunnels (Shared with PPTP)<br>L2TP over IPSec                                                                                                                                                                                                                 |
|              | OpenVPN           | OpenVPN Server<br>OpenVPN Client (6) <sup>3</sup><br>66 OpenVPN Tunnels                                                                                                                                                                                                                                                  |

1. The Timing mode in Link Backup is supported only in Standalone Mode.
2. Port Triggering is supported only in Standalone Mode.
3. ER707-M2 can work as a VPN client and can connect with up to 12 PPTP/L2TP VPN servers and 6 OpenVPN servers.

| Model          |                     | ER707-M2                                                                                                                                                                                                                                              |
|----------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Security       | Attack Defense      | TCP/UDP/ICMP Flood Defense<br>Block TCP Scan (Stealth FIN/Xmas/Null)<br>Block Ping from WAN                                                                                                                                                           |
|                | Filtering           | Web Group Filtering <sup>1</sup><br>URL Filtering<br>Web Security <sup>1</sup>                                                                                                                                                                        |
|                | DNS Proxy           | DNSSEC, DoH, and DoT                                                                                                                                                                                                                                  |
|                | ARP Inspection      | Sending GARP Packets<br>ARP Scanning <sup>2</sup><br>IP-MAC Binding                                                                                                                                                                                   |
|                | Access Control      | Source/Destination IP Based Access Control                                                                                                                                                                                                            |
| Authentication | Web Authentication  | No Authentication<br>Simple Password <sup>3</sup><br>Hotspot (Local User / Voucher <sup>3</sup> / SMS <sup>3</sup> / Radius <sup>3</sup> )<br>External Radius Server<br>External Portal Server <sup>3</sup><br>LDAP <sup>3</sup>                      |
| Management     | Service             | Dynamic DNS (Dyndns, No-IP, Peanuthull, Comexe)                                                                                                                                                                                                       |
|                | Maintenance         | Web Management Interface<br>Remote Management<br>Export & Import Configuration<br>SNMP v1/v2c/v3<br>Diagnostics (Ping & Traceroute) <sup>4</sup><br>NTP Synchronize <sup>4</sup><br>Port Mirroring<br>CLI (only in Standalone Mode)<br>Syslog Support |
| Others         | Certification       | CE, FCC, RoHS                                                                                                                                                                                                                                         |
|                | Package Contents    | ER707-M2, Power Adapter, Quick Installation Guide                                                                                                                                                                                                     |
|                | System Requirements | Microsoft Windows 98SE, NT, 2000, XP, Vista™ or Windows 7/8/8.1/10<br>MAC OS, NetWare, UNIX or Linux                                                                                                                                                  |
|                | Environment         | Operating Temperature: 0 °C to 40 °C (32 °F to 104 °F)<br>Storage Temperature: -40 °C to 70 °C (-40 °F to 158 °F)<br>Operating Humidity: 10% to 90% non-condensing<br>Storage Humidity: 5% to 90% non-condensing                                      |

1. Web Group Filtering and Web Security are supported only in Standalone Mode.
2. ARP Scanning is supported only in Standalone Mode.
3. The following web authentication methods are supported only in Controller Mode: Simple Password, Voucher, SMS, Radius, External Portal Server, and LDAP.
4. Diagnostics (Ping & Traceroute) and NTP Synchronize are supported only in Standalone Mode.

# Ordering Information

## Host Router

| Model    | Description                    |
|----------|--------------------------------|
| ER707-M2 | Omada Multi-Gigabit VPN Router |

## SFP Modules

| Model       | Description                                                                                      |
|-------------|--------------------------------------------------------------------------------------------------|
| TL-SM311LS  | Gigabit SFP module, Single-mode, LC interface, Up to 20km distance                               |
| TL-SM311LM  | Gigabit SFP module, Multi-mode, LC interface, Up to 550m distance                                |
| TL-SM321A   | Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1550 nm/RX: 1310 nm, 20 km |
| TL-SM321A-2 | Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1550 nm/RX: 1310 nm, 2 km  |
| TL-SM321B   | Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1310 nm/RX: 1550 nm, 20 km |
| TL-SM321B-2 | Gigabit WDM Bi-Directional SFP Module, single-mode, LC connector, TX: 1310 nm/RX: 1550 nm, 2 km  |

## RJ45 SFP Modules

| Model     | Description                |
|-----------|----------------------------|
| TL-SM331T | 1000BASE-T RJ45 SFP Module |

\* Some models featured in this guide may be unavailable in your country or region. Visit TP-Link website for local sales information: [www.tp-link.com](http://www.tp-link.com).

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