User manual

Product name: WIFI ROUTER

Model: RM40

Brief description：

    Hardware.

    MR40 uses the latest MMT7621A wireless solution with clock frequency up to 880MHZ, providing 5 Gigabit auto MDI/MDIX Ethernet ports, 1 x USB 2.0 port, 1 x PCI-E, 1 x M.2, 1 x Micro SD card.

    Wireless.

    Support IEEE802.11AC/N/G/B/A wireless protocol, maximum wireless rate up to 1200Mbps, 6 ×5Dbi high gain antennas for better performance and coverage

Product Images

Hardware

Latest dual-core networking chipset MT7621A at 880Mhz
DDR3 memory 256MB
SPI FLASH 16MB
Provide 5 Gigabit auto MDI/MDIX Ethernet ports
            1*USB2.0 port and 1*PCI-E 1*M.2 port
Provide 1 Micro SD card slot
Support load balancing

Wireless:

Support IEEE802.11AC/N/G/B/A wireless protocol,
the maximum wireless rate can reach 1200Mbps,
6×5Dbi high gain antenna, better performance and more coverage.

Software

OpenWRT pre-installed.
Firmware support rooter.
Firmware support Quectel EC25 series EM/EP06 BG96 EM12 EM20 EM160 RM500Q RM502Q
RM520N Fibocom L850 L860 FM150 module, etc.
Modem band lock support

MR40	Hardware Specifications	
Hardware Specifications	MT7621A+MT7612+MT7603 Dual Core 880MHZ DDR3 memory 256MB SPI FLASH 16MB
Protocol Standards	IEEE802.11n/g/b/a/ac,IEEE802.3/802.3u
Wireless Rate	Dual-band concurrent up to 1200Mbps
Operating band	2.4GHz 5.8GHz
Output Power	11n：17dBm±1dBm 11g: 17dBm±1dBm 11b: 19dBm±1dBm 11a: 19dBm±1dBm 11ac: 18dBm±1dBm
Receiving sensitivity	11N HT20 MCS7: -72dBm 11N HT40 MCS7: -69dBm 11G 54Mbps: -74dBm 11B 11Mbps: -86dBm 11A 54Mbps: -73dBm 11AC VHT20 MCS8: -66dBm
Antenna	2 x 5dbi high gain omni-directional wifi antennas,
Interface	1*10/100M/1000M WAN port with automatic MDI/MDIX with LED 4*10/100M/1000M LAN ports, auto MDI/MDIX with LED 1*USB 2.0 port 1*PCI-E 1*M.2 1*SIM card 1*SD card
LED	power/sys/2.4G/5.8G/USB
Button	1 Reset button
Power adapter	DC 12/3000mA
Maximum power consumption	< 24W
Color scheme	Black
Accessories and Packaging	Egg separator paper tray 32*21*6cm *1PCS Whole box: 43.1*28.5*34.8 10PCS Power adapter 12V/2A *1PCS Super Category 5 network cable *1PCS

MR40	Software Specifications	
Factory default settings	IP address:192.168.1.1 User/password:root/admin
WAN access mode	PPPoE, dynamic IP, static IP
Operating Mode	ROUTER (can be customized to add AP mode);
DHCP server	DHCP servers. Client lists. Static address assignment.
Virtual Server	Port forwarding. DMZ hosting.
Supportable system	Original SDK, openwrt
Security Settings	Wireless encryption, support WEP, WPA, WPA2 and other security encryption modes
DDNS	Support
VPN	Support
WEB Theme Switching	Support
Bandwidth Control	Support
Static Routing	Support
System log	Support
Other useful functions	Configuration file import and export Web software upgrade …
MR40	Other specifications	
Working Environment	Operating temperature: 0℃ to 40℃. Storage temperature: -40℃ to 70℃. Operating humidity: 10% to 90%RH non-condensing. Storage humidity: 5% to 90%RH non-condensing.

FCC Declaration:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This device needs to be installed by a professional.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This device is intended only for OEM integrators under the following conditions:

1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and the Max allowed antenna gain is as following table showed:

Operating Band	Frequency (MHz)	Antenna Gain (dBi)
2.4G WiFi	2412~2462	2412MHz to 2462MHz:2.1dBi(Ant0);2.1dBi(Ant1)
5G WiFi	5725~5850	5725MHz to 5850MHz: 6.13dBi(Ant0); 6.13dBi(Ant1);

Antennas

Technology	Frequency Range (MHz)	Antenna Type	Max Peak Gain (dBi)
WCDMA/LTE Band 2, n2	1850 ~ 1910		0.25
WCDMA/LTE Band 4	1710 ~ 1755		1.47
WCDMA/LTE Band 5, n5	824 ~ 849		2.68
LTE Band 7, n7	2500 ~ 2570		0.55
LTE Band 12, n12	699 ~ 716		-0.20
LTE Band 13	777 ~ 787		1.54
LTE Band 14	788 ~ 798		2.42
LTE Band 17	704~ 716		-0.20
LTE Band 25, n25	1850 ~ 1915	Dipole	0.25
LTE Band 26	814~849		2.68
LTE Band 30	2305 ~ 2315		-3.06
LTE Band 38	2570 ~ 2620		0.78
LTE Band 41, n41	2496 ~ 2690		0.78
LTE Band 48	3550 ~ 3700		-4.29
LTE Band 66, n66	1710 ~ 1780		1.47
LTE Band 71, n71	663 ~ 698		1.22
n77	3700 ~ 3980		-4.11

2) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed

IMPORTANT NOTE: In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling
This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "FCC ID: 2BCEZ-MR40; Contains FCC ID: XMR201909EC25AFX; Contains FCC ID: XMR2020RM502QAE". The grantee's FCC ID can be used only when all FCC compliance requirements are met.