CAN/CANFD -4G

instruction manual

Version: V1.2

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catalogs

1 Equipment Introduction

1.1 Equipment Description

CAN/CANFD-4G (hereinafter referred to as this device) is specialized in real-time recording, storing, 4G transmission, playback, and intelligent relaying of bus data. The device can be by external CAN/CANFD powered and battery. The battery life 9V~35V DC power supply, USB up to 7.5 hours, and the other two power supply modes can run continuously without interruption.

The device integrates total of a 6 CAN/CANFD bus interfaces, all of which are high-speed CANFD interfaces and compatible with the CAN bus. It can simultaneously receive 6 CANFD or CAN bus data and record and store them. The storage medium is a TF card, which can support up to a capacity of . 1 TThe CANFD/CAN bus rate can be set via the configuration file. After recording, can directly through the the data be taken out interface, or the USB or Type-C TF card can be pulled out and the through data can be taken out a card reader. The data storage format supports TF TXT, CSV, ASC, BIN, and CAN (supporting Zhou Ligong CANpro software), and the storage format can be set through the configuration file.

This device can be as a used bus intelligent repeater. The relay filtering conditions can be via the CANFD/CAN set configuration file on the card. TF For details, see section 3.2.4.2.

This device can support the playback function of recorded data. Put the data file to be played back into TF, enable the playback function (configuration file setting), then power on the device, and the device will send the data according to the file content in order to the corresponding port. For details, see Section .3.2.4.3

This device supports data filtering function. By filtering the configuration of the data to be recorded, it can greatly reduce the amount of data and save storage space. This device supports 4G remote transmission function.

1.2 Performance Characteristics

Up to 550MHz 32-bit industrial grade MCU, up to 1MB FLASH, 564KB SRAM; standard 2500mAh 3.7V battery , up to stand-alone battery power;type 166507.5 hours of

Can be powered by external DC power supply (DC + 9V~35V/0.35A); can be powered USB cable 5V/0.5A.

6-way CAN/CANFD receive and store at the same time with full load, no frame loss. Operating temperature: -40℃ ~+85℃.

The CAN bus supports CAN2.0A, CAN2.0B, CANFD, and complies with ISO11898-1/2/3;

CAN bus baud rate supports 10Kbps~1000Kbps configurable; CANFD supports up to 5M baud rate. Supports automobile VIN code acquisition;

Recording speed: up to for 6-channel simultaneous recording10000+frames/s ; up to for single-channel recording30000+frames/s ; relay performance: up to for unconditional relay1000+frames/s ;

1.3 Functional Features

Offline recording: No need to connect to a PC, can be recorded directly from the power supply.all data on the bus CAN/CANFD

TF card storage: standard 64G SanDisk class 10 high-speed TF card, can store 700 million frames of CAN/CANFD data.

TF card storage capacity limitation: no limitation, optional. Measured 1T can store 112 billion frames of CAN/CANFD data. Offline playback: The saved data can be sent back to directly as it isthe CAN/CANFD bus , simulating the signal sent by the device. Offline relay: between , you can relay intelligently, forward directly or rewrite and forward. CANFD1~ and CANFD6 Full range of CAN lines: Supports CAN/CANFD.

Built-in clock: you can save the received Beijing time for each frame of data. Data saving format: txt, csv, asc, bin, can.

1.4 Applications

Automotive CAN/CANFD Data Sample Acquisition CAN/CANFD Data Failure Playback Analysis CAN/CANFD Network Bridging and Relaying
Industrial ControlsData StorageIntelligent Buildings

experimental teaching

4G Remote Monitoring

1.5 bill of sale

Table 1. **List of CAN loggers for sale**

serial number	name (of a thing)	quantities	unit (of measure)	note
1	CAN/CANFD-4G main unit	1	classifier for heavy objects, such as machines, TVs, computers; theater performances	
2	TF card	1	sheet of paper	Gift 64, SanDisk U1 Card
3	TF Card Reader	1	classifier for individual things or people, general, catch-all classifier	Complimentary Support USB2.0
4	USB cable	1	clause (of law or treaty)	Complimentary Connect to PC to configure clock or read TF card data
5	OBD extenders	1	classifier for birds and certain animals, one of a pair, some utensils, vessels etc	Complimentary wiring For

1.6 Technical Support & Services

7 days no reason to return or exchange, 5 years free maintenance, lifelong maintenance and upgrade services. For technical support and purchasing information, please refer to https://www.cxcan.com/

Email:zhcxgd@163.com /

Technical support QQ：3659774625

2 device interface

2.1 Equipment Appearance

Fig. 1 **Front of the device**

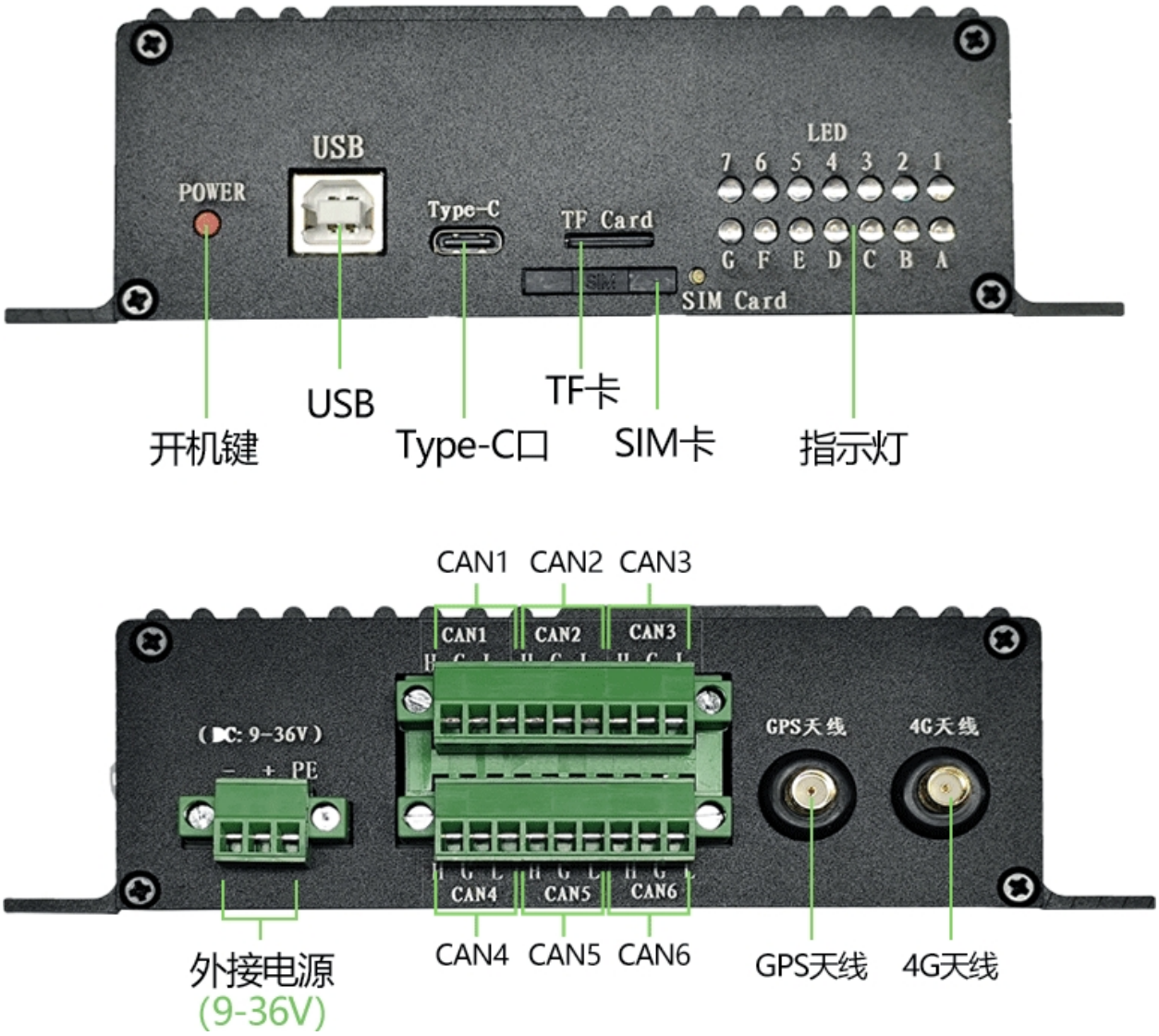


Fig. 2 **Side of the device**

2.2 interface definition

The CAN/CANFD-4G has total of 2 external interfaces, located on the front and rear panels.

2.2.1 front panel

switch, USB port, TYPE-C port, TF socket, SIM card holder and LED light set are provided.

switch: When battery powered, press and hold for 3 seconds to turn on the device; press and hold for another 3 seconds to turn off the device.

USB interface: can be via Beijing time configured (factory configured) PC / power supply / copy SD card data (CAN data)cannot be read in real time from portUSB .

Type-C: High-speed read/write TF card, read speed up to under interface90MB/sec . USB3.0 Power supply/charge/copy data.

TF card socket: Standard TF card slot.

SIM card holder: 4G traffic card.

: CAN/CANFD-4G provides with LED1~7/LEDA~G a total of 14 LEDs to indicate the operating status of the device, as defined in Table 1.

Table 1. Definition of Light SetsCAN/CANFD-4G **LED**

serial number	name (of a thing)	define
1	Power indicator	Indicates different colors according to the battery level as follows: 75% < battery level ≤100% Blue color is always on. Blue blinking when .50% < battery ≤ 75% 25% <power ≤50% Red color is always on. 0%<Power≤ 25% Red blinking when
2	CANFD1 Channel Indicator	With data, blue blinking; with error, red light always on; both data and error, red and blue alternate flashing
3	CANFD2 Channel Indicator	With data, blue blinking; with error, red light always on; both data and error, red and blue alternate flashing
4	CANFD3 Channel Indicator	With data, blue blinking; with error, red light always on; both data and error, red and blue alternate flashing
5	CANFD4 Channel Indicator	With data, blue blinking; with error, red light always on; both data and error, red and blue alternate flashing
6	CANFD5 Channel Indicator	With data, blue blinking; with error, red light always on; both data and error, red and blue alternate flashing
7	CANFD6 Channel Indicator	With data, blue blinking; with error, red light is always on; both data and error, red and blue alternate flashing
A	TF card indicator	TF card , red blinking; recognized not recognizedTF card, blue light; read/write TF, blue light color flicker
B	Relay Indicator	Blue color is always on when relay function is on; blue color flashes when there is data relay; relay function is unchecked then extinguish
C	Playback indicator	The blue color blinks during playback and goes out when playback is finished. If playback is selected, but there is no playback in the card, it will turn off.TF The TF TF card indicator will always be lit in red when you card put a file on the

		It's off. Lights are out.
G	SYS Indicator	Normal operation, blue color flashes slowly (light on for second and off 1 for second)1 ; dead, blue color is on or light is off
Description: press and LED1~LED8 blinks blue once press and hold when you key to turn on the power. hold the POWER LED1~LED8 blinks red once .when you the key to turn off the powerPOWER		

4G Logger Indicator Special Function Definitions			
functional sequence horn (wind instrument)	functionality	define	note
1	power switch	All blue lights when power on, all red lights when power off	
2	TF Card Return	Power on state double-click the button, the indicator light is all red, you can return the card; double-click again to set the reboot	For external TF a checkpost
3	TF card formatting	Power on state five click button, TF card indicator light red and blue alternately blinking waiting for formatting confirmation, long press to confirm, short press to cancel; formatting all red light, formatting end Beam device reboot	For external TF a checkpost
4	OTA process	OTA Upgrade process lights up in blue, upgrade success lights up in blue, upgrade failure All red lights.	
5	Low battery at power on	When the battery voltage is lower than the limit when long press the button to turn on the power, will be lit.1 red running light	
6	TF card error at power on mistakenly	TF card initialization error or file system error , will be lit.at power on2 red runners lantern	For external TF a checkpost
7	Configuration file too large	Checks for profile size exceeding limits at power up, 3 illuminatered running lights	
8	Configuration file error	Configuration file parsing error at boot time, 4 onred running lights	

2.2.2 rear panel

Table 2. CAN Logger Rear Panel Interface Definitions

serial number	name (of a thing)	define
1	-	Switching Power Supply Negative Input
2	+	Switching power supply positive input, +9V~ 35V.
3	PE	Shielded wire connector, not normally connected.
4	CAN1H	CANFD1 Channel CAN/CANFD Bus H Signal
5	CAN 1G	CANFD1 channel shielded line interface, if the communication line is shielded line can be connected to the shield, otherwise can be grounded or not connected
6	CAN 1L	CANFD1 Channel CAN/CANFD Bus L Signal
7	CAN 2H	CANFD2 Channel CAN/CANFD Bus H Signal
8	CAN 2G	CANFD2 channel shielded line interface, if the communication line is shielded line can be connected to the shield, otherwise can be grounded or not connected
9	CAN 2L	CANFD2 Channel CAN/CANFD Bus L Signal
10	CAN 3H	CANFD3 Channel CAN/CANFD Bus H Signal
11	CAN 3G	CANFD 3-channel shielded line interface, if the communication line is shielded line can be connected to the shield, otherwise can be grounded or not connected
12	CAN 3L	CANFD3 Channel CAN/CANFD Bus L Signal
13	CAN 4H	CANFD 4-channel CAN/CANFD bus H-signal
14	CAN 4G	CANFD 4-channel shielded line interface, if the communication line is shielded line can be connected to the shield, otherwise can be grounded or not connected
15	CAN 4L	CANFD4 Channel CAN/CANFD Bus L Signal
16	CAN 5H	CANFD5 Channel CAN/CANFD Bus H Signal
17	CAN 5G	CANFD5 channel shielded line interface, if the communication line is shielded line can be connected to the shield, otherwise can be grounded or not connected
18	CAN 5L	CANFD5 Channel CAN/CANFD Bus L Signal
19	CAN 6H	CANFD6 Channel CAN/CANFD Bus H Signal
20	CAN 6G	CANFD 6-channel shielded line interface, if the communication line is shielded line can be connected to the shield, otherwise can be grounded or not connected
21	CAN 6L	CANFD6 Channel CAN/CANFD Bus L Signal
22	GPS antenna	external antenna
23	4G Antenna	external antenna
Note: 1G, 2G, 3G, 4G, 5G, 6G are connected inside the device.		

3 Instructions for use

3.1 Power supply method

1 The device has three power supply modes: external DC power supply (9V~35V) , USB, and battery power.

2 When powered by or battery, the device provides recording function, playback function, relay function, 4G function, GPS external DC, USB function.

3 The device can provide is powered by TF card reader function and system time setting function .when the computer USB

4 The device automatically charges the battery when power is supplied. When chargingDC or USB , LED_D flashes blue, and when full, LED_D is always blue.

5 When the device is powered by battery, press and hold the button for , the device will turn on and 3 secondsthe 14 lamps will flash blue once at the same time; press and hold the button , the device will turn off and for 3 secondsthe 14 lamps will flash red once at the same time;

7 When the device is powered by DC power supply: 9~ 35V terminals are connected to the DC power supply, the device will power on automatically and 14 lamps will blink blue once at the same time; when disconnected, the device will power off and shut down automatically at and 14 lamps will blink red once at the same time;

After powering on the device, quickly double-click the power button, the 14 light will be red, the data recording will stop at this time, and the TF card can be safely pulled out and used to the middle of the processextract the TF data in . Insert again the TF card and double-click the power button, the device will restart and power on automatically. This function is mainly to avoid the at high speed TF format or data damage .that may be caused by card inserting and removing during the process of cardthe TF receiving CAN data and saving it to the TF

8 When the power is supplied:USB

Charger or 5V cell phone charger power supply: Plug in the USB cable, the device will be powered on and start charging, you need to press and hold the POWER key to turn on the ; devicekey, the device will turn off and enter the charging mode. After power on, unplug press and hold the POWER the USB cable, the device will be powered by the battery, you need to press and hold the POWER key to turn off the device.

Normal power on computer: Plug in the USB cable, the device will power on and start charging, the computer will recognize it as a USB flash drive, then you can read/write the TF card or configure the device clock. Press and hold the POWER key to turn on the device, it will automatically exit the USB flash disk mode; press and hold the POWER key to turn off the device and enter the disk mode. After power on, unplug charging/U the USB cable, the device will be powered by the battery, you need to press and hold the POWER key to turn off the device.

USB-B port: can power/charge/configure system time/read/write TF card.

Type-C port: can power/charge/read/write TF card. Read/write speed than is faster port.B

3.2 operating mode

This device 3 operating modes: Type-C mode, USB-B mode, and Normal mode.

1, Type-C mode, you can use the Type-C cable to read at high speedthe data in the card , TF USB3.0 ..Type-C cable, reading speed up to 90M/.

Seconds.

2, USB-B disk mode can be simulated as a USB flash disk device by recognized , convenient for PCTF file data operation; this mode, can be RTC system time calibration.

3, Normal mode can complete CAN/CANFD bus data recording, playback, relay function, 4G function, GPS function;

3 mode switching methods are as follows:

①When with the connecting the computer cable, enter the Type-C Type-C mode to read and write the TF card.

② When the battery is powered, press and hold the POWER button to turn on the power and enter the normal mode.

③ When powered by an external power supply, power up into normal mode;

④When the Type-C port/USB-B port is connected to the charger or cell phone charger for power supply, it will be charged automatically, long press the POWER key to enter the normal mode.

⑤ When the USB-B port is connected to the the computerUSB port of , it is automatically recognized as a USB flash disk, and you can read and write directlythe TF card ; at the same time, it will add a COM port, and you can configure the Beijing time through the software.

3.2.1 Type-C mode (read/write TF card data)

Connect the the device cableType-C port of to the the computer U port of . The computer will recognize it as a with the Type-C USB flash drive and display the contents of the card. copying TF LED_A blinks blue .whenTF card data

Type-C cables are divided into USB2.0 and USB3.0, and support both positive and negative insertion of ports. Ordinary Type-C Type-C charging cable is generally USB2.0, reading data is generally 40M/sec. With Type-C USB3.0 cable, the reading speed is up to 90M/sec.

Type-C can be used to read TF card data, power the device, or charge it.

3.2.2 USB-B mode (1. Configure Beijing time)(factory configured system time, no need to repeat configuration)

Plug in the under power off stateUSB cable to the USB-B port , the device enters USB flash disk mode. If you need to configure the Beijing time, **you need to install in advancethe provided ""USB Virtual Serial Port Driver"" driver** . If this driver is already installed, you can find the "USB Virtual Serial Port Driver" in ""My Computer - Management - Device and Ports. ""If this driver is installed, you see can as Figure the simulated serial port number information of the device shown in .3

Figure 3 Discovering the USB Virtual Serial Port

Then open [CANrecorder RTC Setting Tool], select the serial port number of the device and click "Open Device". After the device is successfully openedyou can click ""Get"" button to get the current Beijing time of the device. Click ""Set"" button to send the current computer time to the to devicecomplete the RTC time configuration. As shown in Figure 4 and Figure 5.

Figure 4 Connecting Devices

Figure 5 Configuring Device RTC Time

3.2.3 USB-B mode (2, read/write TF card data)

With the power off, plug in the USB cable to the USB-B and the unit enters USB flash drive mode. This mode simulates the device as a USB flash drive and is recognized by . This mode requires the insertion of the PCa TF card, if there is no TF inserted, the TF card indicator LED5 will flash red, after is recognized normally, the the USB PC prompts that new hardware is found and starts to install the driver automatically, as shown Figure 6.

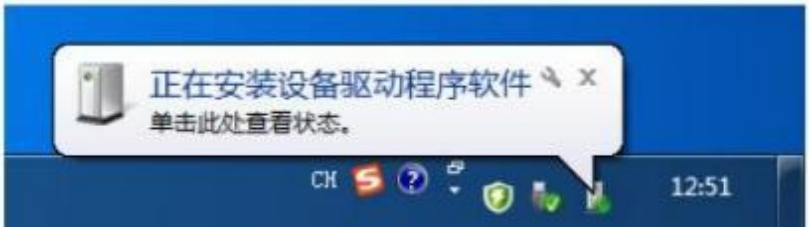


Figure 6 Device by found PC

When the USB configuration is successful, you can in see the disk as Figure PC shown in . At the same time in the 7"My Computer - Management - Device Manager" can the device information shown in .as Figure 8

Figure 7 Device Disk Name Found by PC

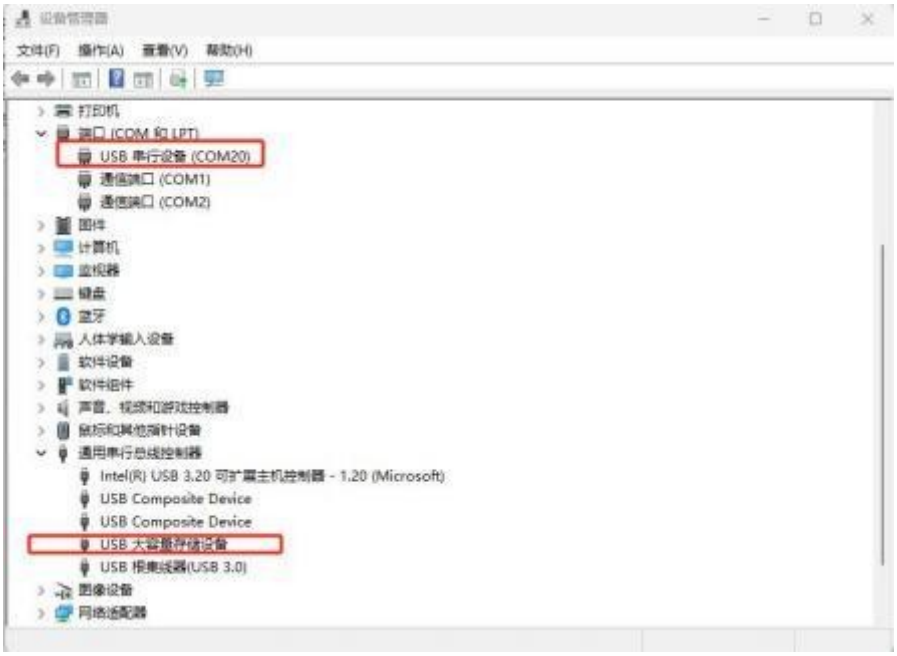
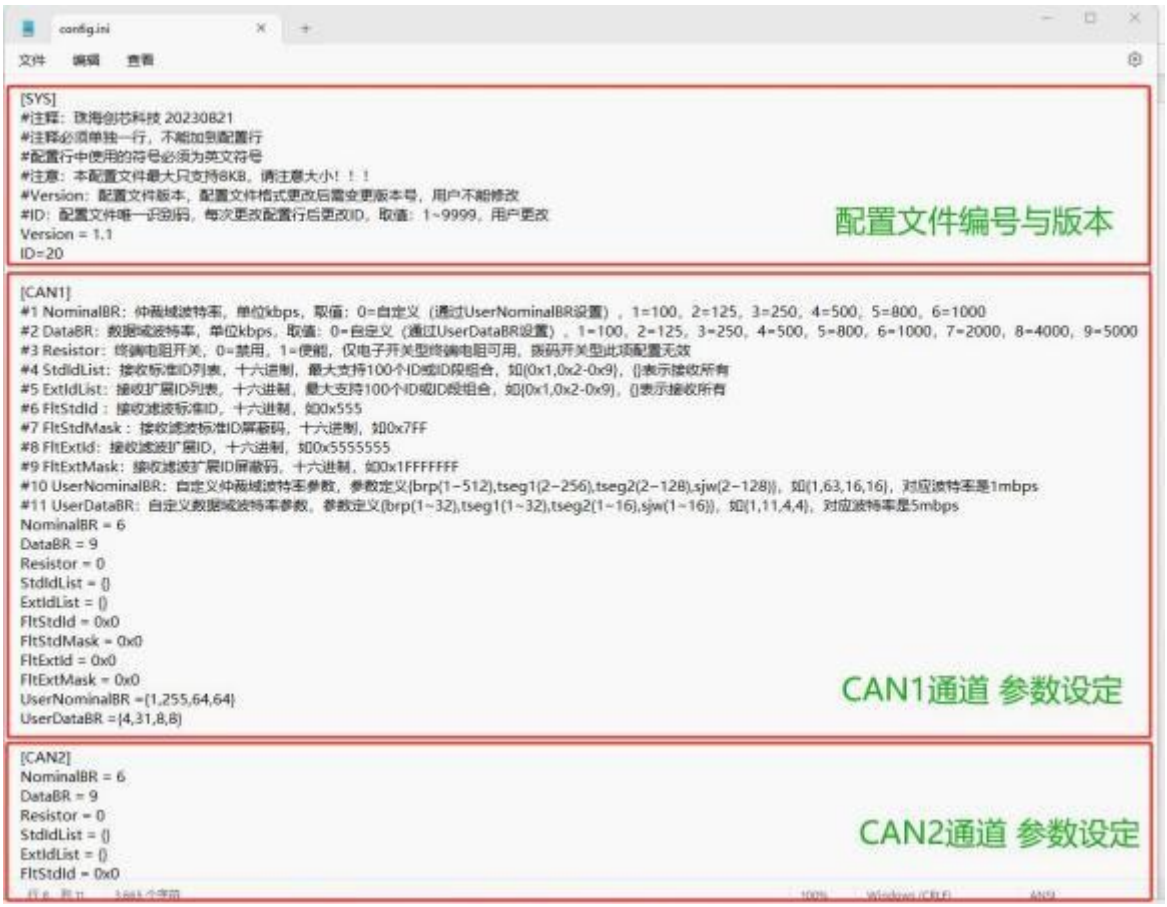
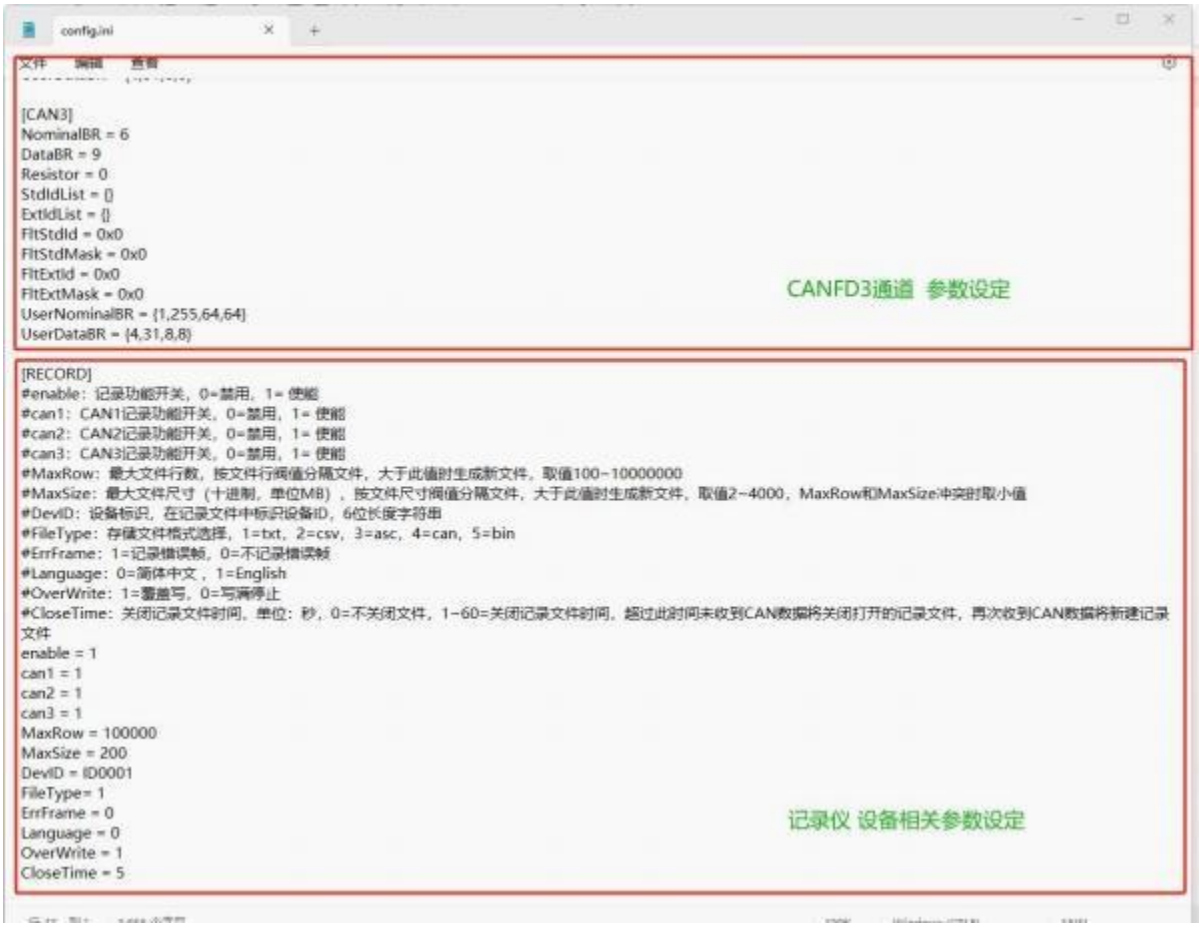


Figure 8 Device Recognized as USB Flash Drive Device/COM Port

3.2.4 Normal mode (CAN recording, relay, playback function, 4G function, GPS function)

Under power off state, external 12V DC directly enter into normal mode, USB, battery power, long press POWER key, the device enters into normal mode. This mode requires the insertion of a card, if there is no TF TF inserted, the TF card indicator will flash red. In this mode, the device provides recording, playback and relay functions. Normal mode requires reading configuration file . An example of the configuration file named in the card"config.ini" TF is shown .below in Figure 9


config.ini
文件 编辑 查看
[SYS]
#注释：珠海创芯科技 20230821
#注释必须单独一行，不能加到配置行
#配置行中使用的符号必须为英文符号
#注意：本配置文件最大只支持8KB，请注意大小！！！
#Version：配置文件版本，配置文件格式更改后需要更新本号，用户不能修改
#ID：配置文件唯一识别码，每次更改配置行后更改ID，取值：1~9999，用户更改
Version = 1.1
ID=20
配置文件编号与版本
[CAN1]
#1 NominalBR：仲裁域波特率，单位kbps，取值：0=自定义（通过UserNominalBR设置），1=100，2=125，3=250，4=500，5=800，6=1000
#2 DataBR：数据域波特率，单位kbps，取值：0=自定义（通过UserDataBR设置），1=100，2=125，3=250，4=500，5=800，6=1000，7=2000，8=4000，9=5000
#3 Resistor：终端电阻开关，0=禁用，1=使能，仅电子开关型终端电阻可用，拨码开关型此项配置无效
#4 StdIdList：接收标准ID列表，十六进制，最大支持100个ID或ID段组合，如{0x1,0x2-0x9}，{}表示接收所有
#5 ExtIdList：接收扩展ID列表，十六进制，最大支持100个ID或ID段组合，如{0x1,0x2-0x9}，{}表示接收所有
#6 FltStdId：接收滤波标准ID，十六进制，如0x555
#7 FltStdMask：接收滤波标准ID屏蔽码，十六进制，如0x7FF
#8 FltExtId：接收滤波扩展ID，十六进制，如0x5555555
#9 FltExtMask：接收滤波扩展ID屏蔽码，十六进制，如0x1FFFFFFF
#10 UserNominalBR：自定义仲裁域波特率参数，参数定义{brp(1~512),tseg1(2~256),tseg2(2~128),sjw(2~128)}，如{1,63,16,16}，对应波特率是1mbps
#11 UserDataBR：自定义数据域波特率参数，参数定义{brp(1~32),tseg1(1~32),tseg2(1~16),sjw(1~16)}，如{1,11,4,4}，对应波特率是5mbps
NominalBR = 6
DataBR = 9
Resistor = 0
StdIdList = {}
ExtIdList = {}
FltStdId = 0x0
FltStdMask = 0x0
FltExtId = 0x0
FltExtMask = 0x0
UserNominalBR ={1,255,64,64}
UserDataBR ={4,31,8,8}
CAN1通道 参数设定
[CAN2]
NominalBR = 6
DataBR = 9
Resistor = 0
StdIdList = {}
ExtIdList = {}
FltStdId = 0x0
CAN2通道 参数设定


config.ini
文件 编辑 查看
[CAN3]
NominalBR = 6
DataBR = 9
Resistor = 0
StdIdList = {}
ExtIdList = {}
FltStdId = 0x0
FltStdMask = 0x0
FltExtId = 0x0
FltExtMask = 0x0
UserNominalBR = {1,255,64,64}
UserDataBR = {4,31,8,8}
CANFD3通道 参数设定
[RECORD]
#enable：记录功能开关，0=禁用，1= 使能
#can1：CAN1记录功能开关，0=禁用，1= 使能
#can2：CAN2记录功能开关，0=禁用，1= 使能
#can3：CAN3记录功能开关，0=禁用，1= 使能
#MaxRow：最大文件行数，按文件行阀值分隔文件，大于此值时生成新文件，取值100~10000000
#MaxSize：最大文件尺寸（十进制，单位MB），按文件尺寸阀值分隔文件，大于此值时生成新文件，取值2~4000，MaxRow和MaxSize冲突时取小值
#DevID：设备标识，在记录文件中标识设备ID，6位长度字符串
#FileType：存储文件格式选择，1=txt，2=csv，3=asc，4=can，5=bin
#ErrFrame：1=记录错误帧，0=不记录错误帧
#Language：0=简体中文，1=English
#OverWrite：1=覆盖写，0=写满停止
#CloseTime：关闭记录文件时间，单位：秒，0=不关闭文件，1~60=关闭记录文件时间，超过此时间未收到CAN数据将关闭打开的记录文件，再次收到CAN数据将新建记录文件
enable = 1
can1 = 1
can2 = 1
can3 = 1
MaxRow = 100000
MaxSize = 200
DevID = ID0001
FileType= 1
ErrFrame = 0
Language = 0
OverWrite = 1
CloseTime = 5
记录仪 设备相关参数设定

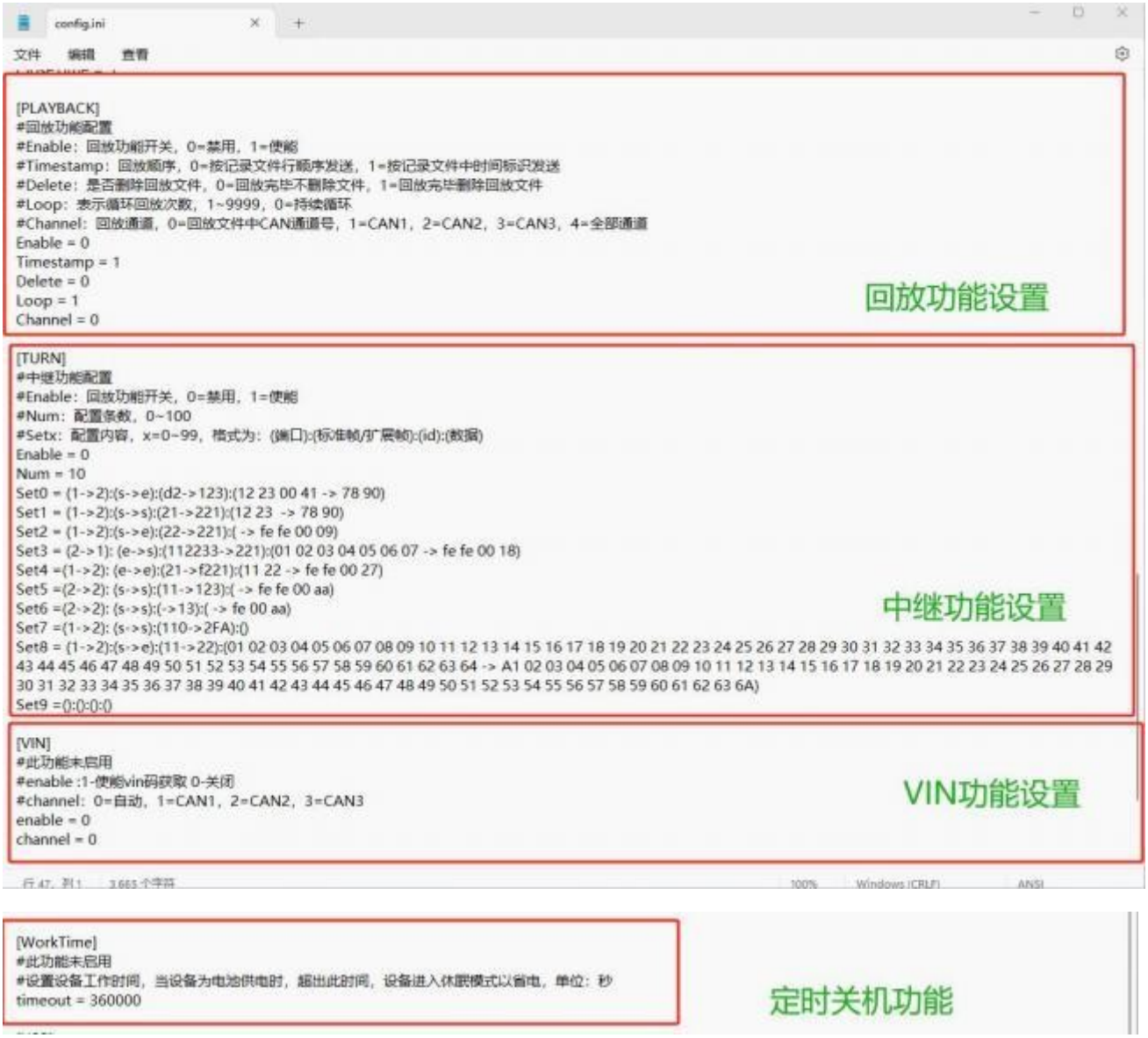


Figure 9 Example of Logger Profile InformationCAN

The file consists of as shown in the figure[SYS], [CAN1], [CAN2], [CAN3, [RECORD], [PLAYBACK], [TURN][, VIN], and [WorkTime] , Several parts. Note that lines beginning are comment lines and cannot be added after a configuration line.with "#" The configuration options in each section are described in detail in the comments.

The device only supports up to profiles ; going out of range will result in unpredictable errors.8KB

If the configuration file is corrupted, incorrectly formatted, or does not exist, the device uses the factory saved in the devicedefault file that is config.ini 's FLASH and is automatically exported to the TF card. The wrong configuration file will change the file name to config.err to ensure the device works properly.

The main configuration options and function descriptions of of are shown in the following table:the configuration file this device config.ini

Table 3. **Description of configuration file options**

order horn (wind instrument)	Configuration paragraphs	options (as in computer software settings)	clarification
1	[SYS]	Version	Configuration file version, configuration file format changes need to change the version number, the user can not be modified
		ID	Configuration file unique identifier, change after each change of configuration lineID , value: 1~9999. User Changes
2	[CAN1]/ [CAN2]/ [CAN3]	NominalBR	Baud rate of the arbitration domain in kbps, value: 0=Custom (via UserNominalBR) (Settings), 1=100, 2=125, 3=250, 4=500, 5=800, 6=1000
		DataBR	Baud rate of the data field in kbps, value: 0=Custom (set via UserDataBR). 1=100, 2=125, 3=250, 4=500, 5=800, 6=1000, 7=2000, 8=4000. 9=5000
		Resistor	Terminating resistor switch, 0=disable, 1=enable, only electronic switching type terminating resistor available, toggle This configuration is invalid for code switch type
		StdIdList	Receive standard a list of , in hexadecimal, up to IDs100 IDs or combinations of segments, such asID {0x1,0x2-0x9} , {} means receive all
		ExtIdList	Receive extended ID lists, in hexadecimal, up to 100 IDs or combinations of segments, such asID {0x1,0x2-0x9} , {} means receive all
		FltStdId	Receive filter standard ID, hexadecimal, e.g. 0x555
		FltStdMask	Receive filter standard ID mask code, hexadecimal, e.g. 0x7FF
		FltExtId	Receive filter extension ID in hexadecimal, e.g. 0x5555555
		FltExtMask	Receive filter extension ID mask code, hexadecimal, e.g. 0x1FFFFFFF
		UserNominalBR	Self Definition Definition Zhong 裁 domain 波 特 rate 参 数 , 参 数 定 义 {brp(1~512),tseg1(2~256),tseg2(2~128),sjw(2~128)}, e.g., {1,63, 16, 16}, which corresponds to a baud rate of 1Mbps.
		UserDataBR	Self-defining data field baud rate parameter, parameter definition {brp(1~32),tseg1(1~32),tseg2(1~16),sjw(1~ 16)} , e.g., {1, 11,4,4} , corresponds to the waves The special rate is 5Mbps.
3	[RECORD]	enable	Logging function switch, 0=disable, 1= enable
		Can1	CAN1 logging function switch, 0=disable, 1= enable
		Can2	CAN2 logging function switch, 0=disable, 1= enable
		Can3	CAN3 logging function switch, 0=disable, 1= enable
		MaxRow	Maximum file lines, separates files by the file line threshold, generates a new file if it is greater than this value. Value 100~ 10000000
		MaxSize	Maximum file size (decimal, unit MB), according to the file size threshold to separate files, greater than this value to generate a new file, take the value of 2~4000, MaxRow and MaxSize conflict take the value of small value
		DevID	Device ID, identifies the device in the log fileID , 6-bit length string
		FileType	Storage file format selection, 1=txt, 2=csv, 3=asc, 4=can, 5=bin
		ErrFrame	1=record error frames, 0=don't record error frames
		Language	0=Simplified Chinese, 1=English

			CAN data will be newly logged
4	[PLAYBACK]	enable	Playback function switch, 0=disable, 1=enable
		timestamp	Playback order, 0=sent in log file line order, 1=sent by timestamp in log file see off
		isDelete	Whether to delete the playback file, 0 = playback complete without deleting the file, 1 = playback complete to delete the playback file
		Loop	Indicates the number of loop playback times, 1~9999 , 0=continuous loop
		Channel	playback channel, 0 = CAN channel number , in playback file1 = CAN1 , 2 = CAN2 , 3 = CAN3. 4 = all channels
5	[TURN]	enable	Playback function switch, 0=disable, 1=enable
		Num	Configuration number, 0~100
		Setx	Configuration content, x=0~99 , format:(port):(standard frame/extended frame):(id):(data)
6	[VIN]	enable	Whether to enable the car VIN code acquisition:= 1 enable; =0 disable
		channel	0=Auto, 1=CAN1 , 2=CAN2 , 3=CAN3
7	[WorkTime]	timeout	Set the device operating time, when the device is battery-powered, beyond which the device enters the Sleep mode to save power, in seconds

3.2.4.1 recording function

In use, users can according to the specific situation by using the in the the configuration filenumber different devices option , which will be reflected in the file name and the first line of the file content to distinguish the data. This number will be reflected in the file name and the first line of the file content, so that it is easy to distinguish the data.DevID [RECORD] section of DevID number range:ID0001~ID9999.

Users can through the in the configuration file according to the specific situationset the file split size option . That is, the device will judge the size of the generated data file during the recording process, when the file is larger than [RECORD] segment MaxSize the value set by, a new file will be generated. MaxSizeThe unit of isMaxSize MB, which is expressed in decimal, the minimum value is 2MB, the maximum value is 4000MB, and the default value is 200MB. It is not recommended to set the MaxSize too small, if it is too small, it will too oftencreate new files , which affects the performance; if it is too big, it will lead to a long loading time of the computer to open the file.

The user can by means of in the configuration fileconfigure the mask filtering of the frames of the channel : where note: CAN1 the [CAN1] segment the IDs are right-aligned!

FltStdId : Receive filter standard ID, hexadecimal, e.g. 0x555

FltStdMask : receive filter standard ID mask code, hexadecimal, e.g. 0x7FF FltExtId : receive filter extension ID, hexadecimal, e.g. 0x5555555 FltExtMask : receive filter extension ID mask code, hexadecimal, e.g. 0x1FFFFFFF

In the configuration, a the bit 1 for corresponding to the ID of the Mask means that the must be matchedcorresponding bit of , and a the ID 0 means that it does not matter.

For example, if you need to configure to receive only standard frames with , then ID 0x100FltStdId = 0x0000100 and FltStdMask = 0x00000fff.

For example, if you need to receive an extended frame with, then ID 0x020df201FltExtId = 0x020df201 , when FltExtMask is set to 0xffffffffff FltExtMask is set to 0x0000ffff (only care about this the lower of 16 bits , the rest of the bits are not cared about), the received frame)IDID of the extended frame is 0xXXXXf201 (the ID can be any one of (ID can be any one of 0x0000f201~0x1ffff201).0x0000f201~0x1ffff201.

The user can via the in the configuration fileconfigure the intelligent filtering of the frames of the channel : whereCAN1 [CAN1] segment StdIdList: Receive standard ID list, hexadecimal, supports up to 100 IDs or combinations of segments, e.g., ID {0x1,0x2-0x9} , {} means receive all

ExtIdList: receive extended ID list, hexadecimal, supports up to 100 IDs or ID segment combinations, e.g., {0x1,0x2-0x9}, {} means receiving.

possess

The 2nd and 3rd CAN filtering configuration [CAN2] [CAN3] is the same as 1st one.

The data file format recorded by this device supports : five formats. Take txt, csv, asc, bin and cantxt format for example:

a. filename

The file name is like "2020_07_06_201912_ID0001(94196).txt", where 94196 is the last of the code5 digits . If VIN does not support reading, or the user does not choose to enable VIN access function, there is no VIN code, resulting in a file name such as "2020_07_06_201912_ID0001.txt ". . 2020_07_06_201912 is the Beijing time, which means that on July 6, 2020 20:19:12 seconds,2020_07_06_201912_ID0001.txt ". 2020_07_06_201912 is the Beijing time, which means July 6, 2020 20,:19:12 seconds.

b. Contents of the document

Figure 10CAN Logger File Contents

The contents of the format files are shown above. Among them, the serial number range is txt format and csv 0000000~9999999; the CAN channel corresponds to panel CAN

The system time is real-time Beijing time; the data content is in .

3.2.4.2 relay function

If the device selects the relay function, the in the configuration file configuration of thesegment will take effect. [TURN] LED6 is always lit in blue color; when there is data relay, the blue color flashes. The relay configuration diagram of this device is as follows:

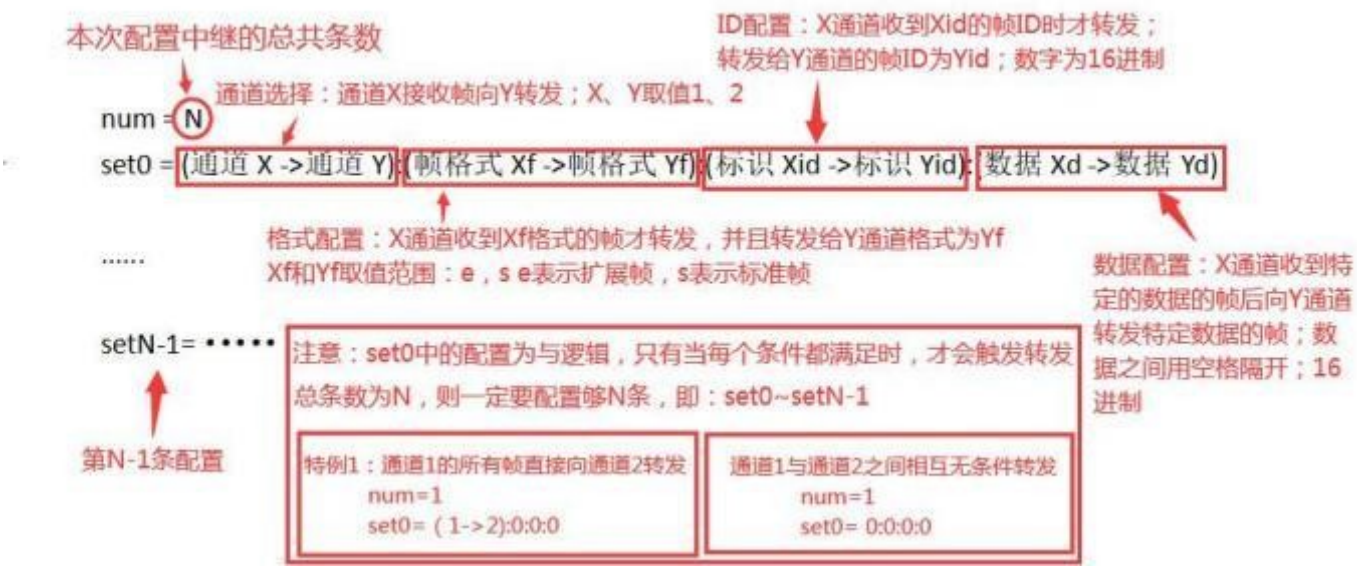


Figure 11 Diagram of relay function configuration

Let the relay configuration for a profile be as follows:

[TURN]

Relay function configuration

#The configuration uses hexadecimal

#num: number of in this configuration items(max. 99)

Format:(port):(standard frame/extended frame):(id):(data) , port is required, others are optional; no fill in means no change in content:

num= 7

set0= (1->2):(s->e):(d2->123):(12 23 00 41 -> 78 90)

set1= (1->2):(s->s):(21->221):(12 23 -> 78 90)

set2= (1->2):(s->e):(22->221):(-> fe fe 00 09)

set3 =(2->1): (e->s):(112233->221):(01 02 03 04 05 06 07 -> fe fe 00 18)

set4 =(1->2): (e->e):(21->f221):(11 22 -> fe fe 00 27)

set5 =(2->2): (s->s):(11->123):(-> fe fe 00 aa)

set6 =(2->2): (s->s):(->13):(-> fe 00 aa)

#set7 =(1->2): (s->s):(110->2FA):()

#set8 =(1->2): ():():():()

Among them, num = 7 means that are configured this time7 relay trigger conditions , which are in the order of set0, set1, set2, set3, set4, set5 ,set6 first one: set0 = (1->2):(s->e):(d2->123):(12 23 00 41 -> 78 90) means that: CAN1 port to Forwarding port, forwarding barCAN2 CAN1 port receives a standard frame with ID 0xd2 and data 0x12 0x23 0x00 0x41, to it forwards an portextended frame with ID 0x123 and data 0x78 0x90 CAN2 .

Clause : 2set1 = (1->2):(s->s):(21->221):(12 23 - > 78 90) means: CAN1 port forwards to CAN2 port, the condition of forwarding is: CAN1 port receives a standard frame with standard ID ID 0x21 and data and data 0x12 0x221 0x78 0x230x90 , then it forwards to a frame with port. When CAN1 port receives a standard frame with it forwards a standard frame with CAN2 ID ID 0x21 and 0x221 and data data 0x12 0x23, 0x78 0x90 to CAN2 port.

Clause : 3set2 = (1->2):(s->e):(22->221):(-> fe fe 00 09) means: CAN1 port forwards to CAN2 port, the condition of forwarding is: when CAN1 port receives a standard frame with ID 0x22 0xfe 0xfe 0x00 0x09 (data is arbitrary)data , then it forwards to an extended frame with and port. ID 0x221 CAN2 0x221, data 0xfe 0xfe 0x00 0x09.

Clause : 4set3 = (2->1): (e->s):(112233->221):(01 02 03 04 05 06 07 -> fe fe 00 18) Indicates that: CAN2 port to CAN1 The forwarding condition is: the CAN2 port receives an extended frame with ID 0x112233 and data 0x01 0x02 0x03 0x04 0x05 0x06 0x07, to it forwards a standard frame with portID 0x221 and data 0xfe 0xfe 0x00 0x18 CAN1 .

Clause : 5set4 = (1->2): (e->e):(21->f221):(11 22 -> fe fe 00 27) means: CAN1 port to forwards port, and CAN2 the forwarding condition is: CAN1 port receives an extended frame with with ID ID 0x21 0xf221 and data and data 0x11 0xfe 0x220xfe 0x00 0x27. , it forwards an extended frame to CAN2 port The with forwarding condition is: when CAN1 port receives an extended frame with it forwards an extended frame to CAN2 port ID ID 0x21 and 0xf221 and data data 0x11 0x22, 0xfe 0xfe 0x00 0x27.

Clause : 6set5= (2->2): (s->s):(11->123):(-> fe fe 00 aa) Indicates: CAN2 port to forwards port, the condition of forwarding is: CAN2 when CAN2 port receives a standard frame and the ID ID is is 0x11 0x123 and 0xfe 0xfe 0x00 0xaa. (the data is arbitrary)data is , then it forwards to a standard frame port, whose the CAN2 ID is 0x123 and data is 0xfe 0xfe 0x00 0xaa.

Clause : 7set6= (2->2): (s->s):(->13):(-> fe 00 aa) Indicates: CAN2 port to forwards port, the forwarding condition is: when CAN2 CAN2 port receives a standard frame (ID is arbitrary, data is arbitrary), then it forwards to data is a standard frame port, whose CAN2 ID is 0x13, 0xfe 0x00 0xaa. The data is 0xfe 0x00 0xaa.

Explanation 1: When configured, the input method is English half-width input.

Explanation 2: It should be noted that when you need to configure N relay forwarding conditions, num=N, the specific entries should be from set0,set1..... increment to in ordersetN-1 . If you do not follow this rule, the conditions of this configuration may fail!

Explanation 3: If you need to configure port unconditional forwarding from , then 1 to port 2num = 1, set0 =(1->2): ():():():() is sufficient.

If port 1, 2

unconditional forwarding between each other, then num=1, set0=():():():()

Explanation 4: The logging function can be enabled when the relay function is selected.

Explanation 5: If you want to configure unconditional relay (no rewriting, direct forwarding), you only need to select the channel to be relayed, e.g., the channel is directly forwarded to the CAN1 CAN2 channel according to the following configuration:

num= 1

set0 =(1->2): ():():():()

3.2.4.3 playback function

This device can realize the function of data playback. The configuration of the playback function can be seen in aboveFigure 9 of . The playback function only supports device record 3.2.4 TXT format and CSV format . After the playback function is enabled, the device will search for in order when it is powered on. (the last three digits are the playback file number, in the formatthe data files (the last three digits are the number of the playback file, in the range of 000~499) named "in the playback000.txt" and "playback000.csv" TF the range is), and then the file when it is found000~499send contents from the configuration port . If not found, the TF card indicator LED7 is always red.

When both the record/relay function and the playback function are turned on, the device prioritizes the playback function and enters the

function only when the file content is played back.record/repeat

Relay function. During playback, indicator LED7 flashes blue; when playback is complete, LED7 is off.

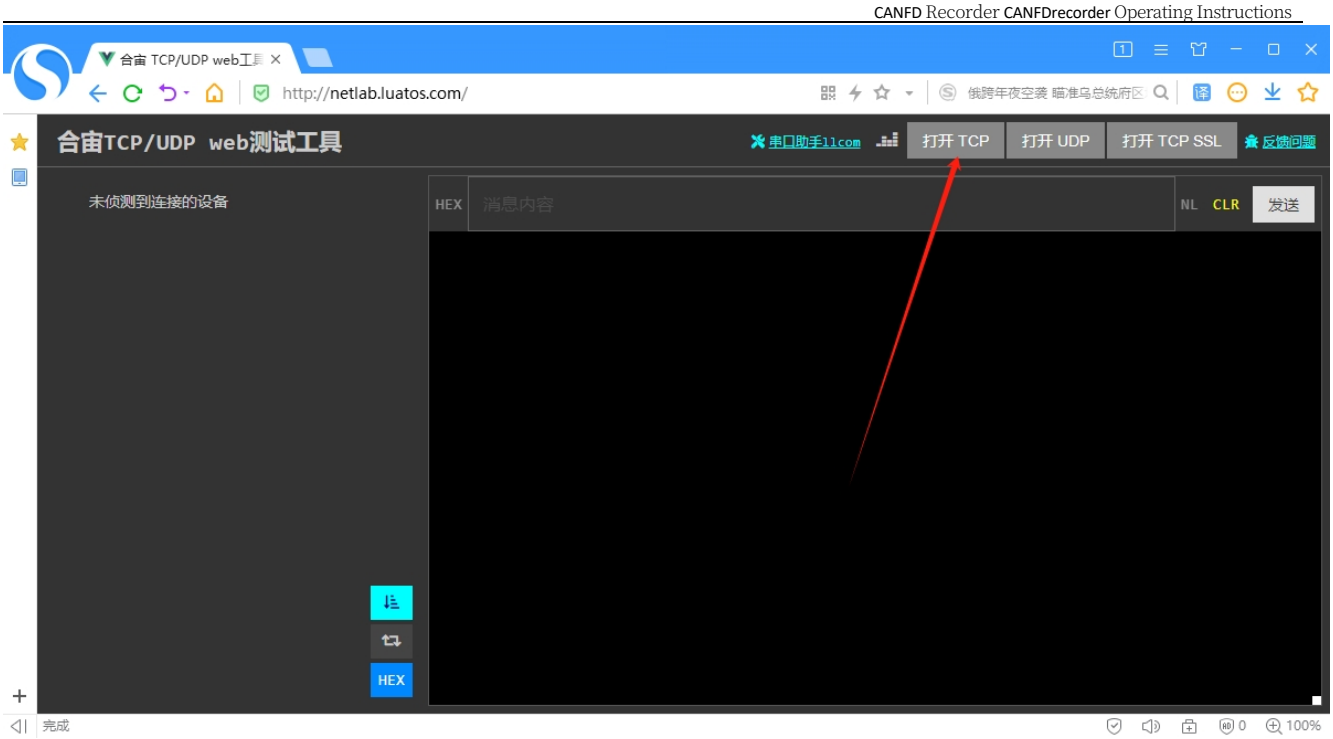
The content of the file to be played back is in the same format as the file recorded on the device (TXT format or CSV format), see this chapter for detailssubsection "3.2.4.1 File content" .

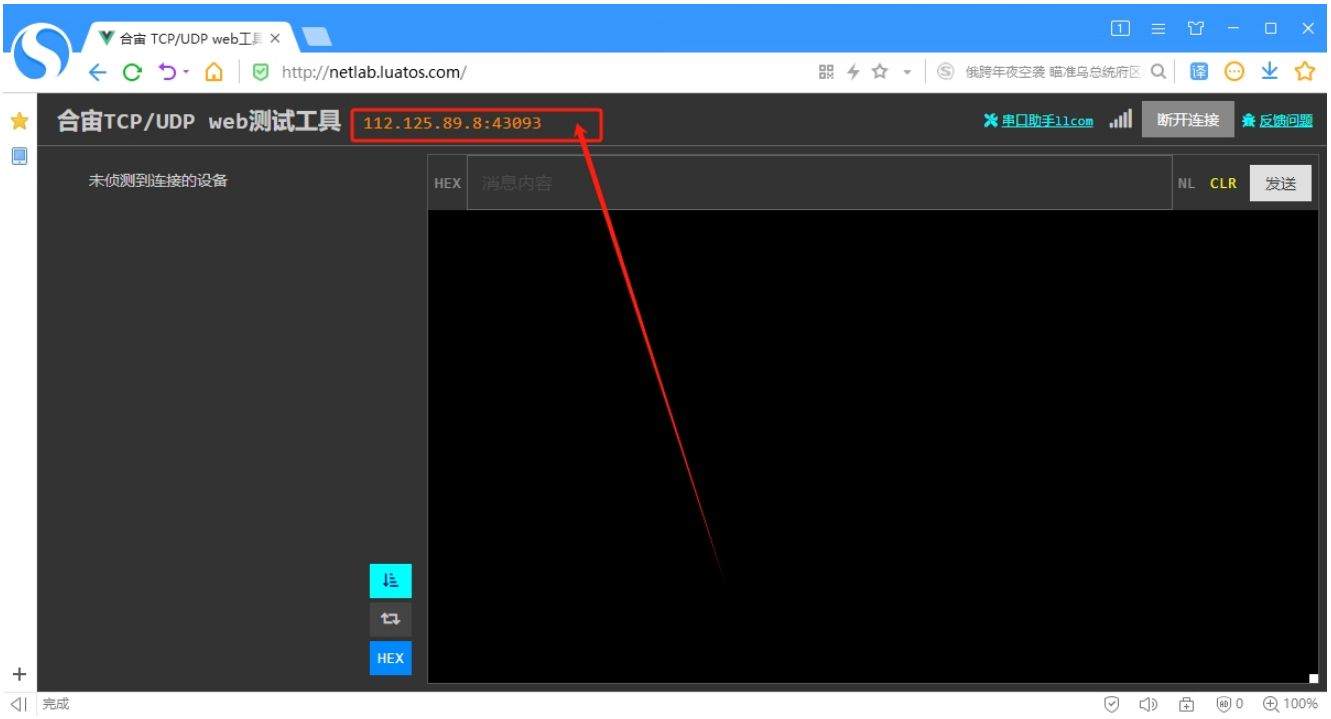
3.2.4.4 4G remote transmission function

This device can realize the number 4G remote transmission function. The product has built-in 4G module and 4G antenna, when SIM Card is placed with available 4G traffic card (cell phone card/IoT card/traffic card), after reboot, wait for the LED_E light to be always on blue, the 4G is in the linked state.

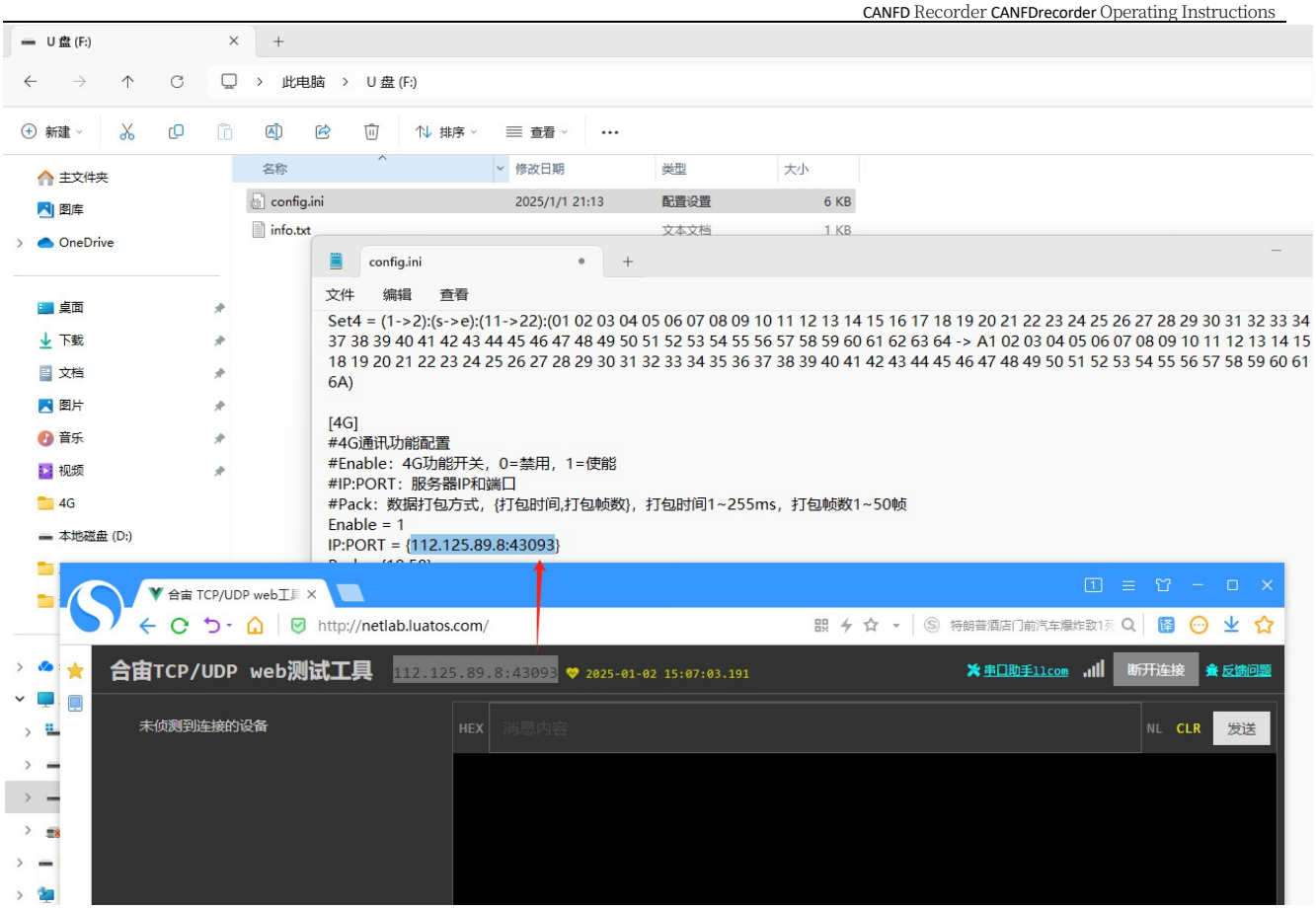
Demo:

Here with the **Hopu TCP/UDP web test tool to** test it, open the URL: http://netlab.luatos.com/ 1. Open TCP, an IP address and port will appear.





2. Copy the port data into 4G the configuration file of the device.



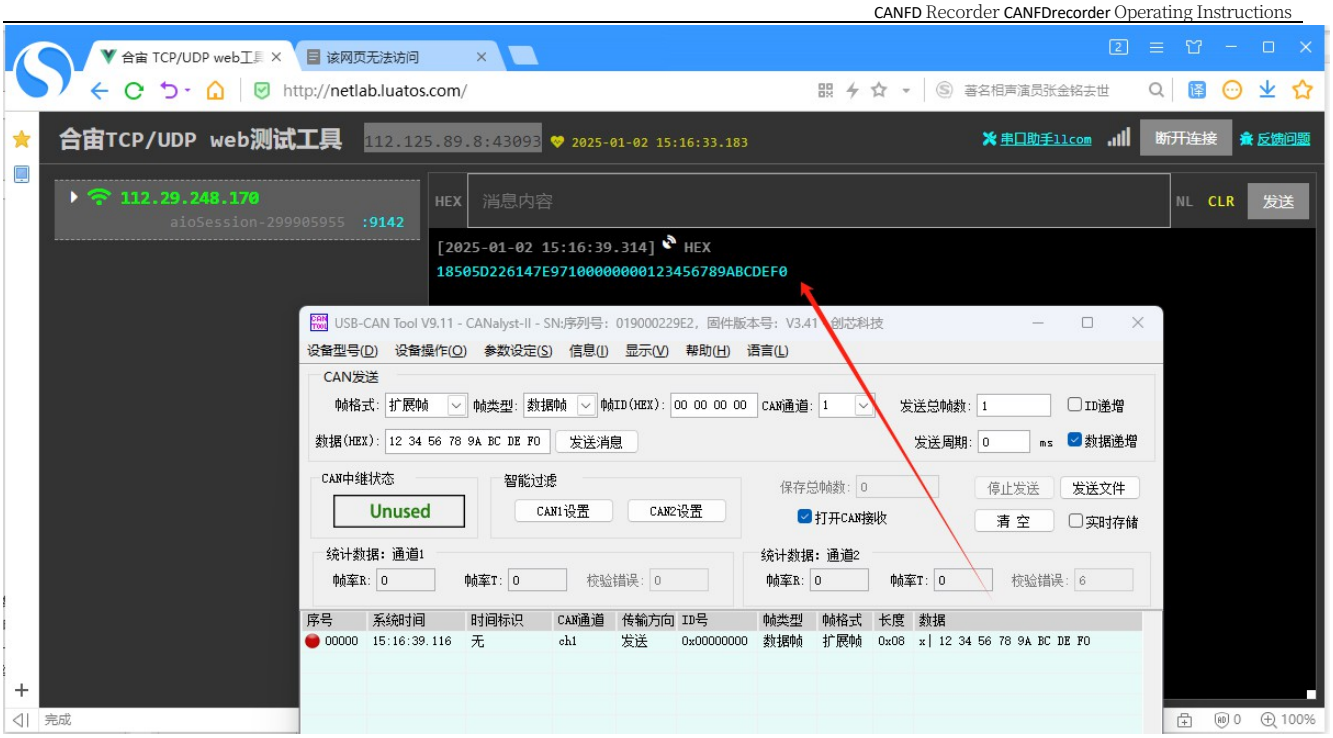
[4G]

#4G Communication Feature Configuration
#Enable: 4G function switch, 0=disable, 1=enable
#IP:PORT: server IP and port
#Pack: data packing method, {packing time,packing frame number}, packing time 1~255ms, packing frame number 1~50 frames Enable 1 =

IP:PORT= {112.125.89.8:43093}

Pack= {10,50}

3、Save the configuration file, reboot, after a few seconds, LED_E red/blue alternately blinking, 1 within minute, becomes blue light always on, indicating that the link is successful.



At this point, through the after sending a frame of data channel , you can see that the remote end receives a synchronously in real timeto analyzerthe CAN1 of the device CAN/CANFD-4G CAN CAN message .

A frame of frame attributes (first 8 bytes), frame ID (2 or 4 bytes), and frame data (0 to 64 bytes, determined by the frame length in the frame attributes).consists

3.2.4.5 GPS positioning function

[GPS]

GPS positioning function function configuration

#Enable: GPS function switch, 0=disable, 1=enable Enable 0

=

After the configuration file starts the function, the LED_F lights up. Subsequently, the function can be used to get information about the location of the device.

3.3 Program Upgrade

The device via can be upgraded card as follows: TF Step:

Turn off the device and insert 1the TF card.

Step : Plug in the 2USB cable, wait for the recorder to be by recognized as USB flash drive , then the upgrade file PCcopy to app.bin TF card. (The factory has already updated to the latest firmware, if there is any firmware update, the technology will contact you and provide the corresponding upgrade package and upgrade file.)

Step : Unplug 3the USB cable.

Step : Switch on and off the recorder once to upgrade. Plug in the USB cable again, the device will be recognized by PC as a USB flash drive, and 4two files " . After the upgrade is completed, you can delete the update result files.named "app.old, be generated in the flash driveUpdateResult.txt Will USB

3.4 SD card formatting function

Press the key POWER to enter the formatting confirmation wait for strikes, 5 consecutive SD card indicator light red and blue blinking, long press to confirm the formatting, all the lights light red and shutdown, short press or timeout 10 seconds to cancel the formatting.