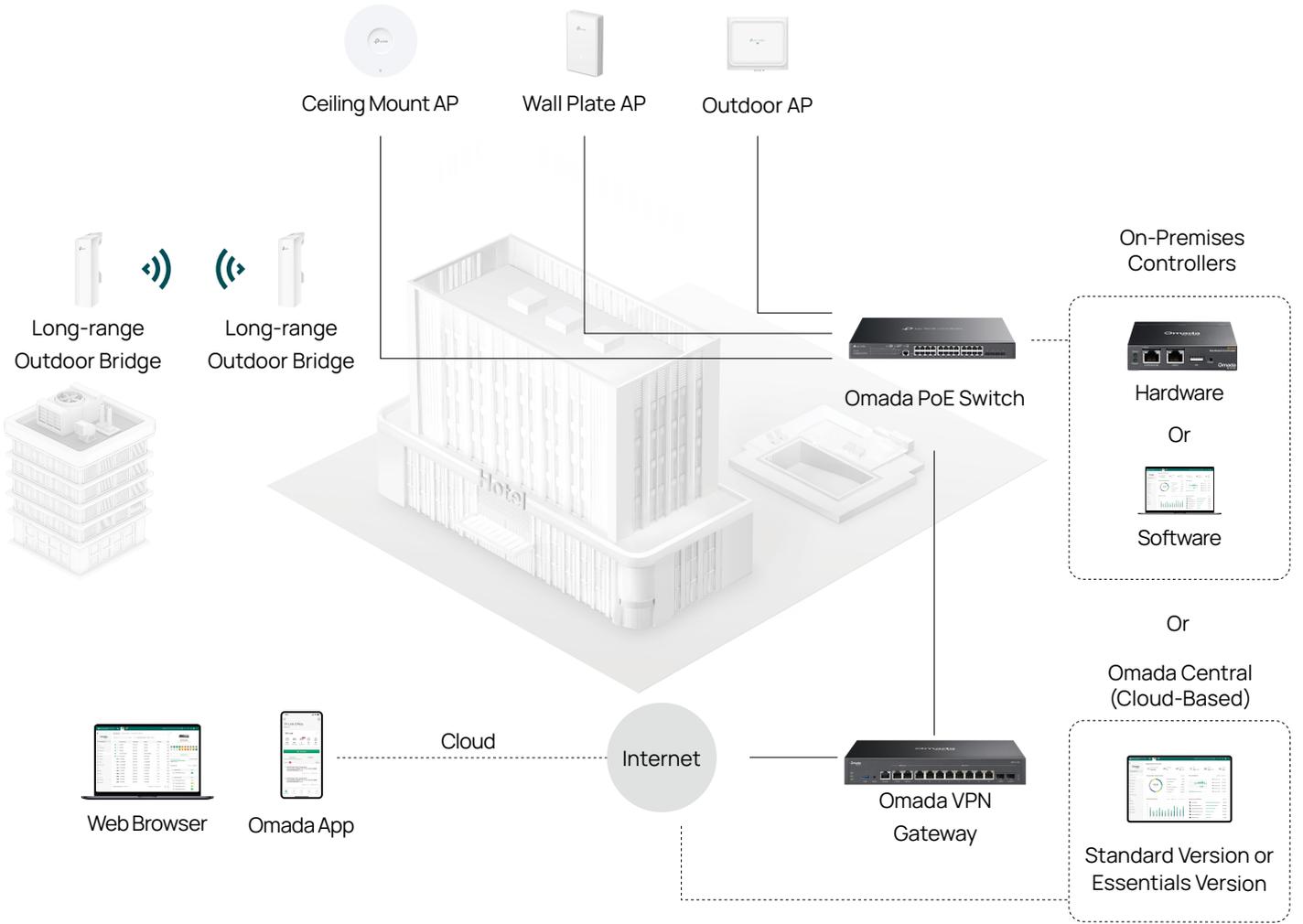# Omada Gateway | Datasheet

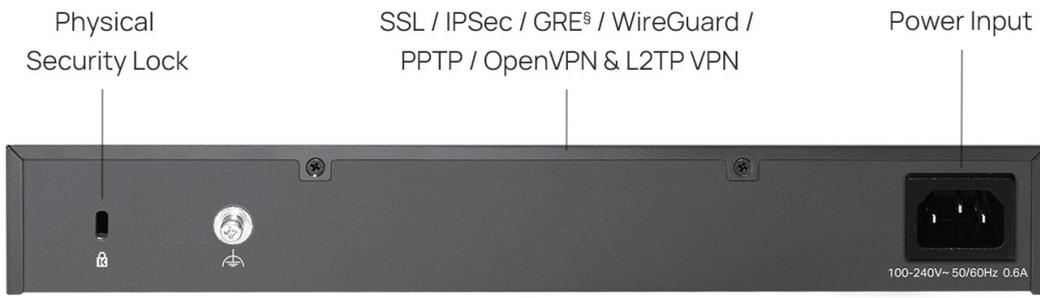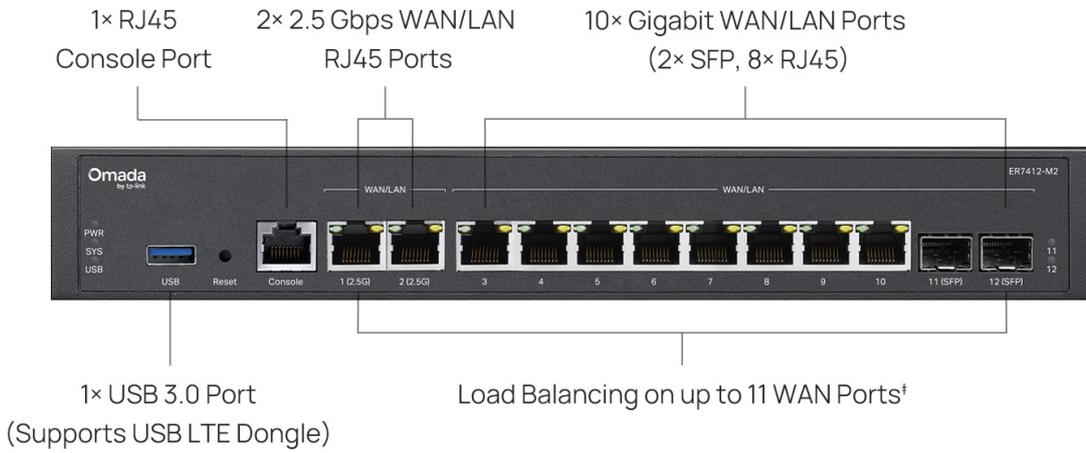## ER7412-M2
Omada Multi-Gigabit VPN Gateway

Highlights

- Quad-core @2.0GHz CPU
- 2× 2.5G RJ45 WAN/LAN ports
- 10× Gigabit WAN/LAN Ports (2× SFP, 8× RJ45)
- 1× USB 3.0 Port (Supports USB storage, and LTE backup with LTE dongle)
- Load Balancing on up to 11 WAN ports increases the utilization rate of multi-line broadband
- High-security SSL/IPSec/GRE/WireGuard/PPTP/L2TP VPN & OpenVPN
- Centralized cloud management via the web or the Omada app
- DoS/DDoS protection, IP/MAC/URL filtering, DPI, and IPS/IDS for enhanced security

Omada Solution

Ceiling Mount AP

Wall Plate AP

Outdoor AP

Long-range Outdoor Bridge

Long-range Outdoor Bridge

Omada PoE Switch

On-Premises Controllers

Hardware

Or

Software

Or

Omada Central (Cloud-Based)

Web Browser

Omada App

Cloud

Internet

Omada VPN Gateway

Standard Version or Essentials Version

Product Pictures

1× RJ45 Console Port

2× 2.5 Gbps WAN/LAN RJ45 Ports

10× Gigabit WAN/LAN Ports (2× SFP, 8× RJ45)

Omada
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ER7412-M2

PWR
SYS
USB

USB   Reset   Console   1 (2.5G)   2 (2.5G)   3   4   5   6   7   8   9   10   11 (SFP)   12 (SFP)   11 12

WAN/LAN   WAN/LAN

1× USB 3.0 Port (Supports USB LTE Dongle)

Load Balancing on up to 11 WAN Ports‡

Physical Security Lock

SSL / IPSec / GRE§ / WireGuard / PPTP / OpenVPN & L2TP VPN

Power Input

100-240V~ 50/60Hz 0.6A

DoS/DDos Protection, IP/MAC/URL Filtering, DPI, IPS/IDS

Rackmount or Desktop

Omada
by tp-link

Omada
by tp-link

ER7412-M2

PWR
SYS
USB

USB   Reset   Console   1 (2.5G)   2 (2.5G)   3   4   5   6   7   8   9   10   11 (SFP)   12 (SFP)   11 12

WAN/LAN   WAN/LAN

1.7 in (44 mm)

7.1 in (180 mm)

11.6 in (294 mm)

§These functions are supported only in Standalone Mode.
‡At least one WAN/LAN port needs to function as a LAN port.

Specifications

Model		ER7412-M2
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, LLDP
	Interface	2× 2.5G RJ45 WAN/LAN Ports, 2× Gigabit SFP WAN/LAN Ports, 8× Gigabit RJ45 WAN/LAN Ports 1× RJ45 Console Port
	USB	1 USB3.0 (supports USB LTE dongle and USB Storage)[1]
	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/Rack Mount
	Dimensions (W x D x H)	11.6 × 7.1 × 1.7 in (294 × 180 × 44 mm)
	Net Weight	1.168 Kg
	MTBF	1192088h@25℃ 1031636h@40℃
SDN Support	Hardware Controller	Automatic Device Discovery Intelligent Network Monitoring Abnormal Event Warnings Unified Configuration Reboot Schedule Captive Portal Configuration ZTP (Zero-Touch Provisioning)[2]
	Software Controller	
	Cloud-Based Controller	

1. For the complete compatibility list of 4G/3G modem, go to https://www.tp-link.com/en/omada-router/compatibility/
2. 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
	DPI Throughput	2.2 Gbps
	IPS Throughput	TCP: 2248 Mbps UDP: 2140 Mbps
	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)	Upload: 3,471,591pps Download: 3,475,379pps
	1,518 Byte Packet forwarding rate (Upload / Download)	Upload: 202,652pps Download: 202,652pps
	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: 2274 Mbps Encrypted: 1192 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 WAN DHCP 60
	MAC Clone	Modify WAN/LAN MAC Address[2]

1. Rated specifications are based on test results using specific software version. 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	IPTV	IGMP v2/v3 Proxy, Custom Mode, Bridge Mode
	IPv6	StaticIP / SLAAC / DHCPv6 / PPPoE / 6to4Tunnel / PassThrough / Non-Address mode
	mDNS Repeater	√
	Quality of Service	√
	Bridge VLAN	√
	LAN DNS	√
	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 Virtual Server Port Triggering[1] NAT-DMZ FTP/H.323/SIP/IPSec/PPTP ALG UPnP Disable NAT
	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
	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 15 PPTP/L2TP VPN servers and 11 OpenVPN servers.

Model		ER7412-M2
VPN	WireGuard VPN	√
	GRE	√ (Only in Standalone Mode)
	SD-WAN	√ (Only in Controller mode)
	SSL VPN	80 Tunnels
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 Categories and URLs Filtering Web Security[1]
	DNS Proxy	DNSSEC, DoH, DoT, DNS Override
	ARP Inspection	Sending GARP Packets ARP Scanning[2] IP-MAC Binding ARP Detection
	DPI	Deep Packet Inspection Support 2421 type Applications
	IPS/IDS	Intrusion Detection/Prevention
	Access Control	Source/Destination IP Based ACL Stateful ACL IPv4/IPv6 ACL National Based ACL FQDN
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) 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 ℃ to 45 ℃ (32 ℉ to 113 ℉) Storage Temperature: -40 ℃ to 70 ℃ (-40 ℉ to 158 ℉) 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. NTP Synchronize is supported only in Standalone Mode.

Ordering Information

Host Switch

Model	Description
ER7412-M2	Omada Multi-Gigabit VPN Gateway

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