



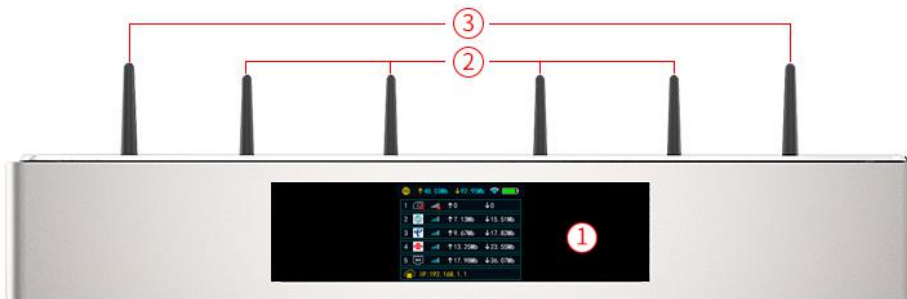
Shenzhen MINE Technology Co., Ltd

4G Video Encoder | 4G Bonding Router



# Mine M4 Bonding Router

## A. M4 Bonding Router Basic Parameters (Mini and Pro)



- ① OLED Display
- ② 4G High-gain Antenna
- ③ Wi-Fi High-gain Antenna
- ④ SIM Card Slot
- ⑤ Power Button
- ⑥ Power Adapter Connector
- ⑦ WAN
- ⑧ LAN



Model	M4 Mini/ M4 Pro
Cellular Network Mode	TDD-LTE,FDD-LTE,DC-HSPA+/HSPA+/HSPA/UMT, STD-SCDMA
Node Bands	Based on region
LAN Rate	1000Mb/s
WAN Rate	1000Mb/s
Wi-Fi Frequency	2.4GHz, 5.8GHz
Wi-Fi	802.11b/g/n 300Mb/s
Wi-Fi Range	30 Meters
Antenna	External
Uplink Speed	80Mb/s max
Downlink Speed	80Mb/s max
Protocol	TCP/IP、UDP、FTP、HTTP etc
Support Daisy Chain	Yes
Management	Web Control
Battery Capacity	9600 MA (built-in)
Working Duration	5-6 hours
Power Supply	12V 3A
Power Consumption	5W
Server Binding Option	A. Customer Rent Local Server B. User Mine Server C. Mine Help build Customer Own Server
Storage Temperature	(-40°C~70°C)
Working Temperature	(-10°C~40°C)
Storage Humidity	5%-90% no condensation
Working Humidity	10%-90% no condensation

## B. M4 Mini and M4 Pro Comparison

M4 Mini Cellular Bonding Router, which aggregation 4\*4G Sim Card,1 WAN and Wi-Fi to create a single pipeline for delivery video or data

Product Highlights as Below

1. Dimension smaller and more portable, bag for option.
2. Cooling improvement, build-in fan.
3. SIM Card Hot-plugging product technique method into CNC process with higher precision.



### M4 PRO & M4Mini Picture and Application Example Picture



### Comparison between M4 PRO & M4 MINI

Items#	M4 PRO	M4 MINI
SIM Card Hot-plugging	Profile Process	CNC Process, more precision
Device Weight	1.5Kg ; 3.30lb	1.12Kg ; 2.65lb
Device Dimension	240*145*54mm 9.45*5.70*2.12 inch	206*140*40mm 8.11*5.51*1.57 inch
Cooling	n/a	Built-in Fan
Battery	9600mAh Built-in	9600mAH Built-in
Package	Only Case	Case; Bag for option
Working Duration	5-6 Hours	5-6 Hours

### C. M4 Self-built Server Software Demand

- ① with public IP,
- ② system- Debian 9.0 or above, then run below command to install the M4 bonding server, `wget -N --no-check-certificate http://www.allwifi.cc/debian9.2-ss-bin.sh && chmod +x debian9.2-ss-bin.sh && bash debian9.2-ss-bin.sh`
- ③ after installed the system, reboot it, and use the `uname -a` to check the system, it shows as below,



Linux \*\*\*\* 4.9.87-20180723+ #1 SMP Sun Jul 22 22:36:33 EDT 2018 x86\_64 GNU/Linux

④ Open bonding port 443 for M4,

by whereis iptables command to check the iptables installed or not.

or by sudo apt-get install iptables to install it.

⑤ sudo iptables -L means firewall allow all the connections

⑥ Chain INPUT (policy ACCEPT)

target prot opt source destination

Chain FORWARD (policy ACCEPT)

target prot opt source destination

Chain OUTPUT (policy ACCEPT)

target prot opt source destination

⑦ iptables -A INPUT -p tcp --dport 443-j ACCEPT

service iptables save

iptables-save

⑧ test the port enable or not

telnet ip port

# telnet 1.1.1.1 443

### D. M4 Self-built Server Hardware Demand

#### Hardware Configuration Requirement for 1 M4 Device

<b>Host configuration</b>	CPU	X86 intel 1 core above
	RAM	≧ 512 MB
	HDD	≧ 40 GB
	GPU	No
<b>Relate Requirement</b>	NIC(network interface card)	> 100Mbps
	Operating system	Debian 9.0 (Linux)

#### Hardware Configuration Requirement for 10-20 M4 Device

<b>Host configuration</b>	CPU	X86 intel 4 core above
	RAM	>1 GB
	HDD	>40GB
	GPU	No
<b>Relate Requirement</b>	NIC(network interface card)	> 1000Mbps
	Operating system	Debian 9.0 (Linux)



Peripheral devices include: one server can connect to more than one router, provided that the network bandwidth requirements are met (e.g., the total bandwidth is 1000Mbps/ 15pcs=66Mbps), it can be allocated to 66Mbps for each road, but this is to ensure that the bandwidth of each road aggregated by each device is good enough.

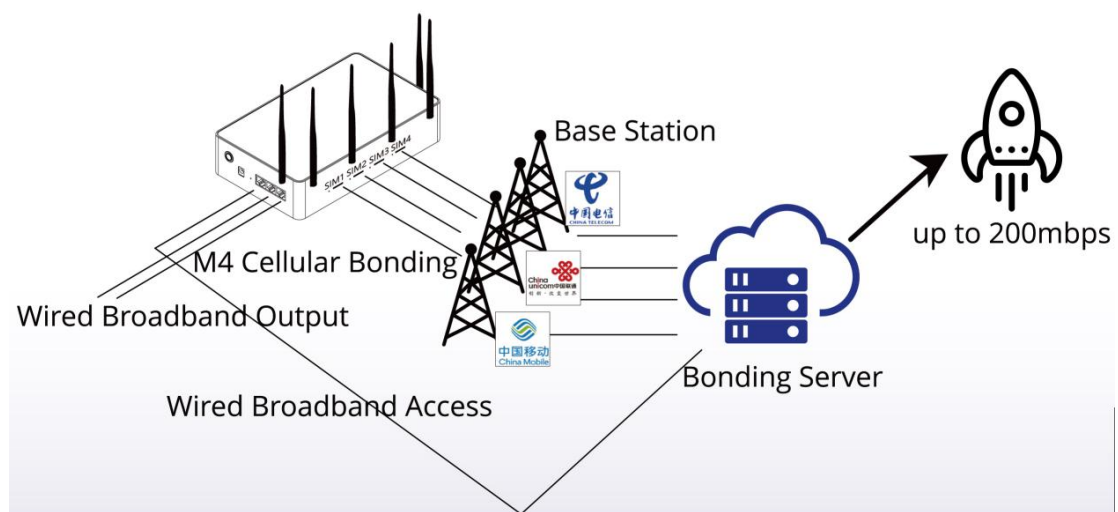
### E. Why M4 Bonding Router cannot 1+1=2 ?

#### Bonding Principle

① The principle of aggregation is to maximize the bandwidth by taking advantage of multiplexing network capability. In theory, it will be  $1+1=2$ . However, there is an additional cost in the process of splitting and assembling the data flow, so it is not a  $1+1=2$  relationship at any time, and the best aggregation can achieve more than 1.5

② Due to the numerous communication protocols, in many scenarios, especially some applications of TCP, if the transmission capacity between several CARDS is very different, that is, one card is very strong, the other is very weak, then the weak card will often drag down the effect of the strong card.

### 4X4G SIM WAN WiFi Ethernet Bonding





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## F. M4 Mini and M4 Pro Package

M4 Mini	M4 Pro														
Measure Weight 4.0 Kg	Measure Weight 3.0 Kg														
33*30*13(CM)	33*28*11 (CM)														
															
<table border="0"> <tr> <td data-bbox="252 1122 539 1249">  M4 Mini         </td> <td data-bbox="555 1122 683 1249">  Case         </td> <td data-bbox="699 1122 834 1249">  User Manual         </td> </tr> <tr> <td data-bbox="252 1312 387 1440">  Power Adapter         </td> <td data-bbox="403 1312 539 1440">  Wi-Fi Antenna         </td> <td data-bbox="555 1312 691 1440">  4G Antenna         </td> <td data-bbox="707 1312 834 1440">  SIM Adapter         </td> </tr> </table>	 M4 Mini	 Case	 User Manual	 Power Adapter	 Wi-Fi Antenna	 4G Antenna	 SIM Adapter	<table border="0"> <tr> <td data-bbox="874 1122 1161 1249">  M4 Pro         </td> <td data-bbox="1177 1122 1305 1249">  Case         </td> <td data-bbox="1321 1122 1457 1249">  User Manual         </td> </tr> <tr> <td data-bbox="874 1312 1010 1440">  Power Adapter         </td> <td data-bbox="1026 1312 1161 1440">  Wi-Fi Antenna         </td> <td data-bbox="1177 1312 1313 1440">  4G Antenna         </td> <td data-bbox="1329 1312 1457 1440">  SIM Adapter         </td> </tr> </table>	 M4 Pro	 Case	 User Manual	 Power Adapter	 Wi-Fi Antenna	 4G Antenna	 SIM Adapter
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