



Shenzhen Huachuangyilian Electronics Co., Ltd.

2.5G WAN WiFi6 AX3000 5G 4G

Vehicle Router

Model: HC-G70



Simple Introduction

This document describes the electrical characteristics, RF performance, dimensions and application environment of the HC-G70. With the introduction of this document, end users or developers can quickly understand the hardware functions of HC-G70.

HC-G70 is a Industrial 2.5G WAN 5G/4G+WIFI6 vehicle router, which can access the Internet through 5G/4G mobile communication dial-up or 1000Mbps WAN port, and then share the Internet network through wireless WiFi 6 and 1000Mbps wired LAN.

Product Feature

- Using MT7981B solution, ARM Cortex-A53 dual-core CPU, main frequency up to 1.3GHZ;
- Adopt independent WIFI6 chip, MT7976CN, the speed is up to 3000Mbps;
- High-speed 512MB RAM, with 128MB SPI NAND Flash;
- 1*2.5Gbps WAN port, 1*Gigabit LAN port, support automatic flip (Auto MDI/MDIX)
- 1 USB 3.0 port
- 1 2pin Terminal port, 1 DC power port, support 9V-60V power
- Support "one-key flashing mode", long press the reset button to enter the rescue flashing mode;
- Built-in M.2 standard interfaces, which can be used to connect to 5G/4G mobile communication modules;
- External standard SIM card interface
- Integrated hardware watchdog, detect network status, support redial up automatically Internet if loose Internet connection
- External high-gain WIFI antenna, 360-degree wireless signal without dead angle
- Preload openWRT system, support flash customer's firmware

Product Datasheet



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Hardware Interface Introduction

Network ports	1*2.5G WAN port, supports Auto MDI/MDIX Conforms to IEEE 802.3/802.3u/802.ab
	1*10/100/1000Mbps LAN port, supports Auto MDI/MDIX Conforms to IEEE 802.3/802.3u/802.ab
	1*USB 3.0 port
	1*SIM card slot
Power interface	1 DC5.5*2.1MM port, 1 2pins Terminal port, support 9V-60V power
Button	1 Reset button
4G/5G interface	1*M.2 Port
Removable Antennas	4* external omnidirectional 5dbi 5G/4G mobile communication antennas
	2* external omnidirectional 5dbi 2.4G wifi antennas
	2* external omnidirectional 5dbi 5.8G wifi antennas

Hardware Platform Introduction

Processor	MT7981B ARM Cortex-A53 dual-core CPU, 1.3GHZ main frequency
WIFI Chip	MT7976CN IEEE 802.11n/g/b/a/ac/ax,Max. 3000Mbps
RAM	DDR3 512MB
Flash	SPI NAND Flash 128MB

Hardware watchdog function introduction

HC-G70 is designed with a hardware watchdog function. After the hardware watchdog is powered on, it will automatically start up and detect the heartbeat level output by the routing system that jumps once every 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 has not detected the heartbeat level within 120 seconds, it will shut down by itself for 15 seconds and then restart the entire system.

When the routing system is running normally, but the 5G/4G module dialing is abnormal, the routing system will control the power supply of the 5G/4G module through GPIO, so that the module will automatically restart to fix the 5G/4G dialing abnormality.



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Specific function of hardware watchdog	
Routing system crash	Module dialing crash
Restart the whole system	Only restart the module

Power Supply And Power Consumption Description

	Test Conditions	Min	Rated Value	Max	Unit
Absolute working voltage	T A = 25°C	8.5		36	V
Working current	VIN=12V, T A = 25°C	0.6	1,2	3	A

Please use the standard power adapter to power this product. If you do not use the standard power supply, please strictly follow the above power specification parameters to power this product, otherwise the product will be damaged. If you use batteries or vehicle power supplies, please take anti-static and anti-surge measures.

WiFi Wireless Parameter Introduction

WiFi EVM Index

	Mode Description	Index parameter	Unit
EVM index	802.11B 11Mbps	≤ -15 dB	dBm
	802.11G 54 Mbps	≤ -25 dB	dBm
	802.11N HT20@ MCS7	≤ -28 dB	dBm
	802.11N HT40@ MCS7	≤ -28 dB	dBm
	802.11AC VHT20@ MCS8	≤ -30 dB	dBm
	802.11AC VHT40@ MCS9	≤ -32 dB	dBm
	802.11AC VHT80@ MCS9	≤ -32 dB	dBm
	802.11AX HE20@MCS 11	≤ -35 dB	dBm
	802.11AX HE40@MCS 11	≤ -35 dB	dBm
	802.11AX HE80@MCS 11	≤ -35dB	dBm

WiFi 2.4G

Compatible with IEEE 802.11 b/g/n/ac/ax, supports 20MHz or 40MHz, modulation method 1024-QAM / OFDMA, adopts 2T2R MU-MIMO antenna technology, and the maximum connection rate is up to 574Mbps. The following is a description of the power frequency, receiving sensitivity, and transmitting power of 2.4G WIFI.



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	illustrate	Max	Rated Value	Min	Unit
Working frequency		2484		2412	MHz
Receiver sensitivity	802.11B 11Mbps	-86	-87	-88	dBm
	802.11G 54 Mbps	-71	-73	-75	dBm
	802.11N HT20@ MCS7	-68	-70	-72	dBm
	802.11N HT40@ MCS7	-66	-68	-70	dBm
	802.11AC VHT20@ MCS8	-64	-66	-68	dBm
	802.11AC VHT40@ MCS9	-62	-64	-66	dBm
	802.11AX HE20@MCS11	-60	-62	-64	dBm
	802.11AX HE40@MCS11	-58	-60	-62	dBm
Transmit power	802.11B 11Mbps	22	21	20	dBm
	802.11G 54 Mbps	20	19	18	dBm
	802.11N HT20@ MCS7	19	18	17	dBm
	802.11N HT40@ MCS7	19	18	17	dBm
	802.11AC VHT20@ MCS8	18	17	16	dBm
	802.11AC VHT40@ MCS9	18	17	16	dBm
	802.11AX HE20@MCS11	17	16	15	dBm
	802.11AX HE40@MCS11	17	16	15	dBm

WiFi 5.8G

Compatible with IEEE 802.11 a/an/ac/ax, supports 20MHz, 40MHz, 80MHz, 160MHz, modulation method 1024-QAM / OFDMA, adopts 3T3R MU-MIMO antenna technology, and the maximum connection rate is up to 2400Mbps. The following is a description of the power frequency, receiving sensitivity, and transmitting power of 5.8G WIFI.



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	illustrate	Max	Rated Value	Min	Unit
Working frequency		5825		5180	MHz
Receiver sensitivity	802.11G 54 Mbps	-70	-72	-74	dBm
	802.11N HT20@ MCS7	-68	-70	-72	dBm
	802.11N HT40@ MCS7	-66	-68	-70	dBm
	802.11AC VHT20@ MCS8	-64	-66	-68	dBm
	802.11AC VHT40@ MCS9	-62	-64	-66	dBm
	802.11AC VHT80@ MCS9	-60	-62	-64	dBm
	802.11AX HE20@MCS 11	-58	-60	-62	dBm
	802.11AX HE40@MCS 11	-55	-57	-59	dBm
	802.11AX HE80@MCS 11	-53	-55	-57	dBm
Transmit power	802.11G 54 Mbps	20	19	18	dBm
	802.11N HT20@ MCS7	19	18	17	dBm
	802.11N HT40@ MCS7	18	17	16	dBm
	802.11AC VHT20@ MCS8	18	17	16	dBm
	802.11AC VHT40@ MCS9	17	16	15	dBm
	802.11AC VHT80@ MCS9	16	15	14	dBm
	802.11AX HE20@MCS 11	18	17	16	dBm
	802.11AX HE40@MCS 11	17	16	15	dBm
	802.11AX HE80@MCS 11	16	15	14	dBm

Structural Parameters And Accessories Introduction

Color	Black	
Accessories	Power adapter	12V/2A
	Cable	8P8C Network cable

Product Working Environment Requirements



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Operating temperature	0°C to 40°C
storage temperature	-40°C to 70°C
Working humidity	10% to 90%RH non-condensing
storage humidity	5% to 90%RH non-condensing

Software Configuration Information

Default IP	192.168.1.1
Username Password	root/admin
2.4G SSID	WIFI-XXXXXX (X is the last 6 digits of the MAC address), no password by default
5.8G SSID	WIFI-5G-XXXXXX (X is the last 6 digits of the MAC address), no password by default

Above is the general default configuration information of the HC-G80. For other detailed software functions, please refer to the product description.