CH9121 Serial control instruction set

V2.0

Overview

CH9121 supports two ways to enter the serial port configuration mode, using the serial port of port 1：

* The hardware CFG0 pin is pulled low to enter. When the CFG0 pin detects a low level, the CH9121 serial port data will be used as a configuration command. The CFG0 pin is pulled high to exit the configuration mode,and the configuration command is sent with a fixed baud rate of 9600bps.

* The serial port negotiation mode (need to be turned on through the network configuration software first) enters the serial port configuration mode. When the serial port idle time reaches 500ms, the serial data received by CH9121 is compared with {0x55,0xaa,0x5a}, the comparison is successful, CH9121 will reply one byte: 0xa5, after receiving the response data 0xa5 within 500ms, send 0xa5 to confirm entry Configuration mode. If there is an error in the data comparison of any link in the middle, it is considered that these data bits are normal serial data, and this part of the data is sent to the network through the serial port, and the baud rate of the configuration command is sent to the actual baud rate of the serial port.

Command code

* The format of the command code sent by CH9121 is "0x57 0xab command code parameter (optional)"

Command code	Parameter	Return	Command purpose
0x01	/	Chip version number	Query chip version number
0x02	/	0xaa	Reset chip
0x03	/	0x00:TCP Disconnect 0x01:TCP Connect	Query port 1 TCP connection status
0x04	/	0x00:TCP Disconnect 0x01:TCP Connect	Query port 2 TCP connection status
0x0d	/	0xaa	Save parameters to EEPROM
0x0e	/	0xaa	Execute the configuration command, and Reset CH9121
0x5e	/	0xaa	Leave serial port configuration mode (Only on the serial port negotiating side Formula is valid)
0x10	Setting mode: 00: TCP server 01: TCP client 02:UDP server	0xaa	Set chip port 1 net Network mode

	03: UDP client		
0x11	Device IP address 0xc0 0xa8 0x01 0xc8(192.168.1.200)	0xaa	Set chip IP
0x12	Subnet mask: 0xff 0xff 0xff 0x00(255.255.255.0)	0xaa	Set chip mask
0x13	Gateway address: 0xc0 0xa8 0x01 0x01(192.168.1.1)	0xaa	Set chip gateway
0x14	The port number: 0xd0 0x07 (2000)	0xaa	Set chip port 1 book Ground source port
0x15	Destination IP address: 0xc0 0xa8 0x01 0x64(192.168.1.100)	0xaa	Set the destination IP of chip port 1
0x16	Destination port: 0xe8 0x03(1000)	0xaa	Set chip port 1 destination port
0x17	The port is enabled randomly: 0x00: prohibited 0x01: enable	0xaa	Set chip port 1 Local port random
0x21	Baud rate: 0x80 0x25 0x00 0x00 (9600)	0xaa	Set the baud rate of port 1 serial port
0x22	0x01 0x04 0x08 (1stop, no proofreading, 8data) Check: 00: even 01: odd 02: mark 03: Space 04: None	0xaa	Set port 1 serial port calibration bit, data bit, stop bit
0x23	0x01 0x00 0x00 0x00 (Serial timeout 1*5ms, after which four bytes need to be filled, and the space is filled with zeros)	0xaa	Set port 1 serial port packet timeout time
0x24	0x01: disconnect 0x00: no disconnection	0xaa	Set port 1 network cable disconnection whether

			to disconnect the network connection
0x25	0x00 0x02 0x00 0x00 (Packing length 2*256=512 bytes)	0xaa	Set port 1 serial port receiving packet length
0x26	0x01: empty 0x00: do not clear	0xaa	Set whether to clear the serial port data when port 1 is connected to the network
0x33	0x01: open 0x00: close	0xaa	Turn on/off the DHCP function
0x34	Domain name (maximum length 28 bytes)	0xaa	Set port 1 domain name
0x39	0x01: open 0x00: close	0xaa	Turn on/off port 2
0x40	Setting mode: 00: TCP server 01: TCP client 02:UDP server 03: UDP client	0xaa	Set chip port 2 network mode
0x41	The port number: 0xd0 0x07 (2000)	0xaa	Set chip port 2 local source port
0x42	Destination IP address: 0xc0 0xa8 0x01 0x64(192.168.1.100)	0xaa	Set the destination IP of chip port 2
0x43	Destination port: 0xe8 0x03(1000)	0xaa	Set chip port 2 destination port
0x44	Baud rate: 0x80 0x25 0x00 0x00 (9600)	0xaa	Set port 2 serial port baud rate
0x45	0x01 0x04 0x08 (1stop, no proofreading, 8data) Check: 00: even 01: odd 02: mark 03: Space 04: None	0xaa	Set port 2 serial parity bit, data bit, stop bit

0x46	0x01 0x00 0x00 0x00 (Serial timeout 1*5ms, thereafter Need to fill in four bytes, empty Bit zero)	0xaa	Set port 2 serial port packing timeout time
0x47	The port is enabled randomly: 0x00: prohibited 0x01: enable	0xaa	Set chip port 2 local port random
0x48	0x00 0x02 0x00 0x00 (Packing length 2*256=512 byte)	0xaa	Set port 2 serial port receiving packet length
0x49	0x01: empty 0x00: do not clear	0xaa	Set whether to clear the serial port data when port 2 is connected to the network
0x60	/	Network mode (1byte) 0x00: TCP server 0x01: TCP client 0x02: UDP server 0x03: UDP client	Read the working mode of chip port 1,
0x61	/	Device IP address 0xc0 0xa8 0x01 0xc8(192.168.1.200)	Read the chip IP address,
0x62	/	Subnet mask: 0xff 0xff 0xff 0x00(255.255.255.0)	Read chip mask
0x63	/	Gateway address: 0xc0 0xa8 0x01 0x01(192.168.1.1)	Read chip gateway
0x64	/	The port number: 0xd0 0x07 (2000)	Read chip port 1 source port
0x65	/	Destination IP address: 0xc0 0xa8 0x01 0x64(192.168.1.100)	Read the destination IP address of chip port 1
0x66	/	Destination port: 0xe8 0xe3(1000)	Read the destination port number of chip port 1

0x71	/	Baud rate: 0x80 0x25 0x00 0x00 (9600)	Read port 1 serial port baud rate
0x72	/	0x01 0x04 0x08 (1stop,no proofreading,8data) Check: 00: even 01: odd 02: mark 03: Space 04: None	Read port 1 serial port check bit data bit stop bit
0x73	/	0x01 (Serial timeout 1*5ms)	Read port 1 serial port timeout time
0x81	/	6 bytes MAC address	Get chip MAC address and
0x90	/	Network mode (1byte) 0x00: TCP server 0x01: TCP client 0x02: UDP server 0x03: UDP client	Read chip port 2 working mode,
0x91	/	The port number: 0xd0 0x07 (2000)	Read chip port 2 source port
0x92	/	Destination IP address: 0xc0 0xa8 0x01 0x64(192.168.1.100)	Read the destination IP address of chip port 2
0x93	/	Destination port: 0xe8 0xe3(1000)	Read the destination port number of chip port 2
0x94	/	Baud rate: 0x80 0x25 0x00 0x00 (9600)	Read port 2 serial port baud rate
0x95	/	0x01 0x04 0x08 (1stop, no proofreading,8data) Check: 00: even 01: odd	Read port 2 serial port check bit data bit stop bit

		02: mark 03: Space 04: None	
0x96	/	0x01 (Serial timeout 1*5ms)	Read port 2 serial timeout time

Application note

Setting description: "→" Send from serial device "←" CH9121 return

* Enter the configuration mode process (serial port negotiation to enter, if it is entered by hardware pin mode, it is not necessary)

→ 0x55,0xaa,0x5a
← 0xa5
→ 0xa5
← 0xa5

* Set module parameters:

→ 0x57,0xab,0x10,0x02 // UDP broadcast mode.
← 0xaa
→ 0x57,0xab,0x11,0xc0,0xa8,0x01,0x0a //Source IP: 192.168.1.10
← 0xaa
→ 0x57,0xab,0x12,0xff,0xff,0xff,0x00 //Subnet mask: 255.255.255.0
← 0xAA
→ 0x57,0xab,0x13,0xc0,0xa8,0x01,0x01 //Gateway: 192.168.1.1
← 0xaa
→ 0x57,0xab,0x14,0x88,0x13 //Local port: 0x1388(5000)
← 0xaa
→ 0x57,0xab,0x15,0xff,0xff,0xff,0xff //Destination IP address: 255.255.255.255
← 0xaa
→ 0x57,0xAB,0x16,0x70,0x17 //Destination port: 0x1770 (6000)
← 0xaa
→ 0x57,0xab,0x21,0x00,0xc2,0x01,0x00 //Serial port baud rate: 0x0001c200 (1152000)
← 0xaa
→ 0x57,0xab,0x0d //Update configuration parameters to EEPROM
← 0xaa
→ 0x57,0xab,0x0e //Perform configuration, reset 9121
← 0xaa
→ 0x57,0xab,0x5e //Leave configuration mode
← 0xaa

* Read configuration

→ 0x57,0xAB,0x81 //Read MAC
← 0x84,0xC2,0xE4,0x05,0x06,0x07 //Back to MAC
→ 0x57,0xAB,0x61 //Read source IP
← 0xC0,0xA8,0x01,0x10 //Return IP address