



# MAX Series

## User Manual

### Pepwave Products:

MAX 700 / HD2 / HD2 IP67 / HD2 Mini / HD2 MBX 5G / HD2 MBX / HD Dome / HD Dome Pro / HD4 / HD4 MBX 5G / HD4 MBX / MBX Mini / HD4 IP67 / Transit / Transit Duo / Transit 5G / Transit Core / Transit Mini / Transit Pro E / Transit Duo Pro / BR1 Classic / BR1 MK2 / BR1 Slim / BR1 ENT / BR1 M2M / BR1 Mini (HW2) / BR1 Mini (HW3) / BR1 Mini 5G / BR1 Mini Core / BR1 Mini Core (HW3) / BR1 Mini M2M / BR1 ESN / BR1 Pro LTE / BR1 Pro (CAT-20) / BR1 Pro 5G / BR2 Pro / BR1 IP55 / BR1 IP67 / BR2 IP55 / On-The-Go / HD2 with MediaFast / HD4 with MediaFast / BR2 Micro / UBR LTE / UBR Plus / PDX

Pepwave Firmware 8.4.0  
April 2024

#### COPYRIGHT & TRADEMARKS

Specifications are subject to change without notice.

Copyright © 2021 Peplink Pepwave Ltd. All Rights Reserved. Pepwave and the Pepwave logo are trademarks of Peplink International Ltd. Other brands or products mentioned may be trademarks or registered trademarks of their respective owners.

# Table of Contents

<b>Introduction and Scope</b>	<b>4</b>
<b>Glossary</b>	<b>5</b>
<b>1 Product Features</b>	<b>6</b>
1.1 Supported Network Features	6
1.2 Other Supported Features	9
<b>2 Pepwave MAX Mobile Router Overview</b>	<b>10</b>
2.1 MAX 700	10
2.2 MAX HD2	12
2.3 MAX HD2 IP67	13
2.4 MAX HD2 mini	15
2.5 MAX HD Dome	16
2.6 MAX HD Dome Pro	18
2.7 MAX Transit / MAX Transit Duo (CAT-12)	20
2.8 MAX Transit (CAT-18)	22
2.9 MAX Transit 5G	24
2.10 MAX Transit Mini	26
2.11 MAX Transit Pro E	27
2.12 MAX Transit Core	29
2.13 MAX Transit Duo Pro	31
2.14 MAX BR1 ESN	33
2.15 MAX HD2 and HD4 with MediaFast	34
2.16 MAX HD4	36
2.17 MAX HD4 MBX (CAT-12)	39
2.18 MAX HD2/4 MBX (CAT-20)	42
2.19 MAX HD2/4 MBX (5G)	44
2.20 MAX MBX Mini	47
2.21 MAX HD4 IP67	49
2.22 MAX BR1 Classic	50
2.23 MAX BR1 MK2	52
2.24 MAX BR1 Slim	54
2.25 MAX BR1 Mini (HW2)	56
2.26 MAX BR1 Mini (HW3)	58
2.27 MAX BR1 Mini 5G	59
2.28 MAX BR1 Mini Core	60

2.29 MAX BR1 Mini Core (HW3)	61
2.30 MAX BR1 Mini M2M	62
2.31 MAX BR1 M2M	63
2.32 MAX BR1 ENT	65
2.33 MAX BR1 Pro	66
2.34 MAX BR1 Pro (CAT-20)	68
2.35 MAX BR1 Pro 5G	70
2.36 MAX BR2 Pro	72
2.37 MAX Hotspot	74
2.38 MAX BR1 IP55	75
2.39 MAX BR2 IP55	77
2.40 MAX BR1 IP67	78
2.41 MAX On-The-Go	79
2.42 BR2 Micro	80
2.43 UBR LTE	81
2.44 UBR Plus	83
2.45 PDX	84
<b>3 Installation</b>	<b>85</b>
<b>4 Mounting the Unit</b>	<b>85</b>
<b>5 Connecting to the Web Admin Interface</b>	<b>85</b>
<b>6 AP</b>	<b>87</b>
<b>7 System</b>	<b>87</b>
<b>8 Status</b>	<b>87</b>
<b>9 Ignition Sensing</b>	<b>87</b>
<b>Please refer to this link for the details of Ignition Sensing.</b>	<b>87</b>
<b>Appendix A: Restoration of Factory Defaults</b>	<b>88</b>
<b>Appendix B: FusionSIM Manual</b>	<b>88</b>
<b>Appendix C: Ports usage overview</b>	<b>88</b>
<b>Appendix D: Declaration</b>	<b>90</b>

## Introduction and Scope

Pepwave routers provide link aggregation and load balancing across multiple WAN connections, allowing a combination of technologies like 3G HSDPA, EVDO, 4G LTE, Wi-Fi, external WiMAX dongle, and satellite to be utilized to connect to the Internet.

The MAX wireless SD-WAN router series has a wide range of products suitable for many different deployments and markets. Entry level SD-WAN models such as the MAX BR1 are suitable for SMEs or branch offices. High-capacity SD-WAN routers such as the MAX HD2 are suitable for larger organizations and head offices.

This manual covers setting up Pepwave routers and provides an introduction to their features and usage.

### Tips

Want to know more about Pepwave routers? Visit our YouTube Channel for a video introduction!



<https://youtu.be/13M-JHRAICA>

## Glossary

The following terms, acronyms, and abbreviations are frequently used in this manual:

Term	Definition
3G	3rd generation standards for wireless communications (e.g., HSDPA)
4G	4th generation standards for wireless communications (e.g., LTE)
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
EVDO	Evolution-Data Optimized
FQDN	Fully Qualified Domain Name
HSDPA	High-Speed Downlink Packet Access
HTTP	Hyper-Text Transfer Protocol
ICMP	Internet Control Message Protocol
IP	Internet Protocol
LAN	Local Area Network
MAC Address	Media Access Control Address
MTU	Maximum Transmission Unit
MSS	Maximum Segment Size
NAT	Network Address Translation
PPPoE	Point to Point Protocol over Ethernet
QoS	Quality of Service
SNMP	Simple Network Management Protocol
TCP	Transmission Control Protocol
UDP	User Datagram Protocol
VPN	Virtual Private Network
VRRP	Virtual Router Redundancy Protocol
WAN	Wide Area Network
WINS	Windows Internet Name Service
WLAN	Wireless Local Area Network

# 1 Product Features

Pepwave routers enable all LAN users to share broadband Internet connections, and they provide advanced features to enhance Internet access. Our Max BR wireless routers support multiple SIM cards. They can be configured to switch from using one SIM card to another SIM card according to different criteria, including wireless network reliability and data usage.

Our MAX HD series wireless routers are embedded with multiple 4G LTE modems, and allow simultaneous wireless Internet connections through multiple wireless networks. The wireless Internet connections can be bonded together using our SpeedFusion technology. This allows better reliability, larger bandwidth, and increased wireless coverage compared to use only one 4G LTE modem.

Below is a list of supported features on Pepwave routers. Features vary by model. For more information, please see [peplink.com/products](http://peplink.com/products).

## 1.1 Supported Network Features

### 1.1.1 WAN

- Ethernet WAN connection in full/half duplex
- Static IP support for PPPoE
- Built-in cellular modems
- USB mobile connection(s)
- Wi-Fi WAN connection
- Network address translation (NAT)/port address translation (PAT)
- Inbound and outbound NAT mapping
- IPsec NAT-T and PPTP packet passthrough
- MAC address clone and passthrough
- Customizable MTU and MSS values
- WAN connection health check
- Dynamic DNS (supported service providers: [changeip.com](http://changeip.com), [dyndns.org](http://dyndns.org), [no-ip.org](http://no-ip.org), [tzo.com](http://tzo.com) and [DNS-O-Matic](http://DNS-O-Matic))
- Ping, DNS lookup, and HTTP-based health check

### 1.1.2 LAN

- Wi-Fi AP
- Ethernet LAN ports
- DHCP server on LAN

- Extended DHCP option support
- Static routing rules
- VLAN on LAN support

### 1.1.3 VPN

- SpeedFusion VPN with SpeedFusion™
- SpeedFusion VPN performance analyzer
- X.509 certificate support
- VPN load balancing and failover among selected WAN connections
- Bandwidth bonding and failover among selected WAN connections
- IPsec VPN for network-to-network connections (works with Cisco and Juniper)
- Ability to route Internet traffic to a remote VPN peer
- Optional pre-shared key setting
- SpeedFusion™ throughput, ping, and traceroute tests
- PPTP server
- PPTP and IPsec passthrough

### 1.1.4 Firewall

- Outbound (LAN to WAN) firewall rules
- Inbound (WAN to LAN) firewall rules per WAN connection
- Intrusion detection and prevention
- Specification of NAT mappings
- Outbound firewall rules can be defined by destination domain name

### 1.1.5 Captive Portal

- Splash screen of open networks, login page for secure networks
- Customizable built-in captive portal
- Supports linking to outside page for captive portal

### 1.1.6 Outbound Policy

- Link load distribution per TCP/UDP service
- Persistent routing for specified source and/or destination IP addresses per TCP/UDP service
- Traffic prioritization and DSL optimization
- Prioritize and route traffic to VPN tunnels with Priority and Enforced algorithms

### 1.1.7 AP Controller

- Configure and manage Pepwave AP devices
- Review the status of connected APs

#### **1.1.8 QoS**

- Quality of service for different applications and custom protocols
- User group classification for different service levels
- Bandwidth usage control and monitoring on group- and user-level
- Application prioritization for custom protocols and DSL/cable optimization



## 1.2 Other Supported Features

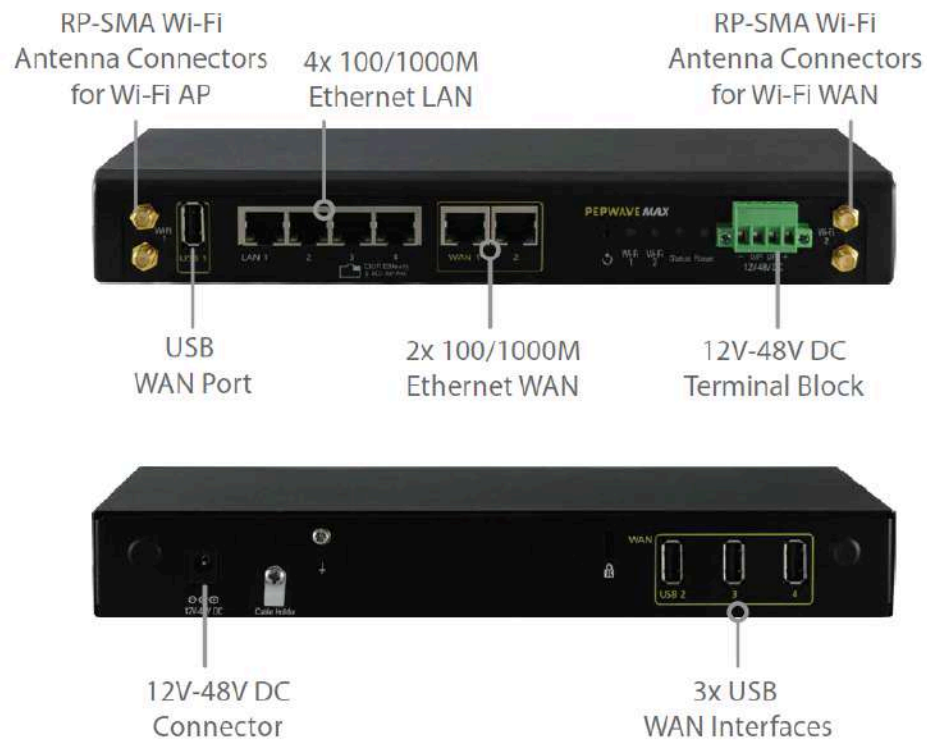
- User-friendly web-based administration interface
- HTTP and HTTPS support for web admin interface (default redirection to HTTPS)
- Configurable web administration port and administrator password
- Firmware upgrades, configuration backups, ping, and traceroute via web admin interface
- Remote web-based configuration (via WAN and LAN interfaces)
- Time server synchronization
- SNMP
- Email notification
- Read-only user access for web admin
- Shared IP drop-in mode
- Authentication and accounting by RADIUS server for web admin
- Built-in WINS servers\*
- Syslog
- SIP passthrough
- PPTP packet passthrough
- Event log
- Active sessions
- Client list
- WINS client list \*
- UPnP / NAT-PMP
- Real-time, hourly, daily, and monthly bandwidth usage reports and charts
- IPv6 support
- Support USB tethering on Android 2.2+ phones

\* Not supported on MAX Surf-On-The-Go, and BR1 variants

## 2 Pepwave MAX Mobile Router Overview

### 2.1 MAX 700

#### 2.1.1 Panel Appearance



**Note:**

- For proper Wi-Fi performance and operations, please ensure all 4 Wi-Fi antenna connectors (labeled Wi-Fi 1 and Wi-Fi 2) have antennas attached.
- The LED indicators of Wi-Fi 1 & 2 shown as below is referring to the default settings of Wi-Fi Operation mode is WAN + AP under the AP.

## 2.1.2 LED Indicators

The statuses indicated by the front panel LEDs are as follows:

Status Indicators		
<b>Status</b>	OFF	System initializing
	Red	Booting up or busy
	Blinking red	Boot up error
	Blue	Ready

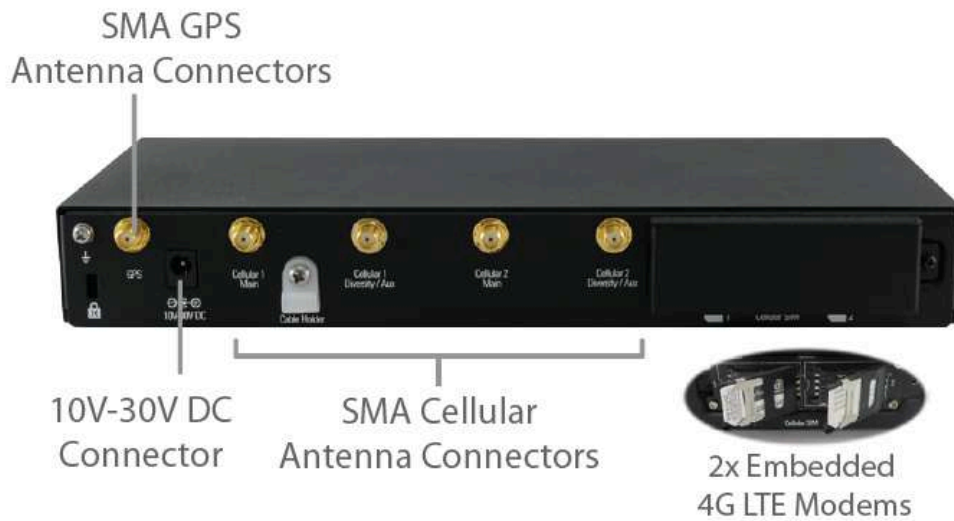
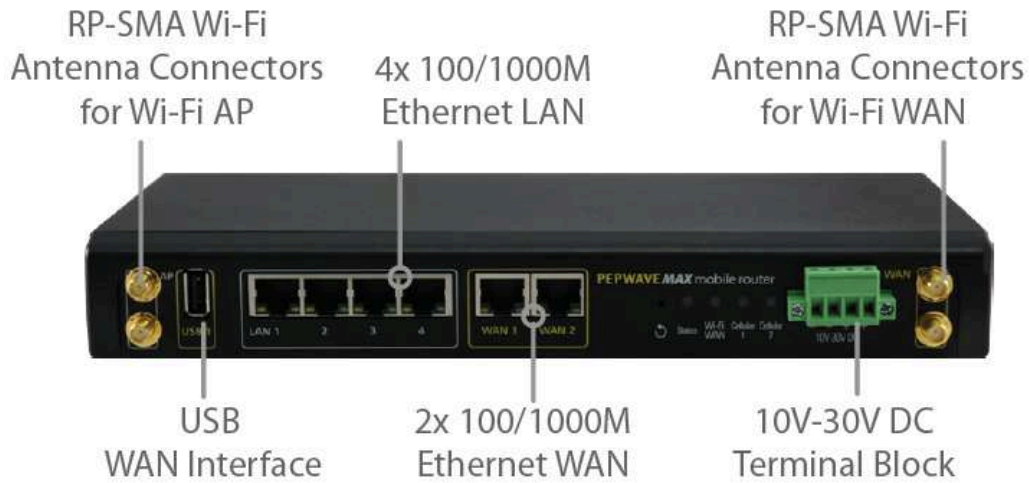
Wi-Fi AP Indicators		
<b>Wi-Fi 1</b>	OFF	WiFi AP is disabled.
	ON	WiFi AP is enabled.

Wi-Fi WAN Indicators		
<b>Wi-Fi 2</b>	OFF	Disabled Intermittent
	Blinking slowly	Connecting to wireless network(s)
	Blinking	Connected to wireless network(s) with traffic
	ON	Connected to wireless network(s) without traffic

LAN and Ethernet WAN Ports		
<b>Green LED</b>	ON	10 / 100/ 1000 Mbps
<b>Orange LED</b>	Blinking	Data is transferring
	OFF	No data is being transferred or port is not connected
<b>Port Type</b>	Auto MDI/MDI-X ports	

## 2.2 MAX HD2

### 2.2.1 Panel Appearance



### 2.2.2 LED Indicators

The statuses indicated by the front panel LEDs are as follows:

Status Indicators		
<b>Status</b>	OFF	System initializing
	Red	Booting up or busy
	Blinking red	Boot up error
	Green	Ready

Wi-Fi WAN Indicators		
<b>Wi-Fi WAN</b>	OFF	Disabled Intermittent
	Blinking slowly	Connecting to wireless network(s)
	Blinking	Connected to wireless network(s) with traffic
	ON	Connected to wireless network(s) without traffic

Cellular Indicators		
<b>Cellular 1 / Cellular 2</b>	OFF	Disabled or no SIM card inserted
	Blinking slowly	Connecting to network(s)
	Green	Connected to network(s)

LAN and Ethernet WAN Ports		
<b>Green LED</b>	ON	1000 Mbps
	OFF	10 Mbps / 100 Mbps or port is not connected
<b>Orange LED</b>	ON	Port is connected without traffic
	Blinking	Data is transferring
	OFF	Port is not connected
<b>Port Type</b>	Auto MDI/MDI-X ports	

## 2.3 MAX HD2 IP67

### 2.3.1 Panel Appearance



### 2.3.2 LED Indicators

The statuses indicated by the front panel LEDs are as follows:

Status Indicators		
Status	OFF	System initializing
	Red	Booting up or busy
	Blinking red	Boot up error
	Green	Ready

## 2.4 MAX HD2 mini

### 2.4.1 Panel Appearance



\* With 48V DC power, all 3 Ethernet ports can act as 802.3af PoE or 24V Passive PoE outputs

### 2.4.2 LED Indicators

The statuses indicated by the front panel LEDs are as follows:

Status Indicators		
Status	OFF	System initializing
	Red	Booting up or busy
	Blinking red	Boot up error
	Green	Ready

Cellular Indicators		
Cellular 1 / Cellular 2	OFF	Disabled or no SIM card inserted
	Blinking slowly	Connecting to network(s)
	Green	Connected to network(s)