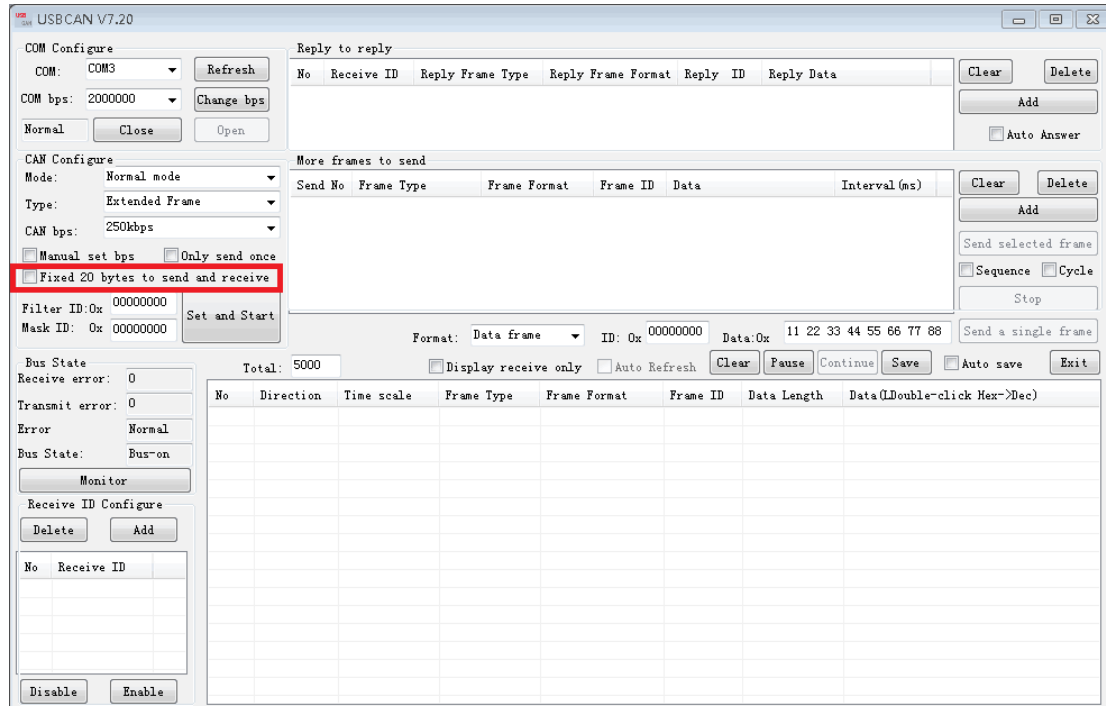# The definition of the serial (USB) conversion CAN protocol

The serial port baud rate default is 2000000, 8 bit data bit, 1 bit stop bit, no check. Two communication protocols are supported within the converter, one is a fixed 20 byte communication protocol, and the other is a variable length communication protocol.

1. Variable length communication format

When the software is not selected

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(for example, the red line is checked in the box above), click setup and start button. The internal communication of the converter is a variable length communication protocol. The specific protocol is as follows:

	Definition			
Packet header	0xaa			
Tyep	0xc0 Tyep bit5(frame type 0- standard frame (frame ID 2 bytes), 1-extended frame (frame ID 4 bytes)) bit4(frame format 0- data frame, 1 remote frame) Bit0~3 Frame data length (0~8)			
Frame ID	Extended frame	1~8 bit (BYTE1)	Standard Frame	1~8 bit (BYTE1)
		9~16 bit (BYTE2)		
		17~24 bit (BYTE3)		9~11 bit (BYTE2)
		25~29 bit (BYTE4)		
Frame data (frame data may be 0~8 data)	CAN sends or accepts data 1			
	CAN sends or accepts data 2			
	CAN sends or accepts data 3			
	CAN sends or accepts data 4			
	CAN sends or accepts data 5			
	CAN sends or accepts data 6			

	CAN sends or accepts data 7
	CAN sends or accepts data 8
End code	0x55

Sample description (standard frame):

1. For example, send the CAN standard frame ID to 0x123, and the corresponding data as 0x11 0x22 0x33 0x44 0x55 0x66 0x77 0x88

Then the serial port sends data format to AA C8 23 01 11 22 33 44 55 66 77 88 55

The following is an explanation

AA Packet header

C8 Bit5 is 0 standard frame, bit4 is 0, data frame bit0~3 is 8, data length is 8, sending 8 bytes

23 01 For the frame ID 0x123

11 22 33 44 55 66 77 88 Send frame data for CAN

55 End code

For example, the serial port is received:

AA C8 23 01 11 22 33 44 55 66 77 88 55

The received CAN is the standard frame, ID is 0x123, the corresponding data is 11 22 33 44 55 66 77 88, 8 bytes, and the resolution is the same as above

2. For example, send CAN standard frame ID to 0x103, and the corresponding data is 0x 11 0x22

Then the serial port sends data format to:

AA C2 03 01 11 22 55

The following is an explanation:

AA Packet header

C2 bit5 is 0 standard frame, bit4 is 0, data frame bit0~3 is 2, data length is 2, sending 2 bytes

03 01 For the frame ID 0x103

11 22 Send frame data for CAN

55 End code

For example, the virtual serial port is received:

AA C2 03 01 11 22 55

The received CAN is the standard frame, ID is 0x0103, the corresponding data is 11 22, 2 bytes, and the resolution is the same as above

Sample description (extended frame):

1. For example, the CAN extended frame ID is 0x1234567, and the corresponding data is 0X11,

0x22, 0x33, 0x44, 0x55, 0x66, 0x77, 0x88

Then the serial port sends data format to:

AA E8 67 45 23 01 11 22 33 44 55 66 77 88 55

The following is an explanation:

AA Packet header

E8 Bit5 is 1, extended frame bit4 is 0, data frame bit0~3 is 8, data length is 8, sending 8

bytes

67 45 23 01 For the frame ID 0x1234567

11 22 33 44 55 66 77 88 Send CAN frame data

55 End code

For example, the serial port is received:

AA E8 67 45 23 01 11 22 33 44 55 66 77 88 55

The accepted CAN is an extended frame, ID is 0x1234567, and the corresponding

data is 11 22 3344 55 66 77 88, 8 bytes, parsed as above

2. For example, the CAN extended frame ID is 0x1033021, and the corresponding

data is 0x 11 0x22:

Then the serial port sends data format to:

AA E2 21 30 03 01 11 22 55

The following is an explanation:

AA Packet header

E2 Bit5 is 0, extended frame bit4 is 0, data frame bit0~3 is 2, data length is 2, sending 2 bytes

21 30 03 01 For the frame ID 0x1033021
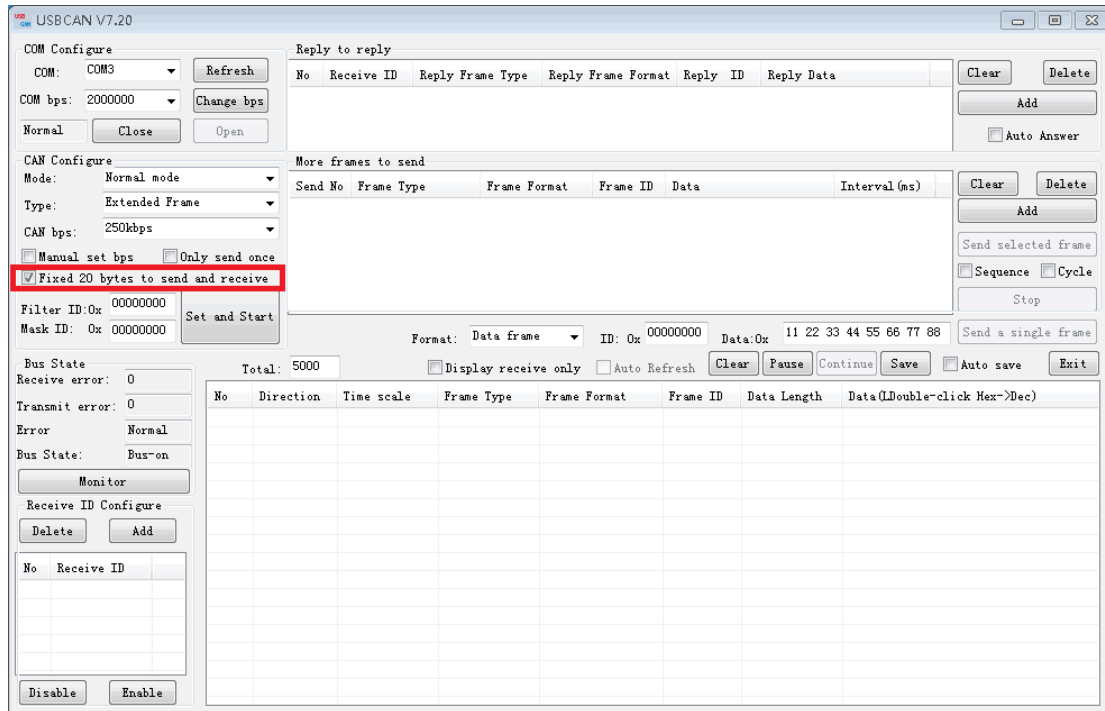
11 22 Send CAN frame data

55 End code

For example, the serial port is received

AA E2 21 30 03 01 11 22 55

The accepted CAN is an extended frame, ID is 0x1033021, and the corresponding data is 11 22, 2 bytes, parsed as above

2. Fixed 20 byte transceiver protocol

When the software is selected ☑Fixed 20 bytes to send and receive,

(for example, the red line is checked in the box above), click setup and start button. The definition of the converter's internal communication is fixed 20 byte transceiver definition. The specific protocol is as follows.

		Definition
0	Packet header	0xaa
1	Packet header	0x55
2	TYPE	0x01-Data
3	Frame type	0x01-Standard frame, 0x02-Extended frame
4	Frame format	0x01- Data frame，0x02-Remote frame
5	Frame ID data 1	1~8 bit, high bytes at the front, low bytes at the back
6	Frame ID data 2	9~16 bit, high bytes at the front, low bytes at the back
7	Frame ID data 3	17~24 bit, high bytes at the front, low bytes at the back
8	Frame ID data 4	25~32 bit, high bytes at the front, low bytes at the back
9	Frame data length	The data length of the CAN bus that is sent or accepted

10	Frame data 1	CAN sends or accepts data 1
11	Frame data 2	CAN sends or accepts data 2
12	Frame data 3	CAN sends or accepts data 3
13	Frame data 4	CAN sends or accepts data 4
14	Frame data 5	CAN sends or accepts data 5
15	Frame data 6	CAN sends or accepts data
16	Frame data 7	CAN sends or accepts data 7
17	Frame data 8	CAN sends or accepts data 8
18	Reserve	0x00
19	Check code	From frame type to error code, accumulating and low 8 bits (red part)

For example, we accept or send the data standard frame ID to 0x123, and the data

is 11 22 33 44 55 66 77 88

It is configured as follows

		Data
0	Packet header	0xaa
1	Packet header	0x55
2	TYPE	0x01
3	Frame type	0x01
4	Frame format	0x01
5	Frame ID data 1	0x23
6	Frame ID data 2	0x01
7	Frame ID data 3	0x00
8	Frame ID data 4	0x00
9	Frame data length	0x08
10	Frame data 1	11
11	Frame data 2	22
12	Frame data 3	33
13	Frame data 4	44
14	Frame data 5	55
15	Frame data 6	66
16	Frame data 7	77
17	Frame data 8	88

18	Reserve	0x00
19	Check code	**0x93** (0x01+0x01+0x01+0x23+0x01+0x00+0x00+0X08+ 0x11+0x22+0x33+0x44+0x55+0x66+0x77+0x88+0x00=0x293 **Low 8 bits are 0x93**)

For example, we accept or send the data extension frame ID to 0x12345678, and

the data is 01 02 03 04 05 06 07 08, It is configured as follows

		Data
0	Packet header	0xaa
1	Packet header	0x55
2	TYPE	0x01
3	Frame type	0x02
4	Frame format	0x01
5	Frame ID data 1	0x78
6	Frame ID data 2	0x56
7	Frame ID data 3	0x34
8	Frame ID data 4	0x12
9	Frame data length	0x08
10	Frame data 1	01
11	Frame data 2	02
12	Frame data 3	03
13	Frame data 4	04
14	Frame data 5	05
15	Frame data 6	06
16	Frame data 7	07
17	Frame data 8	08
18	Reserve	0x00
19	Check code	**0x44** (0x01+0x02+0x01+0x78+0x56+0x34+0x12+0x08 +0x01+0x02+0x03+0x04+0x05+0x06+0x07+0x08+0x00=0x144 **Low 8 bits are 0x44**)