

Communication Expert of Industrial IOT

User Manual

Serial to CAN USR-CAN114/112



Be Honest & Do Best

Your Trustworthy Smart Industrial IoT Partner

Product Feature

- CAN and RS485/RS232 bidirectional conversion
- CAN2.0A and CAN2.0B standard protocols
- Support transparent conversion, transparent band ID conversion, protocol conversion, MODBUS
 RTU conversion, custom protocol conversion
- Support extended frame only, standard frame only, custom frame ID reception
- Support 14 groups of custom frame ID filtering to avoid data interference
- Wide baud rate range, CAN baud rate: 5K~1Mbps; serial baud rate: 600~230400bps
- Multi-master and multi-slave functions, replacing multi-channel 485 with single-channel CAN interface
- Support custom baud rate
- SupportPC parameter configuration
- Support serial AT command configuration
- Support PCfirmware upgrade, firmware update is more convenient
- High and low temperature resistance,-40°C~85°C stable operation
- With 120 ohm termination resistor
- Support 5-24V wide voltage input, with anti-reverse connection protection
- Reliable hardware protection, electrostatic protection, surge, burst protection
- Hardware watchdog function, crash automatic restart, module more stable and reliabl



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1. Product Overview

1.1. Product Introduction

USR-CAN114/112 is an ultra-small rail-type CAN to RS485/RS232 device independently developed by the Internet of Things. This series of products features high speed, low latency, small size and simple use. It supports five data conversion modes: transparent conversion, transparent tape ID conversion, standard protocol conversion, Modbus RTU conversion and custom conversion. It can easily realize the interconnection between CAN devices and serial devices.

This series of products adopt industrial design standard,-40°C~85°C stable operation. Support 5~24V wide voltage terminal power supply. Wide baud rate range,RS232/RS485 communication mode supports baud rate 600~230400bps, CAN baud rate supports 5K ~1Mbps, support custom baud rate. Support AT commands and PC software configuration parameters, easy to use. The product comes with 120 Ω resistor, which can be quickly connected to CAN-bus. The product comes with guide rail (C45 GB) buckle, easy and fast installation.

In order to meet the needs of more customers, there are mainlytwo specifications to choose from.

Table 1	USR-CAN114/112 Specifications	
---------	-------------------------------	--

model	versions	specifically described			
	PS232 version	Serial port uses RS232 mode for communication,			
USK-CANTIZ	K3232 VE131011	press-type terminal wiring.			
		Serial port uses RS485 mode for communication,			
	ווטונושעכטדכא	press-type terminal wiring.			

1.2. Technical Parameters

Table 2	Product	basic	parameters
---------	---------	-------	------------

classify	parameter	numerical value
	Working Voltage	DC5~24V,Recommended 12V 1A
	Size	74*24*22mm (L * W *H, excluding terminals)
Basic	Installation	Rail mounting
parameters	Method	
	Reload Key	Press and hold to restore factory settings



	Indicator Light	POWER、WORK、COM、CAN
	CAN port	1-way CAN port, support standard CAN2.0A/B,
	Specification	press terminal wiring
	CAN port	5kbps ~ 1000kbps, support custom
	Baud Rate	
	Terminal	Built-in CAN bus 120 Ω termination resistor
	Resistance	
	Serial port	USR-CAN114:1 serial port (RS485), press terminal
	Specification	wiring
		USR-CAN112:1serial port (RS232), press terminal wiring
Interface	Serial port Baud	600-230.4K (bps)
Parameter	Rate	
	Data Bits	7、8
	Stop Bit	1、2
		When the data bit is 7 bits, it supports Odd, Even, Mark
	Parity bit	and Space;
	i unity sit	When the data bit is 8 bits, None, Odd and Even are
		supported.
	Operating	-40~85℃
	temperature	
	Storage	-40~105℃
Work	temperature	
Environment	Operating	5%~95% RH(no condensation)
	humidity	
	Storage humidity	5%~95% RH(no condensation)
	Conversion of	Transparent conversion, Transparent band ID



	mode	conversion, Standard conversion, Modbus conversion,
		Custom frame header/trailer conversion
Software	CAN ID	Support standard frame, remote frame
Function		Support standard frames only, remote frames only,
	Frame ID Filtering	custom input frame IDs (up to 14 groups)
	Serial packet	Support sustom subcontracting longth
	length	Support custom subcontracting length
	Switch Direction	Support bidirectional conversion, serial to CAN only,
	Switch Direction	CAN to serial only
	Firmware Upgrade	Support firmware upgrade on PC
	Parameter	AT command DC coftware configuration
	Configuration	AT command, PC software configuration
	Electrostatic	Air discharge 8kV
	Protection	
Protection	Electrical fast	
Parameter	pulse train	Power supply circuit 2kv; serial CAN port circuit 1kv
	Surge interference	Power supply circuit 1kV·CAN port circuit 2kV
	test	

2. Hardware Parameters

2.1. Size Description

Standardsize: 102*24*22mm (L * W * H, including terminals)

74*24*22mm (L * W * H, excludingterminals)





USR-DR114 Standard size diagram

2.2. Interface Description

The USR-CAN 114/112 has two interfaces. One way is CAN-bus interface, one way RS485/RS232 interface. Two interfaces are pressed terminal wiring, convenient and fast. The connector pinsare defined as follows.



Table 3 Terminal wiring definition

pin	functiondescription
DC 5-24V +	DC 5-24V power supply positive
DC 5-24V -	DC 5-24V power supply cathode
Н	CAN_H signal line connection terminal
L	CAN_L signal line connection terminal



RS	CAN 120 Ω termination resistor, RS and L connection,
	then the module internal 120 Ω resistor into the CAN bus
	RXRS232 receiver
KX/A	ARS485 receiver
TV/D	TXRS232 transmitter
17/0	BRS485 transmitter
GND	Digitally

<Description>

When USR-CAN114/112 and CAN bus are connected, CAN_H needs to be connected to CAN_H, CAN_L needs to be connected to CAN_L.

RS is the terminal resistance selection, RS and L are connected with wires, and the 120 Ω resistor inside the module is incorporated into the CAN bus; otherwise, the 120 Ω resistor is not connected to the bus.

According toISO 11898 specification, in order to enhance the reliability of CAN-buscommunication, the two terminals of CAN-busnetwork are usually added with terminal matching resistance (120 Ω), as shown in the following figure. The size of the terminal matching resistance is determined by the characteristic impedance of the transmission cable. For example, if the characteristic impedance of twisted pair is120 Ω , the two terminals on the bus should also integrate120 Ω terminal resistance.



CAN bus connection

2.3. Indicator Description

The USR-CAN114/112 has 4 indicators: POWER, WORK, COM, CAN. The user can easily observe the status of the equipment through the indicator lights, which aredefined as follows.



indicatorlam p	colour	functiondescription	
POWER	red	Always on when powered on, off when	
		powered off	
WORK	green	Flashing: normal operation of	
		equipment, frequency 1s;	
		Strobe: Enter CAN bus passive error	
		state;	
		Constant light: CAN bus operation	
		abnormal	
СОМ	green	Flashing: indicates that serial port data is	
		being received	
CAN	green	Flashing: indicates that CAN port has	
		data being received	

Table 4 indicator light rule

3. Product Function

3.1. Description of function configuration

CAN114/112 supports PC configuration parameters and AT command configuration.

Parameters can be configured and queried through AT commands. For details of AT commands, see Lipstick CAN Protocol Converter AT Command Set-USR-CAN114 112.

PC configuration operation is simple, convenient and easy to use. The following describes in detail the configuration parameters of the host computer.

Download the host computer from the official website. After opening it, first select the model, such as CAN112. You can check the default login of this model.



SelectProductModel	
语言(Language)	🗲
Product Model: Close	• CAN114 ~
S	Select the model

(1) First configure the serial port, click on the arrow on the right side of the serial port, configure the serial port parameters, confirm that the serial port number, baud rate, check bit, data bit and stop bit must be consistent with the serial port equipment connected to CAN114, click OK after configuration.

Open Serial Enter Cfg Mode Query Params Save Pa	rams Exit Cfg	A Mode Fw Update Se	elect Product	E.	
Basic Set Interface Set Conversion Set Gateway Information Product Mode	Connect		×		
Product Type CAN转RS485 SN Addr	Serial Config SerialPort:	COM13	~	_	
Data Channel O Network Serial Port	BaudRate: Parity: ByteBit:	115200 NONE 8	~	▷ Soroll to the lat	test news
	Борыс.	-	Confirm		
				>	

Serial port parameter configuration



- (2) Parameter configuration:
- Open the serial port, and the message interface on the right displays:[Info]: COM16 serial port is open
- Click to enter configuration status
- Click to read parameters
- After reading all the current parameters, configure the parameters
- After configuration, click Set Parameters
- Click Restart and the parameter configuration takes effect.

	- 0 X
Close Serial Enter Cfg Mode Query Params Save Params Exit Cfg Mode Fw Update Select Product Basic Set 1 Interface Set 2 Conversion Set 3 5	 2025-01-22,14:29:01:748: [Info]:COM16The serial port is open! 2025-01-22,14:29:03:628:
Gateway Information 4 Product Mode Firmware Versi Product Type CANigRS485 SN Address	[TX]:+++ 2025-01-22,14:29:03:763: [RX]:a 2025-01-22,14:29:03:768: [TX]:a 2025-01-22,14:29:03:885: [RX]:-0K
Data Channel O Network Serial Port	Scroll to the latest news
< 6 Factory reset Restart	> Clear Send

Parameter Configuration

3.2. CAN Parameters

Frame type:The frame type of CAN message during conversion, with standard frame and extended frame optional.

CAN ID:hexadecimal, hex format. Range: 0~7FF(standard frame), 0~ 1FFFFF (extended frame)

CAN baud rate:

Range 5K~1000K, default 100kbps. Common baud rates can be directly selected: 5K, 10K, 20K, 50K, 100K, 120K, 125K, 150K, 200K, 250K, 400K, 500K, 600K, 750K, 1000K. Baud rate calculation method: Baud rate =60M/[(1+ BS1 + BS2)*BRP]

BS1: Phase buffer section 1, range 1~16



BS2: Phase Buffer 2, Range 1~8

BRP: Frequency division value, range 1~1024

BS1\BS2\BRP is configurable and the device automatically calculates the current baud rate based on

these three values.

USR-CAN114&	CAN112 V1.0.5							
\odot	>	20	P i	<	A	•	(j)	
Open Serial	Enter Cfg Mode	Query Params	Set Params	Exit Cfa Mode	Fw Update	Select Product	Help	
				<u> </u>				
Basic Set	Interface Set Co	inversion Set						
CAN Para	ns							
	D							
	Protocol CAN							
	France Trans	1.5	CAN ID/Um					
	Frame Type Stand	lard Frame V	CAN ID(Hex)	- I				
	100%							
(CAN BaudRate	~						
0	Custom BaudBat 100	k						
	Custom Baudita 100	ĸ						
							-	
Serial Por	t Params							Scroll to the latest news
	Baud Rate 11520	~ 00	Data B	it 8	~			
	Parity Bit NON	E Y	Stop B	it 1	~			
<							>	
Factory rese	t Restart							

CAN Parameter Configuration

3.3. Serial Port Parameters

Baud rate:600~230400bps, default 115200bps
Data bits:7, 8, default 8
Check bit:Default is None
When the data bit is 7 bits, it supports Odd, Even, Mark and Space;
When the data bit is 8 bits, None, Odd and Even are supported.
Stop bit:1, 2, default 1



USR-CAN1148	CAN112 V1.0.5						
Q	. >	10	•	<	A	*	Û.
Open Serial	Enter Cfg Mode	Query Params	Set Params	Exit Cfg Mode	Fw Update	Select Product	Help
Basic Set	Interface Set C	onversion Set					
CAN Para	Protocol © CA Frame Type Exte CAN BaudRate 1008 Custom BaudRa(100	N nded Frame V C V k	CAN ID(Hex)	: 0			11111
Serial Po	rt Params						
	Baud Rate 1152	200 ~	Data Bi	t 8	~		
	Parity Bit NOM	۹E ۲	Stop Bi	t 1	~		
٢							>
Factory res	et Restart						

Serial port parameter configuration

3.4. Transformation Function

3.4.1. Conversion Parameter

Conversion mode: Support transparent conversion, transparent band ID conversion, standard protocol conversion, modbus protocol conversion, custom frame header and frame trailer conversion. Each mode conversion rule is different, and serial frame information and CAN frame information can be converted to each other. See Chapter 4 for a detailed description of conversion patterns.

Direction of conversion: By selecting the direction of conversion, data interference on the bus side that does not require conversion can be excluded. There are three conversion directions:

- Bidirectional: The converter converts data from the serial bus to the CAN bus and also converts data from the CAN bus to the serial bus.
- Serial to CAN only: only converts serial bus data to CAN bus, not CAN bus data.
- CAN to serial only: Only CAN bus data is converted to serial bus, not serial bus data.

Enable Frame Info:Takes effect only in transparent transitions. When this option is selected, the converter operates to add the frame information of CAN messages to the first byte of the serial frame. CAN frame information is not converted when unchecked.

Enable Frame ID:Takes effect only under transparent transitions. When this option is selected, the converter operates by adding the frame ID of the CAN message before the frame data of the serial frame and after the frame information (e.g. enabling frame information). Frame ID of CAN is not converted when unchecked.



Transparency ID Length: Takes effect only under transparency ID conversion. When serial data is converted into CAN message, the length of frame ID in serial frame of CAN message starting byte. The frame ID length can be filled with 1 - 2 bytes in the standard frame, corresponding to ID1 and ID2 of the CAN message respectively, and can be filled with 1 - 4 bytes in the extended frame, corresponding to ID1, ID2, ID3 and ID4 of the CAN message. The ID is 11 bits for standard frames and 29 bits for extended frames.

Transparency ID Position: Takes effect only under Transparency ID conversion. When serial data is converted into CAN message, the offset position of the start byte of frame ID of CAN message in serial frame.

Custom Header:Takes effect only with custom header/trailer transitions. User can customize serial frame header. Length: 1 byte.

Custom frame trailer:Only takes effect under custom frame header and frame trailer conversion. User can customize serial frame trailer. Length: 1 byte.

USR-CAN114&CAN112 V1.0.2	– 0 ×
Close Serial Enter Cfg Mode Query Params Save Params Exit Cfg Mode Fw Update Select Product	,
Basic Set Interface Set Conversion Set	2025-01-22,14:31:45:050: [RX]: +UDMHT:AA,FF
Conversion Params	ок
Conversion mode Transparent Conversion V Conversion Direction Both way V	2025-01-22,14:31:45:064: [TX]:AT+CANLT?
Enable Frame ID Enable Frame Information	2025-01-22,14:31:45:295:
Transparent Band ID Lenc 2 V Transparent Band ID 0 V	[RX]: +CANLT:OFF
Custom Frame Header AA Custom Frame Tail FF	
Packet Set	Joroll to the latest news
Serial port packet length 512	
Filter Parameters	
Filter Mode OFF ~	
Receive ID: Type ID Data Add	
Factory reset Restart	Clear Send

Schematic diagram of conversion parameter configuration

3.4.2. Subcontracting Setup

CAN114/112 supports custom serial packet length. If a packet of serial frame data contains a large amount of data and needs to be forwarded to CAN network, serial frame data can be packetized and sent by custom serial frame packet length. Setting range: 256~512 bytes.

Note: CAN frames must be 13 bytes due to standard protocol conversion regulations. Therefore, when the byte number of a serial frame exceeds 507 bytes, the byte number of the serial packet length must be set to a multiple of 13, otherwise the excess part cannot be transmitted correctly. If the number of bytes in a



packet of serial frames does not exceed 507 bytes, it is sufficient to set the packet length of serial frames to

be greater than 507 bytes.

USR-CAN114&CAN112 V1.0.2		- 0 ×
Close Serial Enter Cfg Mode Query Params Save Para	ms Exit Cfg Mode Fw Update Select Product a	2025-01-22,14:31:45:056:
Basic Set Interface Set Conversion Set	^	[RX]: +UDMHT:AA,FF
Conversion Params		
Conversion mode Transparent Conversion ~	Conversion Direction Both way \vee	2025-01-22,14:31:45:064: [TX]:AT+CANLT?
Enable Frame ID	Enable Frame Information	
Transparent Band ID Lenc 2 V	Transparent Band ID 0	2025-01-22,14:31:45:295: [RX]: +CANLT:OFF
Custom Frame Header AA	Custom Frame Tail FF	ок
		Scroll to the latest news
Daskat Sat		
Serial port packet length 512		
Filter Parameters		
Filter Mode OFF	~	
Receive ID: Type ID Data	Add	
<	>	
Factory reset Restart		Clear Send

Schematic diagram of subcontracting configuration

3.4.3. Filtering Function

CAN114/112 has the function of filtering ID, which can filter CAN bus data and selectively receive it. This minimizes network load from the network.

There are three filtering methods:

- Receive only extended frames
- Receive only standard frames
- custom

Only the extended frames and standard frames can be received, and only the configuration can be selected. The configuration mode is as follows:



* USR-CAN114&CAN112 V1.0.2	– a ×
Image: Close Serial Enter Cfg Mode Query Params Save Params Exit Cfg Mode Fw Update Select Product Basic Set Interface Set Conversion Set	2025-01-22,14:31:45:056: [RX]: +UDMHT:AA,FF OK 2025-01-22,14:31:45:064:
Filter Parameters	[TX]:AT+CANLT? 2025-01-22,14:31:45:295: [RX]: +CANLT:OFF OK Soroll to the latest news
Factory reset Restart	Clear Send

Filtering Settings

In custom mode, users can add their own IDs to receive, and up to 14 groups can be set.

The configuration is as follows:

- The upper computer enters the parameter configuration state, and the filter mode is selected to be customized.
- Click Add Message and enter the ID you want to receive. Each group can select extended frames or standard frames. Standard Frame Range: 0~ 7FF, Extended Frame Range:0~ 1FFFFF
- Click Write to restart and save parameters

Click Query to query all current filter IDs

Click Delete to delete the selected ID

Click Clear List to delete all current IDs



* USR-CAN114&C	CAN112 V1.0.5						
	Enter Cfg Mod	e Query Params	Set Params	K Exit Cfg Mod	♠ le Fw Update	Select Product	(j) Help
Basic Set	Interface Set	Conversion Set					
	Serial port packet	length 512					
Filter Pa	rameters						
	Filter Mode	Custom 1		~			
	Receive ID:	Type Standard Frame	ID es V 01	3	2 Add Query 4 Write in		
					Clear		
<							>
Factory reset	t Restart						

Custom Frame ID Configuration

3.5. Firmware Upgrade

Support easy firmware upgrade of equipment through host computer. The specific operation methods are as follows:

Click Firmware Upgrade--> Select Serial Number--> Click Browse to select firmware to be upgraded--> Click Start Upgrade--> Press reload key for a long time and power on the device again--> The device enters upgrade status, waiting for the progress bar to reach 100%, prompting that firmware transmission is successful and firmware upgrade is complete.



K USR-CAN114&CAN112 V1.0.2		— 0 ×
Open Serial Enter Cfg M	ode Query Params Save Params Evit Cfg Mode Ew Undate Select Product	[RX]: +CANLT:OFF
Basic Set Interface Set	Conversion Set	ок
Serial port pa	cket length 512 ↑	2025-01-22,14:31:45:301: [TX]:AT+PACKLEN?
Filter Parameters	SerialPort: COM16 Path: Browse	2025-01-22,14:31:45:421: [RX]: +PACKLEN:512 OK
Receive ID:	【升级步骤】	2025-01-22,14:38:33:505: [TX]:AT+ADDLIST? ☑ Soroll to the latest news
	[Update Steps] 1.Select serial port, FW path 2.Push [Start Update] button 3.Please push [Reload] and repower	
	Not upgraded	
٢	>	
Factory reset Res	art	Clear Send

Firmware upgrade diagram

3.6. Restore factory settings

Hardware factory reset: The module can restore the factory settings through hardware. After power-on,

press the Reload button, keep the Reload pressed and release it after 3-15s. The hardware factory settings can be restored.

Software factory reset: By setting software, you can restore software factory settings.

AT command to restore factory settings: AT command mode, send command AT+RELD, plus Enter, receive the correct reply +OK, that is, restore factory settings.

Set software settings:



USR-CAN114&	CAN112 V1.0.5						
Q	. >	10	B	<	A	•	<u>(</u>) .
Open Serial	Enter Cfg Mode	Query Params	Set Params	Exit Cfg Mode	Fw Update	Select Product	Help
Basic Set	Interface Set Con	nversion Set					
CAN Parat	Protocol CAN Frame Type Stand	ard Frame V	CAN ID(Hex)	: 1			
Serial Por	Params						
	Baud Rate 11520	0 ~	Data Bi	8	\sim		
	Parity Bit NONE	~	Stop Bi	t 1	~		
<							>

Setup Software Schematic

4. Examples of conversion patterns

4.1. Transparent Conversion

In the transparent conversion mode, CAN114/112 receives data from one bus and immediately converts it to the other bus side without adding data or modifying the data. This enables the exchange of data formats without changing the data content, and the converter is transparent to both ends of the bus.

CAN message frame information (frame type part) and frame ID come from user configuration in advance, and frame type and frame ID remain unchanged during conversion. The user can choose whether to convert the frame information and frame ID.

In this way, the communication burden of users will not be increased, but the data can be converted in real time, and the transmission of large traffic data can be undertaken.

4.1.1. Serial Frame to CAN--Transparent Conversion

Serial frame to CAN message: all data of serial frame are filled into data field of CAN message frame in sequence. The converter receives and converts data as soon as it detects data on the serial bus. The frame information (frame type part) and frame ID are configured in advance.



l Frame			
		CAN Message	
	Frame Information	Frame Information	Frame Informatior
	Frame ID	User Configuration	User Configuratic
	Frame ID	User Configuration	User Configuratio
		Data1	Data9
		Data2	Data10
		Data3	
	Data Field	Data4	
	Data Field	Data5	
		Data6	
		Data7	
		Data8	

Transparent Transmission-Serial Frame to CAN

Examples:

Configure frame ID as standard frame, CAN ID as "0006", conversion as follows:

🚟 USB-CAN Tool V9.11 - CHUANGXIN Technology	- 🗆 X	· ·	Uart Assistant	₩ - □ ×
Device(D) Operation(O) Settings(S) Information(I) View(V) Help(H) Language(L)		COM Configs	Data log	VartAssist V4.3.13
Send Data		Channel COM16 # -		~
Format: Standard V Type: Data VCANID(HEX): 00 00 00 01 Channel: 1 VNumber to se	end: 1 ID Inc.	Baudrate 115200 -	[2025-01-22 15:01:41.642]# SEND HEX>	
Bets(HEX): 31 32 33 34 35 36 37 38 Sand	alo: 10 mr. Date Inc.	Paritybit: NONE 👻	38 37 36 35 34 33 32 31 09 01 02	
	ins cipate inc.	Databits 8		
CAN Routing ID Filter Frm saved: 0	Stop send Send file	Stopbits 1 👻		
Unused CAN1 settings CAN2 settings	Clear Save	Close		
Statistics: Uhl Statistics: Uhl Reg (c. R. Q. Reg (c. R. Q		Decv Options		
rrm/s A. U. / rrm/s I. U Prm/s A. U Prm/s I. U		C ASCII (• HEX		
Index System Time Time Stamp Channel Directic Frame ID Type Format DLC Day	ta ^	Auto linefeed		
00000 15:01:41.653 0x13CC8DB ch1 Receive 0x0006 Data Standard 0x08 x	38 37 36 35 34 33 32 31	Receive to file	<	
a coor 15.01.41.055 Ox15CC022 Chi heceive ox0000 Data Standard Ox05 X	09 01 02	Pause receiving		
		More <u>Clear</u>		
		Send Options		
		C ASCII C HEX		
		Use escape chars		
		AT CMD auto CR+L	<u></u>	× .
		Send from file	Data Send 1. DCD • 2. RXD • 3. TXD • 4. D	TR 🗣 5. GND 🗣 6. 두 Clear 📩 Clear
		Period 1500 ms	38 37 36 35 34 33 32 31 09 01 02	
		Shortout History		Send
	×	IF Sending finished!	47/41 RX:391	TX:340 Reset

Transparent Transmission-Serial Frame to CAN Transmission Example

4.1.2. CAN to Serial Frame--Transparent Conversion

For CAN bus messages, upon receiving one frame of CAN message, forward one frame immediately.

If the configuration enables frame information, the converter operates by adding frame information of

CAN messages to the first byte of serial frames. CAN frame information is not converted when unchecked.

If enabled frame ID is configured, the converter operates by adding the frame ID of the CAN message



before the frame data of the serial frame and after the frame information (e.g. enabled frame information).

Sorial Framo		CAN I	lessage
Data1		Frame Information	Frame Information
Data2		Examp ID	User Configuration
Data3		Frame ID	User Configuration
Data4	Data4 Data5	Data1	
Data5			Data2
Data6			Data3
Doto7		Data Salal	Data4
Data/	Data Field	Data5	
			Data6
			Data7

Transparent Transmission--CAN to Serial Frame

Examples:

Configure the enable frame information and enable frame ID as follows:

🔛 USB-CAN Tool V9.11 - CHUANGXIN Technology	- 0	× 💌 •	Uart Assistant	₩ - □ ×
Device(D) Operation(Q) Settings(S) Information(I) View(V) H	elp(<u>H</u>) Language(<u>L</u>)	COM Configs	Data log	UartAssist V4.3.13
Send Data Type: Data CANID (HEX) 00 00 00 81 Data(HEX): 31 32 33 34 35 36 37 38 Send CAN Routing ID Filter	Channel: I Whumber to send: 1 III Send Cyole: 10 ms Da	Inc. Baudrate 115200 y Paritybits NONE y file Stopbits 1 y	[2025-01-22 15:15:36.594]# RECV MEX> 88 00 00 00 61 31 32 33 34 35 36 37 38 [2025-01-22 15:15:38.465]# SEND MEX> 11 12 13 14 15 16 17 18	^
Unused CAN1 settings CAN2 settings Statistics:Ch1 Frm/s R: 0.3 Frm/s T: 0	Receive Enable Clear Statistics:Ch2 Frm/s R: 0 Frm/s T: 0	we Close Recv Options SCII © HEX		
Index System Time Time Stamp Channel Directio Frame ID	Type Format DLC Data	Auto linefeed		
 ● 00000 15:15:36.532 - ch1 Send 0x00000081 ● 00001 15:15:38.502 0x1EC517E ch1 Receive 0x0006 	Data Extended 0x08 x 31 32 33 34 35 36 37 Data Standard 0x08 x 11 12 13 14 15 16 17	Receive to file Pause receiving More Clear		
		Send Options	1	
		C ASCII © HEX Use escape chars AT CMD auto CR+L Append checkbits Send from file Period 1500 ms Shorteut <u>History</u>	Data Send 1. DCD • 2. RXD • 3. TXD • 4. DTR • 11 12 13 14 15 16 17 18 55 47.2 PX 402	5. GND ♦ 6. ↓ Clear ↑ Clear

Transparent Transmission--CAN to Serial Frame Transmission Example

4.2. Transparent zone ID conversion

Transparent band identification transformation is a special use of transparent transformation and has no protocol attached. This method can convert the "address" in the serial frame into the identification field of CAN message, where the starting position and length of serial frame ID in the serial frame can be configured. The converter extracts the frame ID during conversion and fills it in the frame ID field of the CAN message as the ID of the CAN message when the serial frame is forwarded. Similarly, when CAN messages



are converted to serial frames, the ID of CAN messages is also converted to the corresponding position in the serial frame.

In this way, the converter adapts to the user's custom protocol to the maximum extent possible.

Note: In this conversion mode, the CAN ID of the CAN parameter setting item of the configuration software is invalid because the identifier (frame ID) sent is filled with data in the serial frame described above.

4.2.1. Serial Frame to CAN--Transparent Band ID Conversion

Configure the CAN frame type and the start address and length of the Frame ID of the CAN message carried in the serial frame. The range of start address is 0~7; the length range is standard frame: 1~2, extended frame: 1~4.

During conversion, CAN message "frame ID" in serial frame is converted into CAN frame ID field according to prior configuration. If the configured transparent tape ID length is less than the frameID length of the frame type of the CAN message, 0 is added to the high byte of the frameID in the CAN message.

ne ress	Frame Data
0	Data1
1	Data2
	(ID1)
2	Data3
З	Data4
	Duta
4	Data5
5	Data6
6	Data7
-	Data
/	Data8
N-2	Data N-1
NL 1	Data N

Transparent tape ID transmission-serial frame to CAN

Examples:

Configuration frame type is extended frame, starting address is 4, length is 2, serial frame to CAN is as follows:



📃 USB-CAN Tool V9.11 - USBCAN-II - SN:Serial number: 31F0001A3CE, firmware version number: V3.40 - CH 🚽 🗌 🗙	·	Uart Assistant	· □ - □ ×
Device(D) Operation(O) Settings(S) Information(I) View(V) Help(H) Language(L)	COM Configs	Data log	VartAssist V4.3.13
Send Data	Channel COM16 # -		~
Format: Extended V Type: Data VCANID(HEX): 00 00 00 81 Channel: 1 V Number to send: 1 IB Inc.	Baudrate 115200 -	[2025-01-22 15:53:16.873]# SEND HEX>	
Dete(MEW): 21 22 23 34 25 26 27 28 Carl Solar Tra	Paritybit: NONE 🔻	[2025-01-22_15:53:22.060]# RECV HEX>	
Send Lydre. 10 ms Libera inc.	Databits 8	31 32 33 34 00 81 35 36 37 38	
CAN Routing ID Filter Frm saved: 0 Stop send Send file	Stopbits 1		
Unused CAN1 settings CAN2 settings	Close		
CTeal 28A6			
Statistics:Ch1 Statistics:Ch2	Recv Options		
Frm/s R: 0 Frm/s T: 0 Frm/s R: 0 Frm/s T: 0	CASCII © HEX		
Index System Time Time Stamp Channel Directic Frame ID Type Format DLC Data	Auto linefeed		
📦 00000 15:53:16.902 0x86F58 ch1 Receive 0x00001516 Data Extended 0x06 x 11 12 13 14 17 18	Receive to file		
● 00001 15:53:22.007 - ch1 Send <u>0x00000081</u> Data Extended 0x08 x 31 32 33 34 35 36 37 38	Pause receiving		
	More <u>Clear</u>		
	Send Options		
	Use escape chars		
	T AT CMD auto CR+L		~
	Append checkbits	Data Send 1 DCD # 2 RXD # 3 TXD #	
	Send from file		
	Period 1500 ms	11 12 10 14 10 10 11 10	Send
	Shortcut History	<u> </u>	
	If Ready!	68/61 RX	:615 TX:506 Reset

Transparent tape ID transmission-serial frame to CAN example

4.2.2. CAN to Serial Frame--Transparent Band ID Conversion

For CAN messages, a frame is forwarded immediately upon receipt of a frame, and the ID in the received CAN message is converted accordingly according to the position and length of the CAN frame ID configured in advance in the serial frame. Other data are forwarded sequentially.

Note: If the CAN frame ID length is greater than the set transparent tape ID length, only the lower byte is converted to the corresponding position of the serial frame. For example: CAN frame ID is 01020304, the set transparent band ID length is 2, then only 0304 will be converted to the corresponding position in the serial frame.

Serial Frame		CAN Information			
Data Data1		Frame Information	Frame Information		
		FrameID1			
ameids		Frame ID	FrameID2		
FrameID4		Frame iD	FrameID3		
Data2			FrameID4		
Data3			Data1		
2 = t = 1			Data2		
ata4			Data3		
Data5		Data Field	Data4		
Data6			Data5		
Data7			Data6		
			Data7		
Data8			Data8		

Transparent tape ID transmission--CAN to serial frame



Examples:

Configuration frame type is extended frame, starting address is 4, length is 2, CAN frame transfer serial

is as follows:



Transparent tape ID transmission--CAN to serial frame example

4.3. Standard Protocol Conversion

Standard CAN frame format, each CAN frame contains 13 bytes, 13 bytes of content includes CAN frame information + frame ID + data frame.

By configuring the frame information correctly (the first byte of data), you can flexibly send out standard frames, extended frames, and even remote frames. The details of standard frames, extended frames and even remote frames can be obtained by correctly parsing 13-byte serial frames.

Note:

(1) In this conversion mode, the CAN parameter items "CAN ID" and "Frame Type" of the configuration software are invalid, because the frame ID sent at this time is filled with the frame ID data in the 13-byte serial frame described above, and the frame type is determined by the frame information in the 13-byte serial frame.

(2) In this mode, the conversion must be performed in strict accordance with the 13-byte serial data format. First of all, we must ensure that the frame information is correct, the reserved bit must be zero, and the data length cannot be greater than 8, otherwise it will not be converted. Each frame is fixed to be 13 bytes, if insufficient must be filled with 0. Serial data satisfying the format of 13 bytes in the same serial data frame corresponds to a CAN message, and serial data frames less than 13 bytes are not converted, so it is necessary to ensure that the converted serial data frames are aligned with 13 bytes.



(3) If a packet of standard converted serial data frames exceeds 507 bytes, the serial packet length must be set to a multiple of 13 bytes. Otherwise, it cannot be correctly divided into standard CAN frames.

(4) The converted serial data frames are aligned with 13 bytes.

The standard CAN frame format is as follows:

CAN fixed format (1 CAN frame contains 13 bytes)					
Frame	Frame ID	Frame data			
Information	Tame id				
1Byte	4Byte	8Byte			

Frame information: length 1 byte, used to identify frame information: frame type, frame length.

Bit7							Bit0
FF	RTR	Retain	Retain	B3	B2	B1	BO

FF: Identification bit of standard frame and extension frame, 1 is extension frame, 0 is standard frame

RTR: identification bit of remote frame and data frame, 1 is remote frame, 0 is data frame

Reserved: reserved bit must be filled in 0, not 1.

B3-B0: data length bits, identifying the data length of the CAN frame.

Frame ID:Length 4 bytes; high order first, low order last. The standard frame significance bit is 11 bits and the extended frame significance bit is 29 bits.

12h	34h	56h	78h		00h	00h	01h	23h
Extended F	Extended Frame ID: 0x12345678					anrepreser	nt either ar	ו extende
					frameID or a standard frameID.			
					Extended Frame ID: 0x00000123			
					Standarc	d Frame ID	: 0x0123	
					Extended frames and standard frame			rd frame
					are distir	nguished b	y frame in	formatio
ne data:leng	gth 8 bytes,	insufficie	nt must be	filled with	n 00.			

Examples:



USB-CAN Tool V9.11 - USBCAN-II - SN:Serial number: 31F0001/	A3CE, firmware version number: V3.40 - CH 🚽 🛛 🛛 🗡	· ·	Uart Assistant	₩ - □ ×
Device(D) Operation(Q) Settings(S) Information(I) View(V)	Help(<u>H</u>) Language(<u>L</u>)	COM Configs	Data log	VartAssist V4.3.13
Send Data		Channel COM16 # -	-	~
Format: Extended V Type: Data VCANID(HEX): 01 02 03	04 Channel: 1 Vumber to send: 1 ID Inc.	Baudrate 115200 -	[2025-01-22 16;34:30.976]# SEND HEX>	
Data(HEX): 31 32 33 34 35 36 37 38	Send Gyrale: 10 mr. Date Tro	Paritybit: NONE 🔻	88 00 00 21 22 11 12 13 14 15 16 17 18 [2025-01-22 16;34:33.780]# RECV HEX>	
Data (Mark) - of or of of of of of of	Send Gydre. 10 ms Elberte into:	Databits 8	88 01 02 03 04 31 32 33 34 35 36 37 38	
CAN Routing ID Filter	Frm saved: 0 Stop send Send file	Stopbits 1		
Unused CAN1 settings CAN2 settings	Receive Enable	Close		
	Jare			
Statistics:Chl	Statistics:Ch2	Recv Options		
Frm/s K: U Frm/s T: U.3	Frm/s K: U Frm/s T: U	ASCII © HEX		
Index System Time Time Stamp Channel Directio Frame I	D Type Format DLC Data	Auto linefeed		
00000 16:34:31.002 0x1817C00 ch1 Receive 0x00002	122 Data Extended 0x08 x 11 12 13 14 15 16 17 18	Receive to file		
00001 16:34:33.721 - ch1 Send 0x01020	304 Data Extended 0x08 x 31 32 33 34 35 36 37 38	Pause receiving		
		More Clear		
		Send Options		
		Use escape chars		
		T AT CMD auto CR+L		
		Append checkbits	Data Send 1 DCD @ 2 BXD @ 3 TXD @ 4 TV	TR 5 GND 6 6 Clear + Clear
		Send from file	88 00 00 21 22 11 12 13 14 15 16 17 18	
		Period 1500 ms		Send
		Shortcut Aistory]	
<	>	If Readv!	72/77 RX:664	X:684 Reset

Standard Protocol Transmission Examples

4.4. Modbus protocol conversion

Modbus protocol conversion can convert the standard Modbus RTU serial data protocol into a specific CAN data format, which generally requires CAN bus device messages to be editable.

The converter uses the standard Modbus RTU protocol format on the serial port side, so the converter not only supports users to use Modbus RTU protocol, but also can be directly connected to other devices that support Modbus RTU protocol.

On the CAN side, a simple and easy-to-use segmented communication format is developed to implement Modbus communication. The converter's role in this is still protocol validation and forwarding. Support Modbus protocol transmission, rather than Modbus master or slave, users can communicate according to Modbus protocol.

Note:

(1) In this conversion mode, the "CAN ID" of the "CAN Parameters" item of the configuration software is invalid because the frame ID sent is filled in by the address field in the Modbus RTU serial frame.

4.4.1. Frame Format

(1) Serial Frame

The serial interface uses the standard Modbus RTU protocol, so the user frame conforms to this protocol. If the transmitted frame does not conform to Modbus RTU format, the converter discards the received frame without converting it.

(2) CAN Frame

CAN side designs a set of segmentation protocol format, which defines a method for segmenting and reassembling information with a length greater than 8 bytes, as shown below.



Bit Number	7	6	5	4	3	2	1	0	
Frame Information	FF	FTR	Х	x	X DLC(Data Length)				
FrameID1	Х	Х	X		10	0.28-ID.2	24		
FrameID2				ID.23	-ID.16				
FrameID3				ID.15	-ID.8				
FrameID4		ID.7-ID.0 (Modbus RTU Address Code)							
Data1	Segment Marker	ment Segment Segment Counte							
Data2				Chara	acter1				
Data3				Chara	acter2				
Data4				Chara	acter3				
Data5	Character4								
Data6	Character5								
Data7	Character6								
Data8	Character7								

Segmented Protocol

CAN frame information (remote frame or data frame; standard frame or extended frame) is set by configuration software. The Modbus protocol content of the transmission can start from the "data 2" byte, if the protocol content is greater than 7 bytes, then the remaining protocol content will continue to be converted according to this segmented format until the conversion is completed.

Data1 is segment control information (1byte,8bits), and its meaning is as follows:

- Fragment mark: occupies 1 bit (Bit7), indicating whether the message is a fragment message. A 0 in this bit indicates an individual message and a 1 in this bit indicates a frame belonging to a segmented message.
- Segment type: 2 bits (Bit6, Bit5), used to indicate the type of the message in the segment message:

Place Value	Meaning
00	The first segment
01	Intermediate segment
10	That last partition

 Segment counter: occupies 5 bits (Bit4~Bit0), indicating the serial number of this segment in the whole message. If it is the number of segments, then the value of the counter is the number. This makes it possible to verify whether segments are missing at reception.



4.4.2. Conversion Mode

(1) Modbus RTU to CAN:

The address field of Modbus RTU protocol is converted into ID4 (extended frame) or ID2 (standard frame) of frame ID in CAN message, and the identification is unchanged during the conversion of this frame.

CRC check bytes are not converted into CAN messages, and CAN messages do not need to have check bytes of serial frames, because CAN bus itself has a good check mechanism.

The conversion is the Modbus RTU protocol content-function code and data field, which are converted in turn into the data field of CAN message frame (starting from the second data byte, the first data byte is used by the segmented protocol), because the length of Modbus RTU frame varies according to different function codes. CAN message can only transmit 7 data in one frame, so the converter will convert the long Modbus RTU frame into CAN message segment and send it with the above CAN segment protocol. When the user receives on the CAN node, the function code and the data field can be processed.

Note: In the process of serial port side to CAN side conversion, the converter will only convert when it receives a complete and correct Modbus RTU, otherwise there will be no action.

(2) CAN to Modbus RTU:

For Modbus protocol data of CAN bus, cyclic redundancy check (CRC16) is not required. The converter receives according to the segmented protocol, automatically adds cyclic redundancy check (CRC16) after receiving a frame analysis, and converts it into Modbus RTU frame to send to serial bus.

Note: If the received data does not conform to the segmentation protocol, the data will be discarded without conversion.



	CAN Information	CAN Information1	CAN Information2
MODBUS	Frame Information	Frame Information	Frame Information
RTU	ID1	0x00	0x00
Address	ID2	0x00	0×00
Field	ID3	0x00	0x00
Code	ID4	Data Field	Data Field
Data Field	Data1	Segment Protocol	Segment Protocol
	Data2	Function Code	
	Data3		
	Data4		contract of the second second
CRC Field	Data5	Data Field	Data Field
	Data6	Data Field	
	Data7		
	Data8		

Modbus Protocol Conversion

Examples:

Serial transmission: 01 03 14 00 0A 00 00 00 00 00 14 00 00 00 00 17 00 2C 00 37 00 C8 4E 35

01 as Modbus address code, converted to CAN ID.7-ID.0, the last 2 bytes (4E 35) for Modbus RTU CRC

check, lost without conversion.

The final effect is as follows:

USB-CAN Tool V9.11 - CHUANGXIN Technology		- 🗆 🛛	· · /	Uart Assistant	- 🗆 ×
Device(D) Operation(O) Settings(S) Information(I) View(V)	Help(<u>H</u>) Language(<u>L</u>)		COM Configs	Data log	VartAssist V4.3.13
Send Data			Channel COM16 # -		
Format: Extended V Type: Data VCANID(HEX): 01 02 03	04 Channel: 1 Vumber to send: 1	ID Inc.	Baudrate 115200 -	[2025-01-22 16:45:43.622]# SEND HEX> 01 03 14 00 0A 00 00 00 00 01 14 00 00 00	00 00 17 00 2C 00 37 00 C8 4E
Data(HEX): 31 32 33 34 35 36 37 38 Send	Send Cycle: 10) ms Data Inc.	Databita 8	35	
CAN Routing ID Filter	Frm saved: 0 St	top send Send file	Stopbits 1		
Unused CAN1 settings CAN2 settings	Receive Enable	Clear Save	Close		
Statistics:Ch1	Statistics:Ch2		Prev Options		
Frm/s R: 0 Frm/s T: 0	Frm/s R: 0 Frm/s T: 0		C ASCII @ HEX		
Index System Time Time Stamp Channel Directic Frame I	D Type Format DLC Data		✓ Log mode display		
00000 16:45:43.631 0x1E7FEB1 ch1 Receive 0x00000	001 Data Extended 0x08 x 81 03	14 00 0A 00 00 00	Auto lineteed	<	
00001 16:45:43.631 0x1E7FEBF ch1 Receive 0x00000	001 Data Extended 0x08 x A2 00	00 14 00 00 00 00	Receive to file		
● 00002 16:45:43.631 0x1E7FECE ch1 Receive 0x00000	001 Data Extended 0x08 x A3 00	17 00 2C 00 37 00	Fause receiving		
00003 16:45:43.631 0x1E7FED7 ch1 Receive 0x00000	001 Data Extended 0x02 x C4 C8		More Ulear		
			Send Options		
			C ASCII @ HEX		
			Use escape chars		
			T AT CMD auto CR+L		~
			Append checkbits	Data Send 1. DCD • 2. RXD • 3. TXD • 4. D	TR . 5. GND . 6. Clear + Clear
			Send from file		
			Period 1500 ms Shortout Mistory	00 C8 4E 35	Send
<		>	If Ready!	72/79 RX:664	TX:734 Reset

Modbus RTU to CAN Example

CAN port frame ID set to 00 00 02 02, send: 03 00 00 01

The conversion effect is as follows:



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Device(D) Operation(D) Settings(S) Information(I) View(V) Help(H) Language(L) Send Data Format: Standard V Type: Data CANID(HEX): 00 00 00 02 Channel: 1 Viewber to send: 1 IID Inc. Data(HEX): 03 00 00 00 01 Send Send Send Cycle: 300 ms Data Inc. CAN Routing ID Filter Vinused CANI settings CANZ settings Statistics:Ch1 Frm/s R: 0 Frm/s T: 0 Index System Time Time Stamp Channel Directio Frame ID Type Format DLC Data 00000 09:25:44.478 - chi Send 0x0002 Data Standar: 0x05 x 03 00 00 00 01	Com Configs Channel COM16 € y Baudrate 115200 y Paritybiti NONE y Databits 8 y Stopbits y Close Recv Options ↑ ASCII ← HEX ↓ Cog mode display ↓ Auto linefied ↓ Receive to file Pause receiving MoreClass	Data log [2025-01-23 09:25:44.536]# RBCV HEX> 02 00 00 00 01 9C 00	VartAssist V4.3.13
ζ	Send Options C ASCII © HEX Use escape chars AT CMD auto CR-L Append checkbits Send from file Period 1500 ms Shortout History if Readv!	Data Send 1. DCD ● 2. RXD ● 3. TXD ● 4. DT 2.0 ● 0kcs 95	R • 5. GND • 6. F Clear Clear Send TX:0 Reset

CAN to Modbus RTU Example 1

If multiple frames are to be sent, data forwarding is performed after the last frame is sent according to

the packetization rules. If sent:

Frame1CAN message:81 03 14 00 0A 00 00 00

Frame2CAN message:a2 00 00 14 00 00 00 00

Frame3CAN message:a3 00 17 00 2C 00 37 00

Frame4CAN message:c4 c8

Frame ID 00 01, the effect is as follows:

USB-CAN Tool V9.11 - CHUANGXIN Technology	·	×	Uart Assistant 🛛 🙀 - 🗆 🗙
Device(D) Operation(Q) Settings(S) Information	on(I) View(V) Help(H) Language(L)	COM Configs	Data log VartAssist V4.3.13
Send Data Format: Standard V Type: Data CANID(H Data(HEX): o4 o8 Send CAN Routing Unused Statistics:Chi Frm/s T: 0	(HEX): 00 00 00 01 Channel: 1 Image: The send: 1 Image: Image: The send: 1 Send Cycle: 300 ms Data Frm saved: 0 Stop send Send fi CAM2 settings Receive Enable Clear Statistics:Ch2 Frm/s R; 0 Frm/s T; 0	Channel COM16 # v Baudrate 115200 v Paritybit NONE v Databits 8 v Stopbits 1 v Recy Options	[2025-01-23 09:27:45.380]# RECV HEX> 01 03 14 00 0A 00 00 00 00 00 14 00 00 00 00 17 00 2C 00 37 00 C8 4E 35
Index System Time Time Stamp Channel Dir ● 00000 09:27:13.832 - chi Sen ● 00001 09:27:33.785 - chi Sen ● 00002 09:27:39.933 - chi Sen ● 00003 09:27:45.321 - chi Sen	irectio Frame ID Type Format DLC Data end 0x0001 Data Standar-0x08 x 81 03 14 00 0A 00 00 00 end 0x0001 Data Standar-0x08 x 42 00 00 14 00 00 00 00 end 0x0001 Data Standar-0x08 x 43 00 17 00 2C 00 37 00 end 0x0001 Data Standar-0x02 x C4 C8	V Log mode display Auto linefeed Receive to file Pause receiving <u>Hore</u> Clear	
		Send Options C ASCII © HEX Use escape chars AT CMD auto CR+L AT CMD auto CR+L Send from file Period 1500 ms Shortcut History	Data Send 1. DCD • 2. RXD • 3. TXD • 4. DTR • 5. GND • 6. Clear • Clear Send Send

CAN to Modbus RTU Example II

4.5. Custom frame header and trailer

In order to make it convenient for users to use CAN-bus, the serial frame format is close to CAN frame format, and the start and end of a frame are specified in the serial frame, namely "frame head" and "frame



tail", which can be configured by users themselves.

4.5.1. Serial Frame to CAN--Custom Frame Header/Trailer Conversion

Serial frame format must conform to the specified frame format, otherwise it cannot be transmitted correctly. Serial frames must contain: header, data length, data field, trailer.

The frame header and frame trailer are customized by the customer, 1 byte.

Data length refers to the byte length of the data field. The data length and trailer data must match for proper transmission, otherwise discarded. For example, the frame header is configured as AA, and the frame trailer is configured as FF. Serial frame AA 03 01 02 04 FF can be transmitted normally. If a serial frame sends AA 03 01 02 03 04 FF followed by 04 in the data field 01 02 03 instead of FF at the end of the frame, the frame is dropped and cannot be transmitted.

As with transparent conversion, in custom protocol conversion, CAN ID and CAN type need to be configured. Frame header, frame trailer, and data length are not converted to CAN frames.

Serial frame		CAN Information		
Frame Header		Frame Information	Frame Information	Frame Information
Data Length		Frame ID	User Configuration	User Configuratio
Data I Data2			User Configuration	User Configuratio
Data2		Data Field	Data1	Data9
Datas			Data2	
Data4			Data3	Data N-1
			Data4	Data N
Data N-1			Data5	
Data N-1			Data6	
Data N			Data7	
Frame Tail			Data8	

Custom frame header and frame trailer--serial frame to CAN

Examples:

Set the frame header to AA and the frame trailer to FF. Extended frame, frame ID 00 06, data conversion as follows:



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Device(D) Operation(Q) Settings(S) Information(I) View(V) Help(H) Language(L)		COM Configs	Data log	VartAssist V4.3.13
Send Data		Channel COM16 # -	-1	~
Format: Standard V Type: Data VCANID(HEX): 00 00 00 01 Channel: 1 VNumber to send: 1	ID Inc.	Baudrate 115200 v	[2025-01-23 09:33:16.532]# SEND HEX>	
Data(HEX): o4 o8 Send Cycle: 30	0 ms 🗌 Data Inc.	Paritybit: NONE	AK 00 11 22 33 44 00 FF	
		Databits 8		
CAN Routing ID Filter Frm saved: 0 St	op send Send file	Stopbits		
Unused CAN2 settings CAN2 settings Receive Enable	Clear Save	· Close		
Statistics:Ch1 Statistics:Ch2	/	Recy Ontions		
Frm/s R: 0 Frm/s T: 0 Frm/s T: 0		C ASCII C HEX		
Talue Conta Tias Tias Chara Charal Disasti Rusa TD Tala Rusat DIC Data		✓ Log mode display		
O0000 09:33:16.547 0x20A012E ch1 Receive 0x00000006 Data Extende 0x05 x 11 22 33	44 55	Auto linefeed Passive to file	<	
		Pause receiving		
		MoreClear		
		Send Options	2	
		Use escape chars		
		AT CMD auto CR+L		v
		Append checkbits	Data Send 1. DCD • 2. RXD • 3. TXD • 4.	DTR • 5. GND • 6. 🗸 Clear 🕇 Clear
		Period 1500 ms	AA 05 11 22 33 44 55 FF	1
		Shortout Mistory		Send
<	>	l ∉ Readv!	3/1 RX:39	TX:8 Reset

Custom Frame Header and Frame Tail--Serial Frame to CAN Example

4.5.2. Serial Frame to CAN--Custom Frame Header/Trailer Conversion

CAN bus message receives a frame and forwards a frame. The module converts the data in the CAN message data field in turn, and automatically adds frame header, frame length, frame information and other data to the serial frame. In fact, it is the reverse form of serial frame to CAN message.



Custom frame header and trailer--CAN to serial frame

Examples:

Set the frame header to AA and the frame trailer to FF. The conversion is as follows:



USB-CAN Tool V9.11 - CHUANGXIN Technology — 🗆 🗙	· ·	Uart Assistant	×
Device(D) Operation(D) Settings(S) Information(I) View(V) Help(H) Language(L) Send Data Format: Extended V Type: Data VCANTD(HEX): 00 00 00 01 Channel: 1 Viewber to send: 1 ID Inc. Data(HEX): 01 02 03 04 Send Send Send Cycle: 300 ms Data Inc. CAN Rowting ID Filter Frm saved: 0 Stop send Send file Vinused CANI settings CANZ settings Receive Enable Clear Save Statistics:Chi Frm/s R: 0 Frm/s T: 0 Frm/s T: 0 Index System Time Time Stamp Channel Directio Frame ID Type Format DLC Data 0 00000 09:34:30.505 - chi Send 0x00000001 Data Extende 0x04 x 01 02 03 04	COM Configs Channel COM16 # y Baudrate 115200 y Paritybits NONE y Databits 8 y Stophity y Close Recv Options C ASCII © HEX G ASCII © HEX Log mode display Auto linefeed Receive to file Pause receiving <u>Hore</u> Clear	Data log [2025-01-23 09:34:30 575]# RECV HEX> AA 04 01 02 03 04 FF	VartAssist V4.3.13
<pre></pre>	Send Options C ASCII C HEX Use escape chars AT CMD auto CR+L Append checkbits Send from file Period 1500 ms Shortout History If Ready!	Data Send 1. DCD • 2. RXD • 3. TXD • 4. DTR • AA 05 11 22 33 44 55 FF 4/1	5. GND

Custom frame header and trailer--CAN to serial frame example

5. Contact Information

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7. Update History

	opuate content	Turnover time
V1.0.0	First edition	2025-02-10
Vo	our Trustworthy Smart II	T Partner
		r ai tiloi



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