Omada Router | Datasheet

ER7412-M2

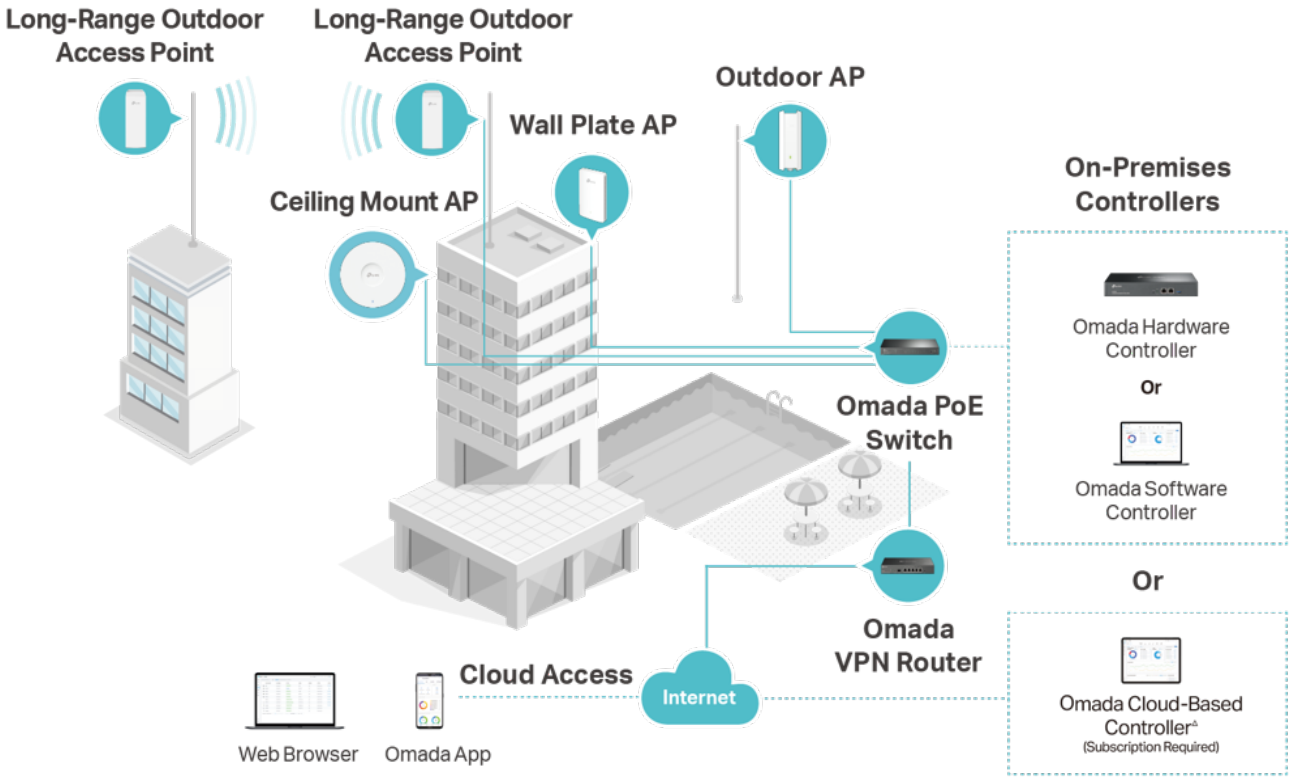
Omada Multi-Gigabit VPN Router

Highlights

- **Quad-core Cortex-A53 @2.0GHz CPU:** for outstanding performance
- **Two 2.5G Ports:** 1× 2.5G WAN and 1× 2.5G WAN/LAN ports provide high-bandwidth aggregation connectivity.
- **Multi-WAN Load Balancing:** Raises the utilization rate of multi-line broadband.
- **Centralized Management:** Cloud access and Omada app for ultra convenience and easy management.
- **High-Security VPN:** Supports multiple VPN protocols including OpenVPN/IPSec/SSL/ WireGuard/ L2TP VPN, helping users to establish remote connections more flexibly.
- **Extensive Security Features:** Protect your network and data with advanced firewall policies, DoS defense, IP/MAC/URL filtering, DPI, IPS/IDS, and more security functions.

Omada Solution

Omada's 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.



Hassle-Free Cloud or On-Premises Controllers

Zero-Touch Provisioning (ZTP)*

Multi-Site Cloud Management

Intelligent Monitoring

Specifications

Model		ER7412-M2
Product Description		Omada Multi-Gigabit VPN Router
Hardware	CPU	Quad-core ARMv8
	Standards and Protocols	IEEE 802.3, IEEE802.3u, IEEE802.3ab, IEEE802.3z, IEEE 802.3x, IEEE 802.1q, TCP/IP, DHCP, ICMP, NAT, PPPoE, NTP, HTTP, HTTPS, DNS, IPSec, PPTP, L2TP, OpenVPN, WireGuard VPN, GRE VPN, SNMP,
	Interface	1× 2.5G RJ45 WAN/LAN Port, 1× 2.5G RJ45 WAN/LAN Port, 2× Gigabit SFP WAN/LAN Port, 8× Gigabit RJ45 WAN/LAN Ports 1× RJ45 Console Port
	USB	1 USB3.0 (supports USB LTE dongle and USB Storage)
	Network Media	10BASE-T: UTP category 3, 4, 5 cable (Max 100 m) EIA/TIA-568 100Ω STP (Max 100 m) 100BASE-TX: UTP category 5, 5e cable (Max 100 m) EIA/TIA-568 100Ω STP (Max 100 m) 1000BASE-T: UTP category 5, 5e, 6 cable (Max 100 m) 2500BASE-T: UTP category 5, 5e, 6 cable (Max 100 m)
	Button	Reset button
	Power Supply	100–240 VAC, 50/60 Hz
	Flash	128MB NAND
	DRAM	1GB DDR4
	Max Power Consumption	18.5W (With USB 3.0 connected)
	Surge Protection	4 kV surge protection
	Mounting	Desktop/ Rackmount
	Dimensions (W x D x H)	11.6 × 7.1 × 1.7 in (294 × 180 × 44 mm)
SDN Support	Hardware Controller	Automatic Device Discovery Intelligent Network Monitoring Abnormal Event Warnings Unified Configuration Reboot Schedule Captive Portal Configuration ZTP (Zero-Touch Provisioning)[1]
	Software Controller	
	Cloud-Based Controller	

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

Model		ER7412-M2
Performance[1]	Concurrent Session	1,000,000
	New Sessions /Second	7,000
	Stateful Firewall (DPI)	2.2Gbps
	Static IP NAT Throughput (Upload / Download)	2345.71 Mbps / 2351.22 Mbps
	DHCP NAT Throughput (Upload / Download)	2353.41 Mbps / 2353.40 Mbps
	PPPoE NAT Throughput (Upload / Download)	2336.52 Mbps / 2336.08 Mbps
	L2TP NAT Throughput (Upload / Download)	1937.53 Mbps / 1761.82 Mbps
	PPTP NAT Throughput (Upload / Download)	1757.54 Mbps / 2011.33 Mbps
	66 Byte Packet forwarding rate (Upload / Download)	1833 Mbps / 1835 Mbps
	1,518 Byte Packet forwarding rate (Upload / Download)	2461 Mbps / 2461 Mbps
	IPSec VPN Throughput	ESP-SHA1-AES256: 1125.60 Mbps ESP-SHA256-AES256: 1133.1 Mbps ESP-SHA384-AES256: 1126.6 Mbps ESP-SHA512-AES256: 1132.8 Mbps
	GRE	Unencrypted: 1153.0 Mbps Encrypted: 559.2 Mbps
	WireGuard VPN	771.6 Mbps
	SSL VPN	263.1 Mbps
	OpenVPN	UDP: 266.2 Mbps
	L2TP VPN Throughput	Unencrypted: 2724.5 Mbps Encrypted: 1018.4Mbps
	PPTP VPN Throughput	Unencrypted: 3035 Mbps Encrypted: 534.6 Mbps
Basic Functions	WAN Connection Type	Static IP/Dynamic IP PPPoE (supports MRU Configuration) PPTP L2TP Mobile Broadband: 4G/3G modem for backup via USB port
	DHCP	DHCP Server DHCPv6 PD Server (only in Standalone Mode) DHCP Options Customization DHCP Address Reservation Multi-IP Interfaces Multi-Net DHCP
	MAC Clone	Modify WAN/LAN Address[2]
	IPTV	IGMP v2/v3 Proxy, Custom Mode, Bridge Mode
	IPv6	StaticIP / SLAAC / DHCPv6 / PPPoE / 6to4Tunnel / PassThrough / Non-Address mode

1. Rated specifications are based on test results using software version 1.0.0. Device performance may vary as a result of the actual scenario.
2. LAN MAC Address can be modified only in Standalone Mode

Model		ER7412-M2
Basic Functions	mDNS Repeater	√
	Quality of Service	√
	Bridge VLAN	√
	VLAN	802.1Q VLAN
Transmission	Load Balance	Intelligent Load Balance Application Optimized Routing Link Backup (Timing, Failover) Online Detection
	NAT	One-to-One NAT Multi-Net NAT[2] Virtual Server Port Triggering[1] NAT-DMZ FTP/H.323/SIP/IPSec/PPTP ALG UPnP
	Routing	Static Routing Policy Routing RIP[2] OSPF[2]
	Session Limit	IP-based Session Limit
	Bandwidth Control	IP/Port-based Bandwidth Control
VPN	IPSec VPN	150 IPSec VPN Tunnels LAN-to-LAN, Client-to-LAN Main, Aggressive Negotiation Mode DES, 3DES, AES128, AES192, AES256 Encryption Algorithm IPsec Failover IKE v1/v2 MD5, SHA1, SHA2-384 and SHA2-512 Authentication Algorithm NAT Traversal (NAT-T) Dead Peer Detection (DPD) Perfect Forward Secrecy (PFS)
	PPTP VPN	PPTP VPN Server PPTP VPN Client (15)[3] 150 Tunnels PPTP with MPPE Encryption
	L2TP VPN	L2TP VPN Server L2TP VPN Client (15)[3] 150 Tunnels L2TP over IPSec
	GRE	Only in Standalone Mode
	WireGuard VPN	√
	SSL VPN	80 Tunnels
	OpenVPN	OpenVPN Server OpenVPN Client (11)[3] 121 OpenVPN Tunnels "Certificate + Account" Mode Full Mode

1. Port Triggering is supported only in Standalone Mode.
2. RIP and OSPF are supported only in Standalone Mode.
3. ER7412-M2 can work as a VPN client and can connect with up to 32 PPTP/L2TP VPN servers and 10 OpenVPN servers.

Model		ER7412-M2
Security	Attack Defense	TCP/UDP/ICMP Flood Defense Block TCP Scan (Stealth FIN/Xmas/Null) Block Ping from WAN
	Filtering	Web Group Filtering[1] URL Filtering Web Security[1]
	DNS Proxy	DNSSEC, DoH, and DoT
	ARP Inspection	Sending GARP Packets ARP Scanning[2] IP-MAC Binding
	DPI	Deep Packet Inspection
	IPS/IDS	Intrusion Detection/Prevention
	ACL	Source/Destination IP Based ACL Stateful ACL IPv4/IPv6 ACL National Based ACL
Authentication	Web Authentication	No Authentication Simple Password[3] Hotspot (Local User / Voucher[3] / SMS[3] / Radius[3]) External Radius Server External Portal Server[3] LDAP
Management	Service	Dynamic DNS (Dyndns, No-IP, Peanuthull, Comexe, DDNS Customization)
	Maintenance	Web Management Interface Remote Management Export & Import Configuration SNMP v1/v2c/v3 Diagnostics (Ping & Traceroute)[4] NTP Synchronize[4] Port Mirroring CLI (only in Standalone Mode) Syslog Support
Others	Certification	CE, FCC, RoHS
	Package Contents	ER7412-M2, Power Cord, Quick Installation Guide, Rackmount Kit, RJ45 Console Cord
	System Requirements	Microsoft Windows 98SE, NT, 2000, XP, Vista™ or Windows 7/8/8.1/10/11 MAC OS, NetWare, UNIX or Linux
	Environment	Operating Temperature: 0 °C to 45 °C (32 °F to 113 °F) Storage Temperature: -40 °C to 70 °C (-40 °F to 158 °F) Operating Humidity: 10% to 90% non-condensing 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, and External Portal Server.
4. Diagnostics (Ping & Traceroute) and NTP Synchronize are supported only in Standalone Mode.

Ordering Information

Host Switch

Model	Description
ER7412-M2	Omada Multi-Gigabit VPN Router

SFP Modules

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

RJ45 SFP/SFP+ Modules

Model	Description
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.