MaxComm

4G LTE Industrial DTU Router

Model： M-150

MaxComm Co.,Ltd

目录

1 Summary

1.1 Brief of Overview

This document describes the electrical characteristics, RF performance, size and application environment of M-150. Under the introduction of this document, end users or developers can quickly understand the hardware functions of M-150.

M-150 is an industrial DTU with 4G function, used for data transmission services of industry users, supports transparent data transmission, access to the Internet through 4G mobile communication dial-up or 100Mbps WAN port dial-up, and then share the Internet network through wireless WiFi 4 and 100Mbps wired LAN .

1.2 Reference standard

Relevant standard specifications:

USB2.0 bus standard

Standard SIM/USIM interface standard

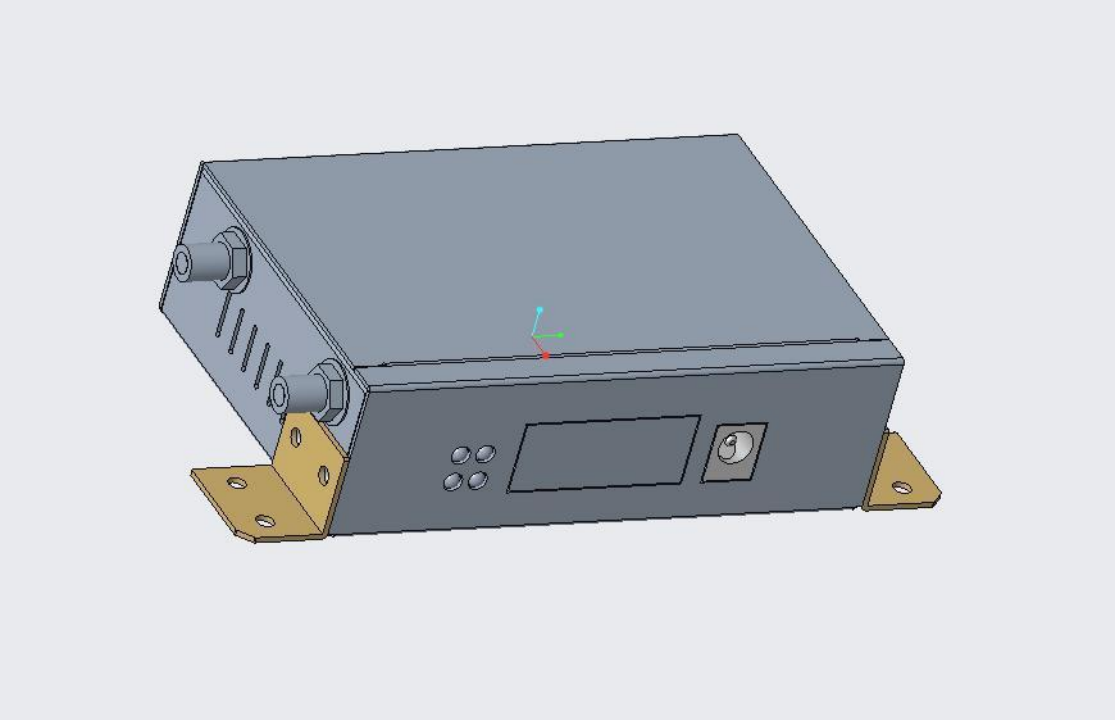
IEEE802.11n/g/b

IEEE802.3/802.3u

Mini PCI Express Card Electro mechanical Specification Revision 1.0-2003

4G mobile communication standard, which is determined by the selected 4G mobile communication module

2 Product Photo:



3 Main features of the product:

Using MT7628DA solution, MIPS24KEc architecture CPU, the main frequency is up to 580MHZ

MT7628DA chip integrates 2.4G WIFI function, the rate is up to 300Mbps

MT7628DA chip integrates 64MB DDR2, with 8MB Nor Flash

1WAN, 1LAN full 100M adaptive network ports, support auto flip (Auto MDI/MDIX)

Support one RS232, one RS485 serial communication interface, support anti-static and anti-surge design

Support 9-32V power supply, meet industrial power requirements, support anti-static and anti-surge design

Support "one-key flashing mode", that is, long press the reset button to turn on the machine to enter the rescue flashing mode

Built-in mini-PCIE standard interface, which can be used to connect 4G mobile communication module

External standard SIM card interface, support SIM/USIM card

External high-gain omnidirectional antenna, wireless signal 360 degrees without

dead angle

This product supports the hardware watchdog function, and the device will automatically restart when the routing system or 4G module fails

4 Hardware function

4.1 Hardware interface introduction

Network ports	1 WAN port, 100Mbps support auto flip (Auto MDI/MDIX) Compliant with IEEE 802.3/802.3u
	1 LAN port, 100Mbps supports auto flip (Auto MDI/MDIX) Compliant with IEEE 802.3/802.3u
SIM card slot	SIM card interface 1 standard SIM card (large card) interface, support SIM/USIM
Power port	DC5.0*2.1MM
Button	1* reset button
Antenna	2 external 2.4G antennas
	2 external 4G mobile communication antennas, compatible with 3G/2G mobile data communication
Connector	6 PIN connector, this connector is RS232 and RS485 communication interface

4.2 Indicator function introduction

Power LED	always on when the power is turned on, and it is not on when the power fails or is not connected to the power supply. The left LED lights in the bottom row
2.4G WIFI LED	always on when the 2.4G WIFI function is turned on, flashes when there is data communication, and it is not on when the 2.4G WIFI is not turned on or when the 2.4G WIFI function is faulty, the right LED lights in the lower row
Mobile 4G LED	This LED light is controlled by the routing system, it is recognized that the 4G module is always on, the 4G module is faulty or there is no 4G module, the LED light does not light up, the left LED light in the upper row
External network LED light	The device dials successfully through the 4G mobile communication module or the WAN port. It is always on when it

	communicates with the Internet normally, and it does not turn on when the device cannot access the Internet. The upper row of left LED lights

4.3 Hardware platform introduction

Processor	MT7628DA MIPS24KEc architecture CPU, the main frequency is up to 580MHZ
2.4G WIFI Chip	MT7628DA integrates 2.4G WIFI function IEEE 802.11n/g/b, maximum rate 300Mbps
RAM	DDR2 64MB, Does not support custom memory size
Flash	Nor Flash 16MB
	Not support NAND Flash

4.4 Hardware watchdog function introduction

This hardware product is designed with a hardware watchdog function. After the hardware watchdog is powered on, it will automatically turn on and detect the heartbeat level output by the routing system that jumps once per second. If the routing system itself fails (such as a crash), it will also Naturally, the heartbeat level can no longer be output. At this time, if the hardware watchdog does not detect the heartbeat level within 120 seconds, it will shut down itself for 15 seconds and then restart the entire system.

When the routing system is operating normally, but the 4G module dialing is abnormal, the routing system will control the 4G module's power supply and let the 4G module automatically restart to repair the 4G dialing abnormal problem.

Watchdog work table	
Routing system is abnormal	4G module dialing is abnormal
Restart the whole system	Only restart the 4G module

5 WIFI Wireless parameter introduction

Compatible with IEEE 802.11 b/g/n, support IEEE 802.11 d/h/k; support 20MHz, 40MHz, use 2T2R MIMO antenna technology, the highest connection rate is up to 300Mbps. The following is an explanation of 2.4G WIFI's power frequency, receiving sensitivity, and transmitting power.

	Items	Max.	Rated value	Mim.	Unit
Work frequency		2484		2412	MHz
Receiving sensitivity	11 Mbps CCK	-86	-87.5	-89	dBm
	54 Mbps OFDM	-72	-74	-76	dBm
	BW=20MHz MCS 7	-70	-72	-74	dBm
	BW=40MHz MCS 7	-68	-70	-71	dBm
Transmit power	11 Mbps CCK	19	18	17	dBm
	54 Mbps OFDM	17	16	15	dBm
	BW=20MHz MCS 7	17	16	15	dBm
	BW=40MHz MCS 7	16	15	14	dBm

6 Power supply and power consumption description

	Test Condition	Min.	Rated value	Max.	Unit
Work voltage	T A = 25°C	6	12	32	V
Absolute working voltage	T A = 25°C	5		36	V
Work current	VIN=12V，T A = 25°C	0.3	0.5	0.8	A

Please use the MaxComm standard power adapter to supply power to this product. If the MaxComm standard power supply is not used, please supply power to this product in strict accordance with the above power specifications, otherwise the product will be damaged. If you use a battery or vehicle power

supply to supply

power, you must take anti-static and anti-surge countermeasures.

7 4G mobile communication function

This product has a built-in mini-PCIE interface, which can be used to expand 4G mobile communication functions, and the built-in mini-PCIE interface supports USB2.0 bus. The specific frequency band supported by 4G mobile communication is determined by the selected 4G module.

8 Introduction to structural parameters and accessories

Weight（KG)	TBD	
Shell size	TBD	
Color	TBD	
Accessories	Manual	1PCS
	Certificate of conformity	1PCS
	Power adapter	12V1A 1PCS
	Network cable	8P8C 1PCS
	SIM card adapter	1PCS

9 Software configuration information

Default IP	192.168.1.1
User name Password	root/admin
2.4G SSID	WIFI-XXXXXX (X is the last 6 digits of MAC address), no password by default
5.8G SSID	NA

The above is the general default configuration information of the product. The WIFI SSID may be different when using our OS firmware or OPENWRT firmware, but the default IP and WEB login name and password of this product remain unchanged. For other detailed software functions, please refer to the product description.

10 Product working environment requirements

Work temperature	0℃ to 40℃
Storage temperature	-40℃ to 70℃
Working humidity	10% to 90%RH Non-condensing
Storage humidity	5% to 90%RH Non-condensing