CH9120 Serial Port Control Instruction Set

Version: V1.1

1. Overview

CH9120 support two ways to enter serial port configuration mode:

(1) Hardware CFG0 pin pull low to enter, when the CH9120 CFG0 pin detects a low level, the CH9120 serial data will be used as the configuration command, CFG0 pin pull high to exit the configuration mode and send the configuration command baud rate fixed 9600bps.

(2) Serial port negotiation mode (need to be opened by network configuration software first) to enter serial port configuration mode. When the serial port idle time reaches 500ms, the serial port data received by CH9120 is compared with {0x55, 0xaa, 0x5a}, and if the comparison is successful, CH9120 will reply one byte: 0xa5, and after receiving the answer data 0xa5 within 500ms time, send 0xa5 to confirm entering the configuration mode. If there is any error in data comparison in the middle of the process, these data bits will be considered as normal serial data, and this part of data will be sent to the network side through the serial port, and the baud rate of the configuration command will be sent as the actual baud rate set for the serial port.

2. Command Code

CH9120 send command code format "0X57 0xab Command code Parameter (optional)"

Command code	Parameters	Back	Command purpose
0x01		Chip version number	Query chip version number
0x02		0xaa	Reset chip
0x03		0x00: TCP disconnect 0x01: TCP connect	Query TCP connection status
0x0d		0xaa	Save parameters to EEPROM
0x0e		0xaa	Execute the configuration command, and reset CH9120
0x5e		0xaa	Leave serial port configuration mode (only valid in port negotiation way)
0x10	Network mode (1 byte) 0x00: TCP Server 0x01: TCP Client 0x02: UDP Server 0x03: UDP Client	0xaa	Set chip network mode
0x11	Device IP address 0xc0 0xa8 0x01 0xc8 (192.168.1.200)	0xaa	Set chip IP address

0x12	Subnet Mask: 0xff 0xff 0xff 0x00 (255.255.255.0)	0xaa	Set chip mask
0x13	Gateway number: 0xc0 0xa8 0x01 0x01 (192168.1.1)	0xaa	Set up chip gateway
0x14	Port number: 0xd0 0x07 (2000)	0xaa	Set chip local port
0x15	Destination IP address: 0xc0 0xa8 0x01 0x64 (192.168.1.100)	0xaa	Set chip destination IP address
0x16	Destination port: 0xe8 0x03 (1000)	0xaa	Set chip destination port number
0x17	Port random enable: 0x00: Disable 0x01: Enable	0xaa	Set chip local port randomly
0x21	Baud rate: 0x80 0x25 0x00 0x00 (9600)	0xaa	Set serial port baud rate
0x22	0x01 0x04 0x08 (1stop, no checksum, 8data) Checksum: 00: Even 01: Odd 02: Mark 03: Space 04: None	0xaa	Set serial port checksum bit data bit stop bit
0x23	0x01 (Serial port timeout 1*5ms, after which 4 bytes need to be filled, empty bitwise zeroing)	0xaa	Set serial port timeout time
0x24	0x01: Disconnect 0x00: Not disconnect	0xaa	Whether to disconnect the network when the network cable is disconnected
0x25	0x00 0x02 0x00 0x00 (Packing length 2*256=512 Bytes)	0xaa	Set serial port receive packet length
0x26	0x01: Clear 0x00: Not clear	0xaa	Whether to clear the serial data when the network is

			connected
0x33	0x01: Enable 0x00: Disable	0xaa	Enable/Disable DHCP function
0x60		Network mode (1 byte) 0x00: TCP Server 0x01: TCP Client 0x02: UDP Server 0x03: UDP Client	Read chip operating mode
0x61		Device IP address 0xc0 0xa8 0x01 0xc8 (192.168.1.200)	Read 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		Serial port: 0xd0 0x07 (2000)	Read chip source port
0x65		Destination IP address: 0xc0 0xa8 0x01 0x64 (192.168.1.100)	Read chip destination IP address
0x66		Destination port: 0xe8 0x03 (1000)	Read chip destination port number
0x71		Baud rate: 0x80 0x25 0x00 0x00 (9600)	Read serial port baud rate
0x72		0x01 0x04 0x08 (1stop, no checksum, 8data) Checksum: 00: Even 01: Odd 02: Mark 03: Space 04: None	Read serial port checksum bit data bit stop bit
0x73		0x01 (Serial port timeout 1*5ms)	Read serial port timeout time
0x74		0x01: Disconnect 0x00: Not disconnect	Whether to disconnect the network when the network cable is disconnected
0x75		0x00 0x02 0x00 0x00 (Packing length 2*256=512	Set serial port receive packet length

		Bytes)	
0x76		0x01: Clear 0x00: Not cleared	Whether to clear the serial data when the network is connected

3. Application Notes

Setting instructions: "→" serial device send "←" CH9120 return

1. Enter the configuration mode process (serial port negotiation entry, not necessary if the hardware pin mode entry)

→0x55,0xaa,0x5a
←0xa5
→0xa5
←0xa5

2. 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: 255.255.255.0
←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 // Execute configuration, reset 9120
←0xaa
→0x57,0xab,0x5e // Leave configuration mode
←0xaa

3. Read configuration

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