GW2112

V1.0 |

tosunai.com

1288 9

4849 14-17

“ ”

CAN(FD)

CAN

CAN CAN CAN FD

Flexible Data-rate CAN CAN FD

CAN FD CAN

CAN CAN FD

CAN

CAN CAN

CAN

CAN

CAN

CAN(FD) CAN(FD) — GW2112

CAN(FD)

GW2112

-

  CAN/CANFD CAN

-

  CAN

-

  ID CAN

-

  CAN CAN FD

  CAN FD CAN FD 64 CAN

-

- ...

1. 4
1.1 4
1.2 4
2.GW2112 5
2.1 5
2.2 6
2.3 6
2.4 7
2.5 7
2.6 8
2.7 9
2.8 LED 10
2.9 11
3. 12
3.1 12
3.2 12
3.3 13
3.4 14
3.5 GW2112 15
3.6 19
4. 39

1.

1.1

1.2

2.GW2112

2.1

GW2112 CAN(FD)

CAN(FD) CAN CANFD

GW2112 CAN FD CAN1(CAN2) CAN(FD) CAN

GW2112

GW2112

2.2

- ✓ CAN DC2500V
- ✓ CAN 125Kbps—1Mbps
- ✓ CANFD 125Kbps—8Mbps
- ✓ 120
- ✓ CAN/CANFD
- ✓ CAN/CANFD
- ✓ CAN/CANFD
- ✓
- ✓
- ✓

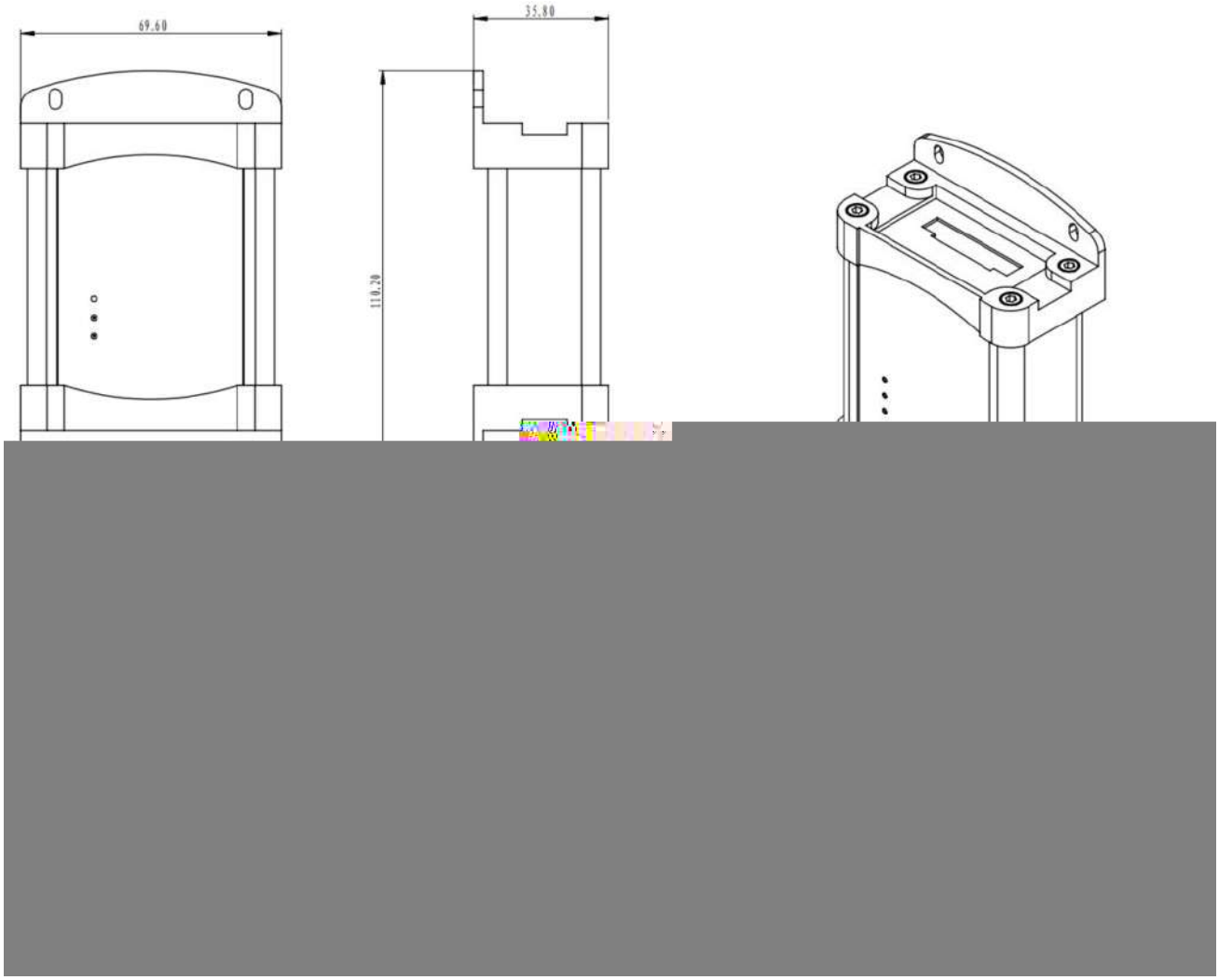
2.3

	2 * CANFD
PC	USB2.0
	Windows
	TSMaster
CAN	CAN2.0A B ISO11898-1 125Kbps-1Mbps
CANFD	ISO ISO CAN FD 125Kbps-8Mbps
	120
	20000
	< 0.5ms

2.4

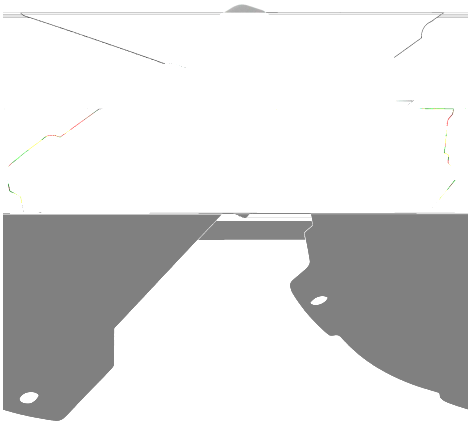
	USB	CAN	--	5	--	V
	DC	CAN	9	12	36	V
	USB	CAN	--	0.16	--	A
	DC	CAN	--	0.06	--	A
	DC	CAN	--	1	--	W
CAN		CANH CAHL	-58	--	+58	V
		1mA	2500	--	--	VDC

2.5



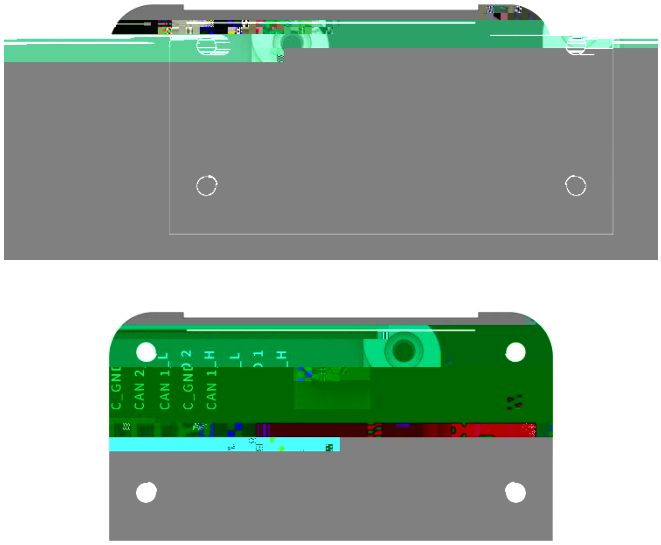
2.6

✓ GW2112



✓ USB

2.7



- USB2.0
- DC
- 6PIN

6PIN		
CANFD 1/2	PIN1	CAN2_L
	PIN2	C_GND2
	PIN3	CAN2_H
	PIN4	CAN1_L
	PIN5	C_GND1
	PIN6	CAN1_H

2.8 LED

Config	
CANFD 1	CANFD 1
CANFD 2	CANFD 2

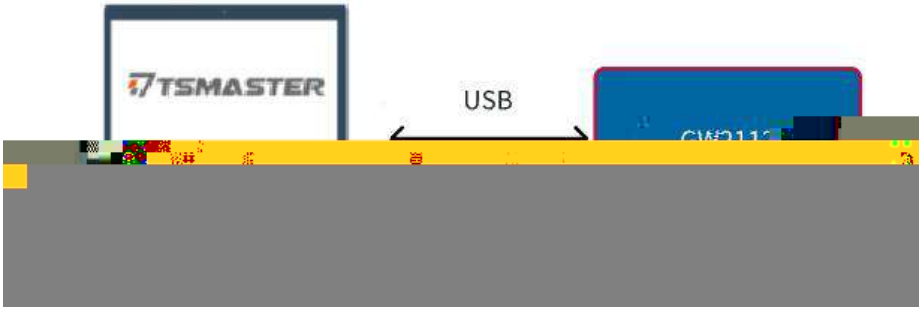
Config	
CANFD 1	CAN FD 1
CANFD 2	CAN FD 2

2.9

3.

3.1

◆



USB PC Config

TSMaster

◆

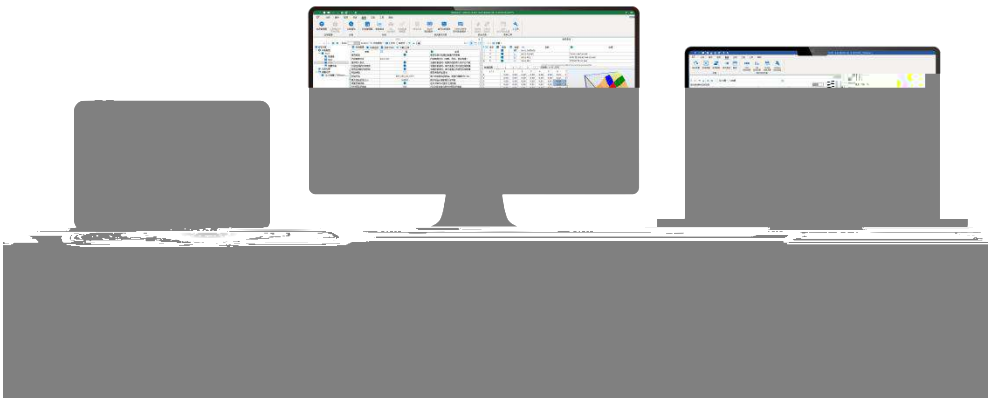
CAN

3.2

TOSUN

Windows7/8/10/11

3.3



TSMaster

UDS CCP/XCP ECU

I/O Matlab Simulink CarSim

ECU HIL

TSMaster ECU C Python TSMaster

TSMaster

TSMaster Vector Kvaser PEAK IXXAT,

AI DI DO

TSMaster

PV/DV

3.4

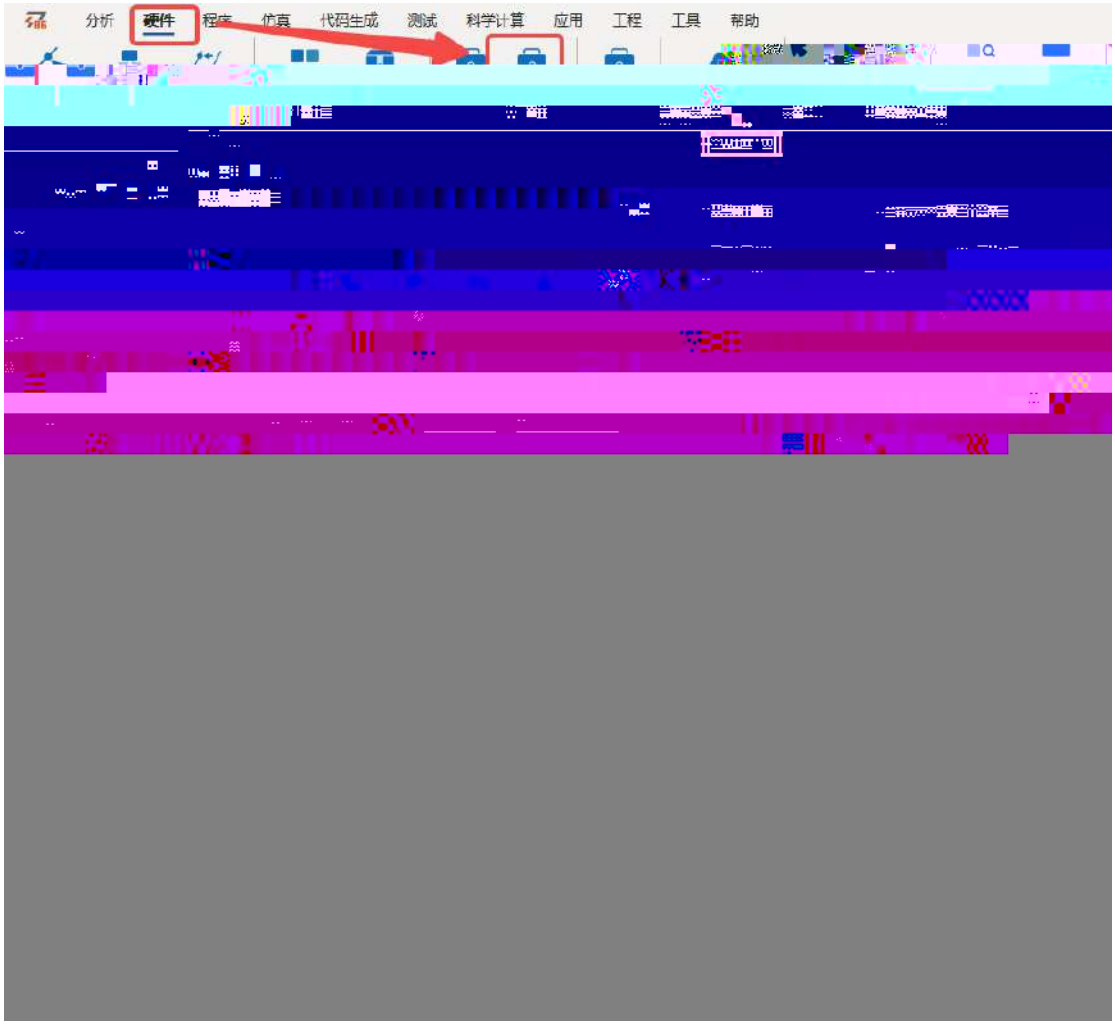
TSMaster

http://download.tosun.tech/TOSUNSoftware/TSMaster_Setup_beta.7z

PC

3.5 GW2112

TSMaster TSMaster GW2112



◆

json

json json

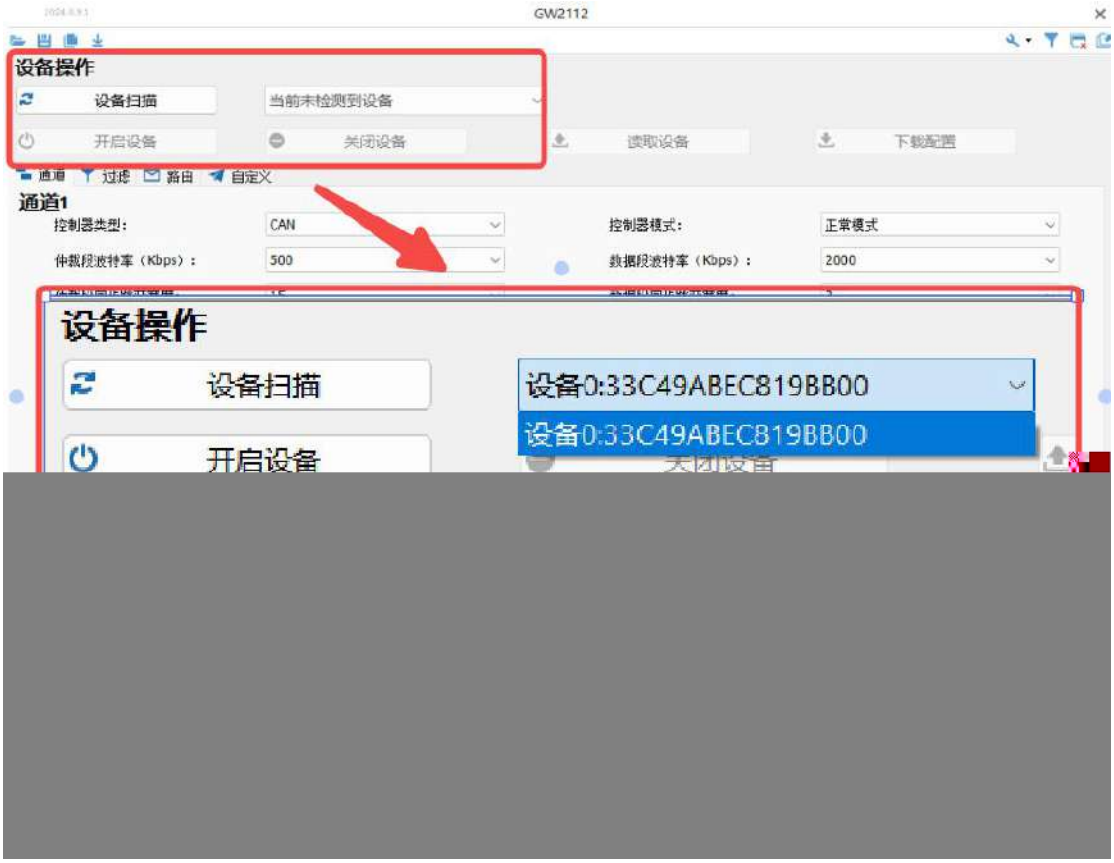
BIN bin

GW2112

◆

“

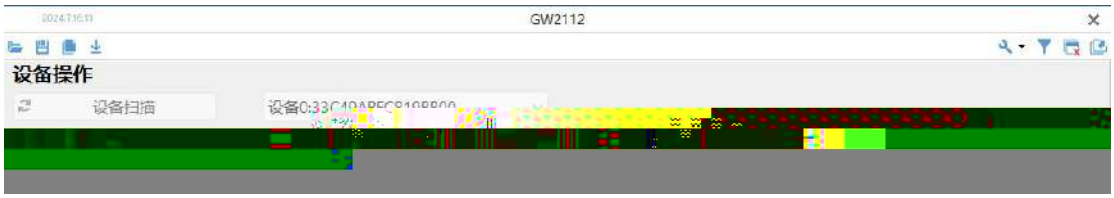
” “ ”


GW2112
设备操作
设备扫描
当前未检测到设备
开启设备
关闭设备
读取设备
下载配置
通道
过滤
路由
自定义
通道1
控制器类型：
CAN
控制器模式：
正常模式
仲裁段波特率（Kbps）：
500
数据段波特率（Kbps）：
2000
设备操作
设备扫描
设备0:33C49ABEC819BB00
设备0:33C49ABEC819BB00
开启设备

◆

“ ”

“ ”


GW2112
设备操作
设备扫描

◆

CAN

CAN (CAN FD)

GW2112

3.6

GW2112 USB

3.6.1

“3.5 GW2112 ”

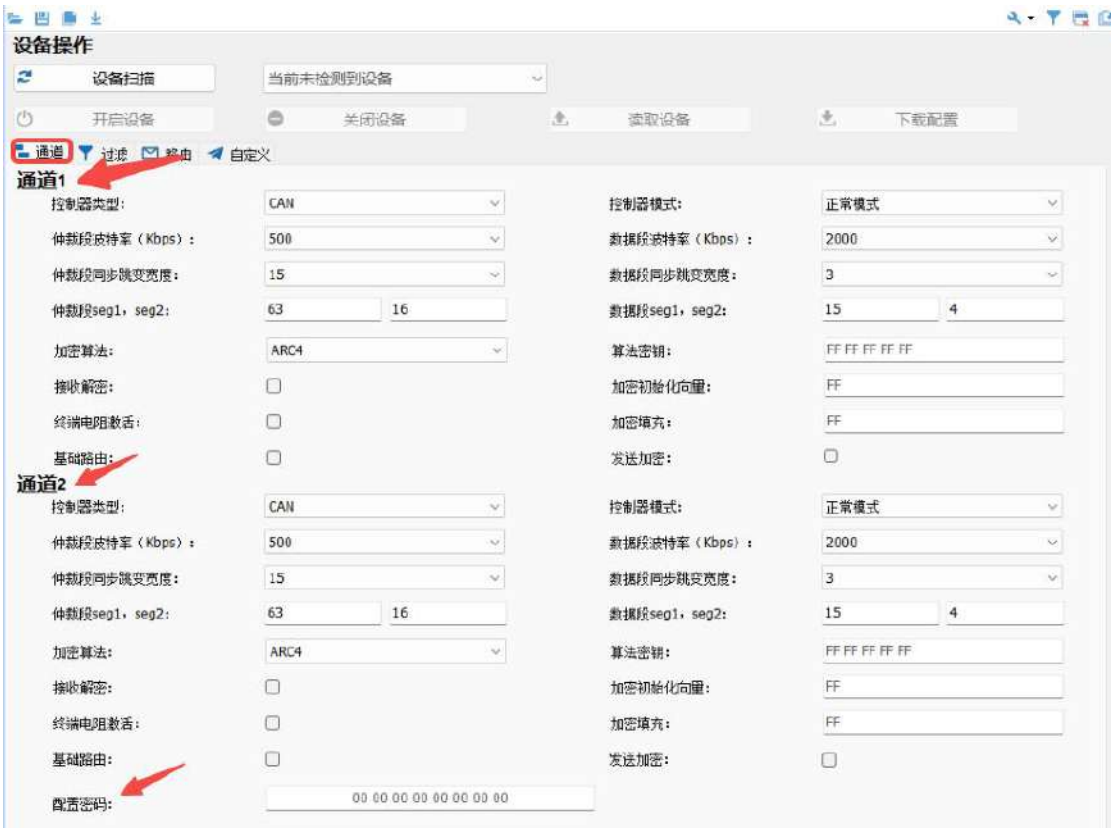
3.6.2

“3.5 GW2112 ”

3.6.3

CAN/CAN FD 1

2

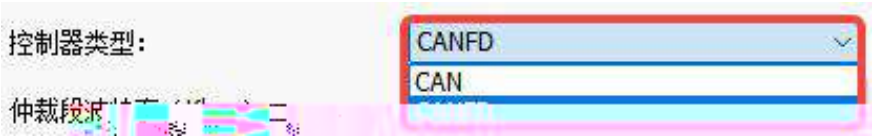


◆

CAN CANFD

CAN CANFD CAN

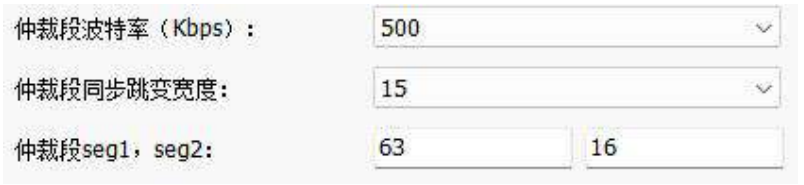
CAN FD CAN CAN FD



◆

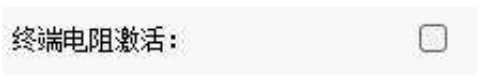
◆

seg

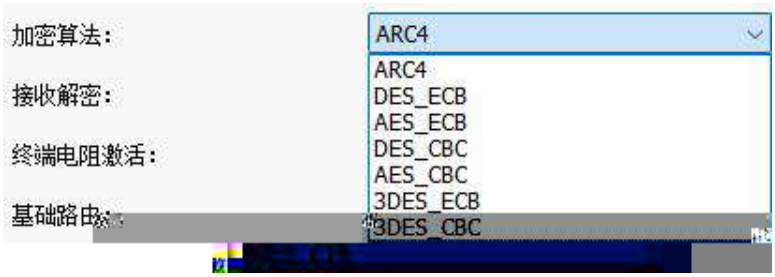


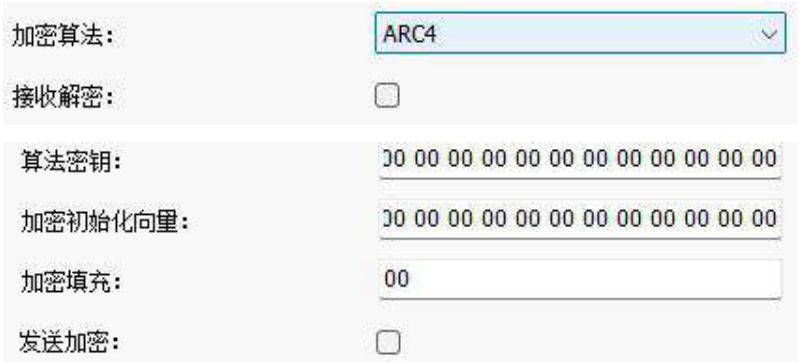
◆

120Ω

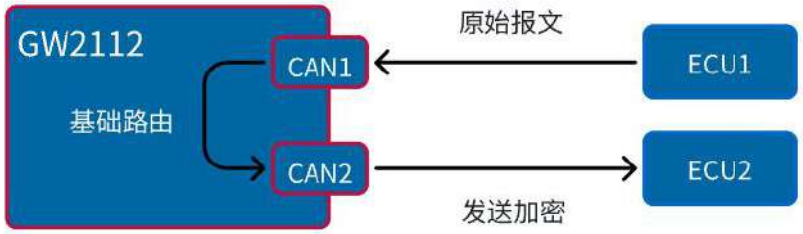


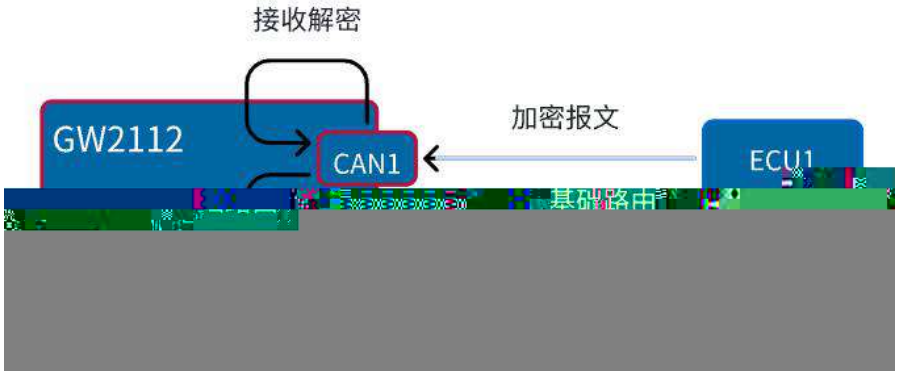
◆





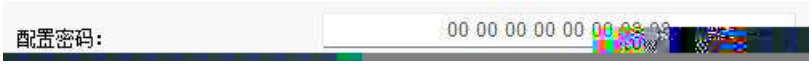
ARC4	
DES_ECB	16
AES_ECB	8
DES_CBC	16
AES_CBC	8
3DES_ECB	16
3DES_CBC	16
AES_CTR	8





◆

8



3.6.4

ID

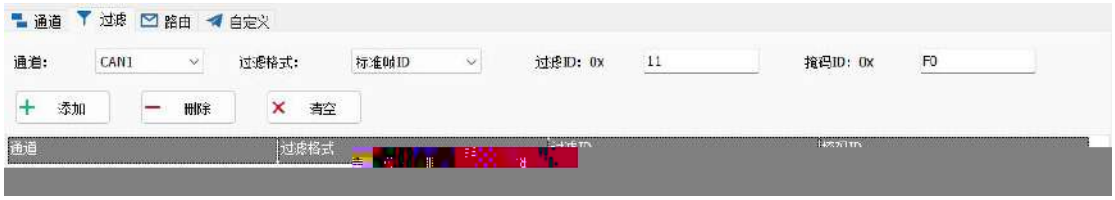
ID

CAN1

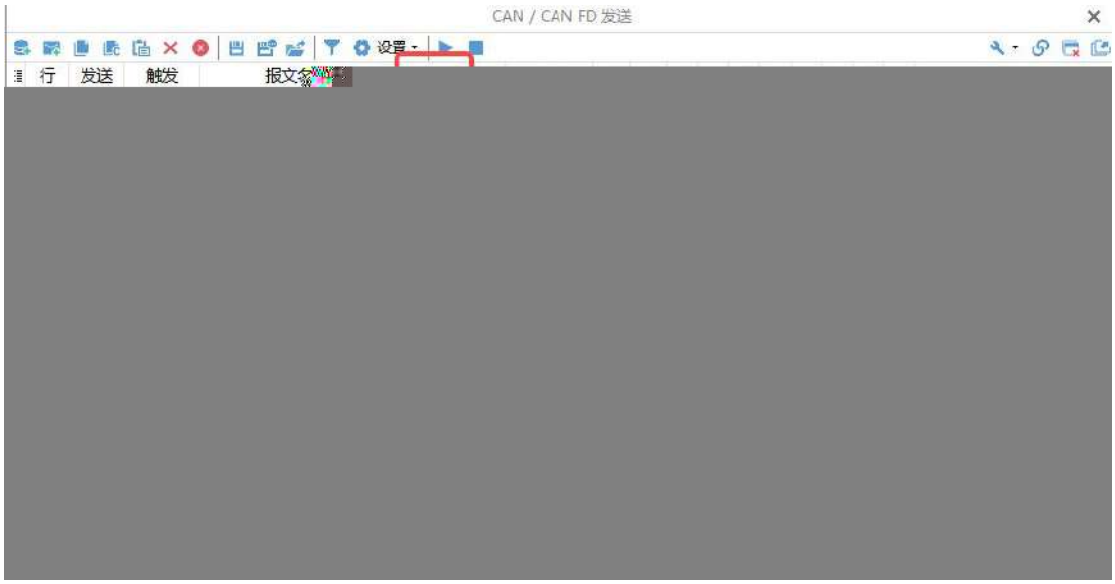
ID 0x1 ID 0x7FF ID 0x1

◆

CAN1 ID ID 0x11 ID 0xF0

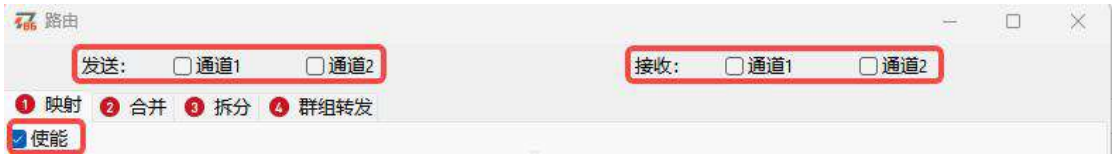


TSMaster CAN1 ID 0x123 0x011 0x010 0x0F0 0x11 0x10 GW2112 ID 0x11 0x11 ID (0x11 & 0xF0 = 0x10)



3.6.5

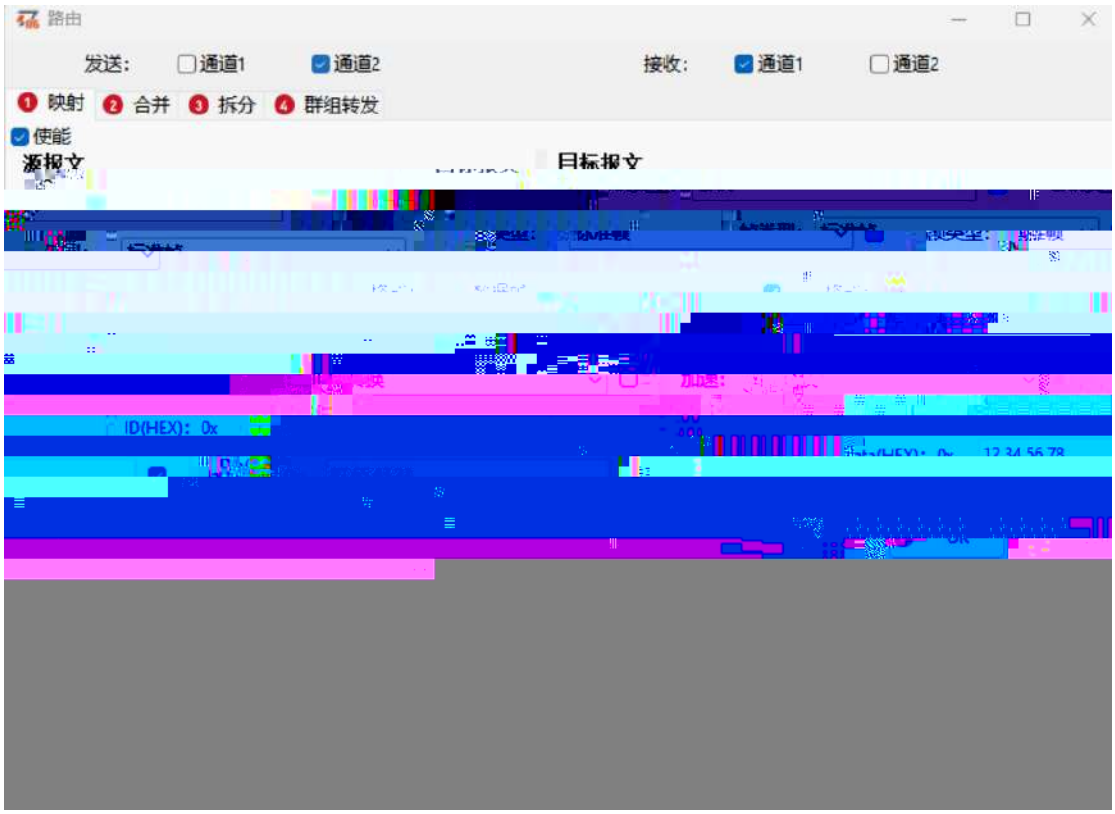
“ ”



◆

“ ” BRS CAN “ ”

➢



ID 0x123 0x12345678 GW2112

ID 0x111 0x87654321

◆

➢

GW2112

“ ”

ms

➢

“ ” ID ID

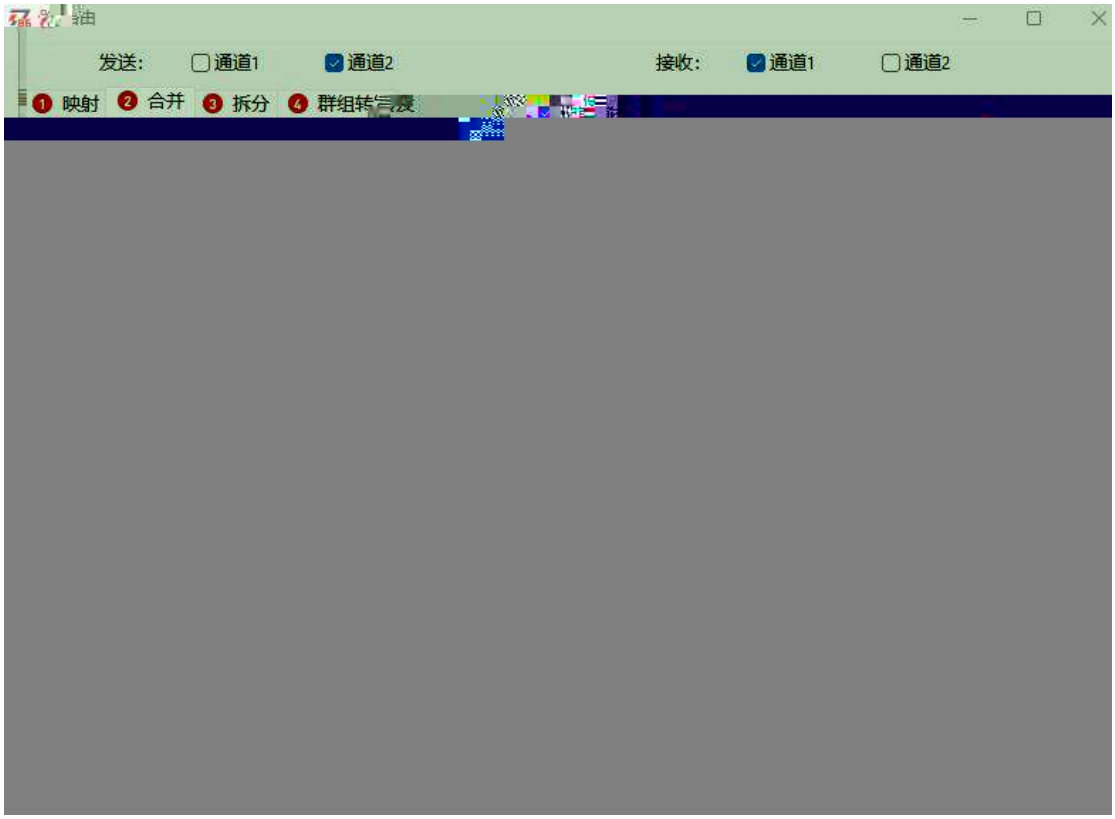
GW2112

GW2112

ID “ ”

“ ”

“ ”



- 32

32

bit

Motorola Intel

bit

*Scale

Offset

HEX HEX HEX

bit

hex bit

- 64

32 bit

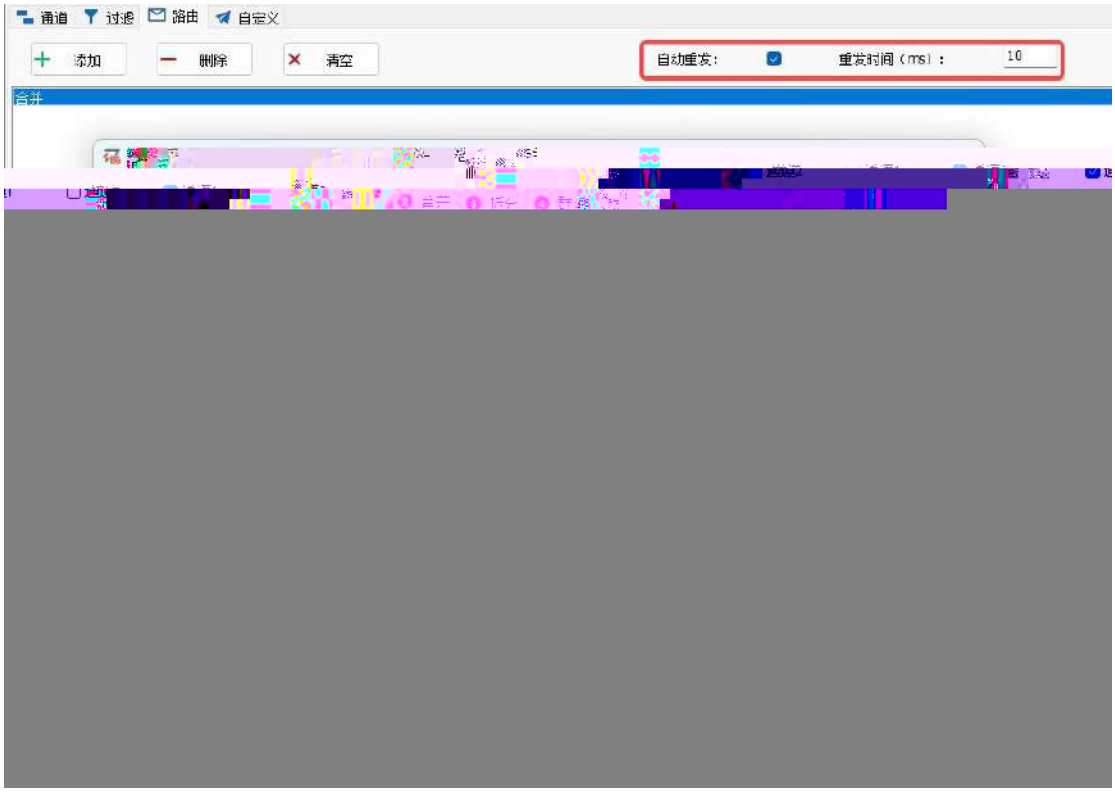
32bit 64bit

-

➢

ID 0x111 0x123 “ ” ID 0x23，

10ms



ID 0x111

目标起始字节	长度	源起始字节
1	1	1

ID 0x123

目标起始字节	长度	源起始字节
3	1	3

ID 0x111 ID 0x123 0x123

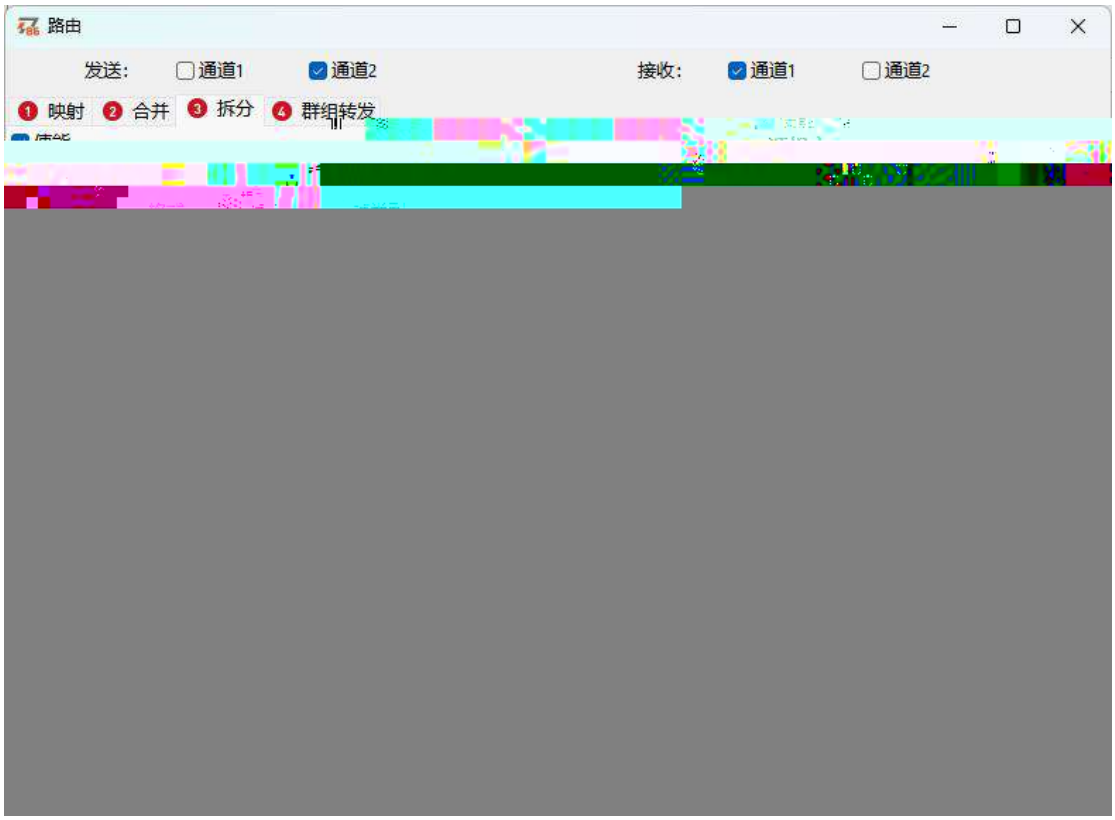
ID 0x23 GW2112 ID

0x23 ID

0 10ms

◆

“ ”

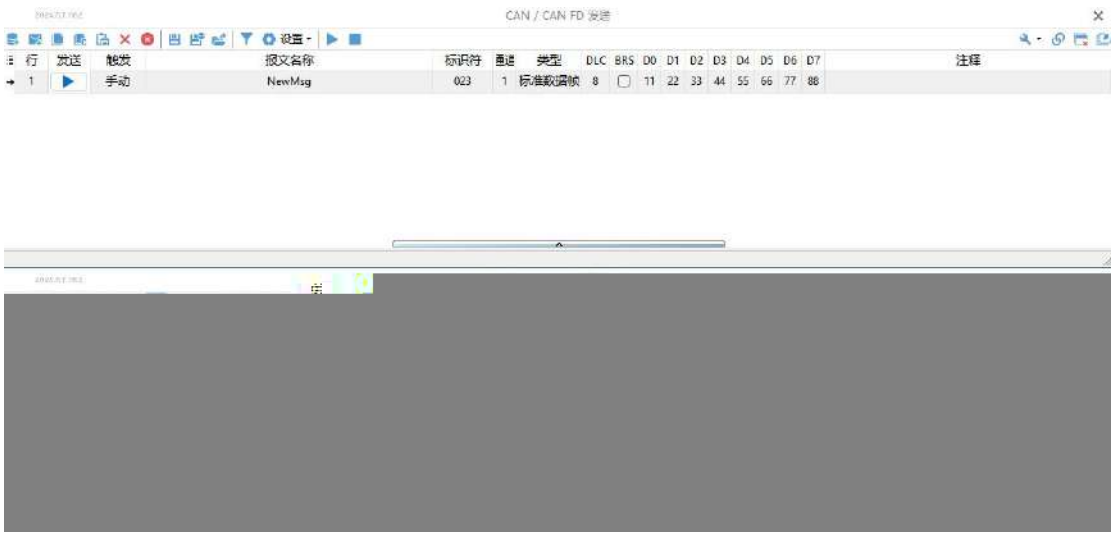


➢

ID 0x23 ID 0x111 0x123 1 3

1 1 3

GW2112 ID 0x23



◆

ID

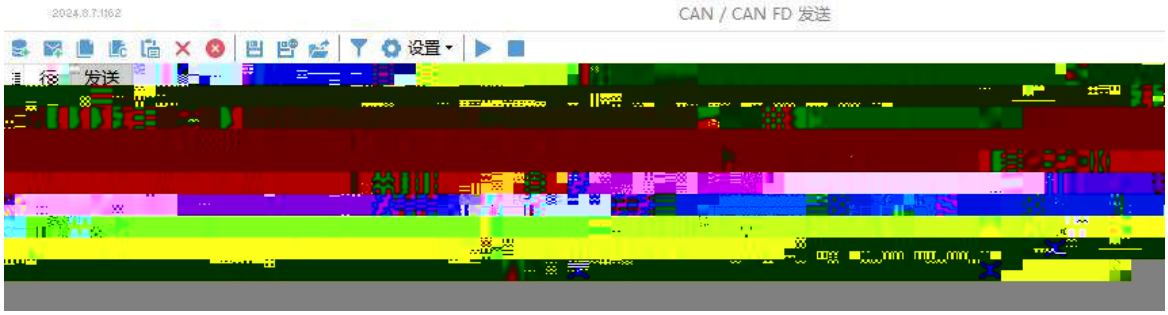
ID 1 ID 8 ID 4

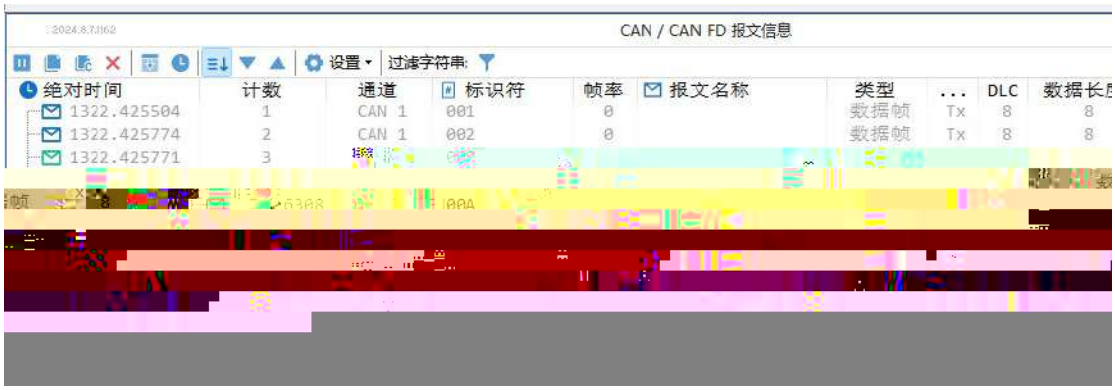
TSMaster 6

6 ID 4

ID (ID) 4+1 GW2112 ID 8

ID 6





3.6.6

◆

CAN “ CAN ” CAN

“ ” “ ”(

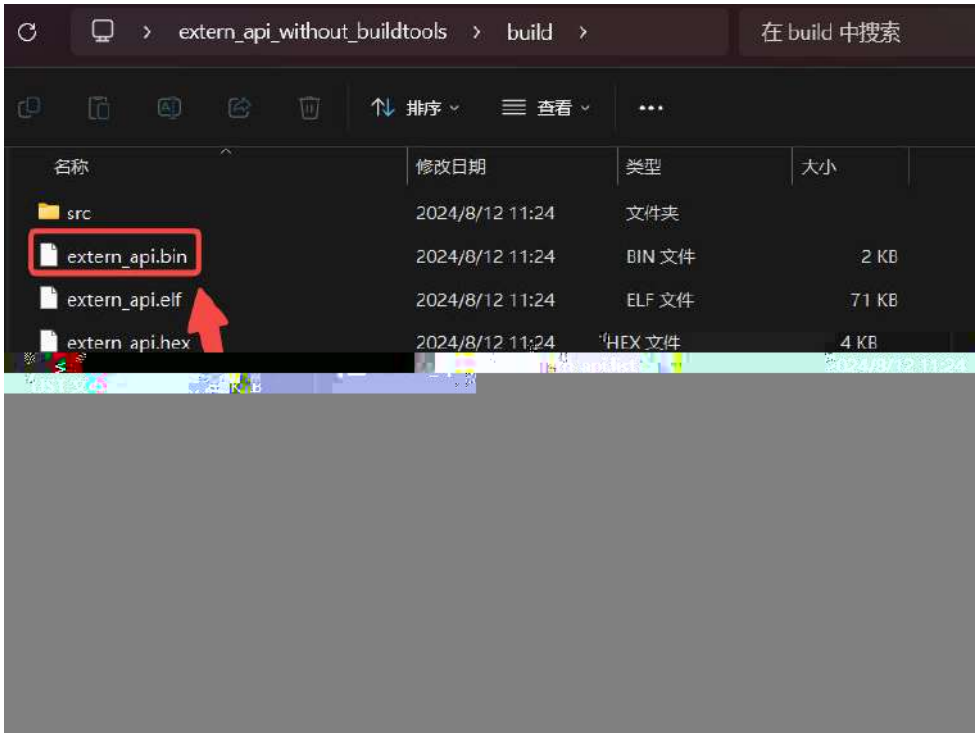
ms)

◆

GW2112 bin

“build” “extern_api_build.bat” /

bin bin



TSMaster GW2112 bin

bin bin

```
typedef union {
    Can_Receive_Event Receive_Can;
    Timer_Irq_Event Irq_Timer;
    Start_Irq_Event On_Start;
} Event_Argument;
```

Argument:

CAN Receive_Can

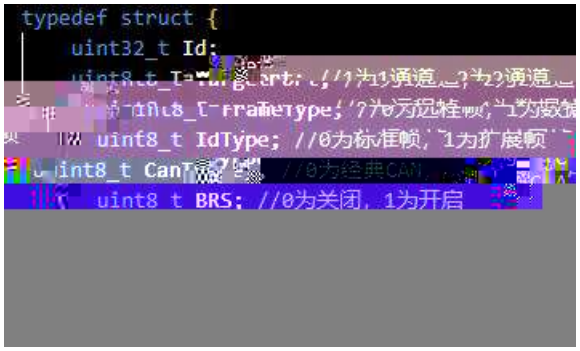
```
//触发事件，触发原因，操作外设的接口，指令需不需要向上层汇报，用户的空间
typedef struct {
    uint32_t Id;
    uint8_t SourcePort; //来自哪个通道 0为1通道，1为2通道
    uint8_t FrameType; //0为远程帧，1为数据帧
    uint8_t IdType; //0为标准帧，1为扩展帧
    uint8_t CanType; //0为经典CAN，1为FDCAN
    uint8_t BRS; //0为关闭，1为开启
    uint8_t DataLength;
    uint8_t Free[2];
    uint8_t Data[64];
} Can_Receive_Event;
```

Irq_Timer:

```
typedef struct {
```

- Action_p

Can_Transmit: SendCan



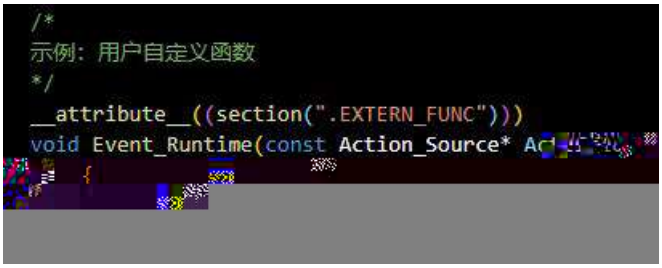
SendCan， Can_Transmit

user_array

user_array

user_array

➢



“ ”

```
Transmit_CanTypedef TxCAN = {0};
uint32_t Counter = 0;
```

TxCAN Counter

```
if (Event_p->Event_Source == ON_START) {
    TxCAN.Id = 0x1CCAB21;
    TxCAN.FrameType = 1;
    TxCAN.IdType = 1;
    TxCAN.CanType = 1;
```

2 Id 0x1CCAB21 CANFD

8 2~9

CAN_RECEIVE

```
else if (Event_p->Event_Source == CAN_RECEIVE) {        //接收报文事件
    if (Event_p->Argument.Receive_Can.SourcePort == 0x00) {
```

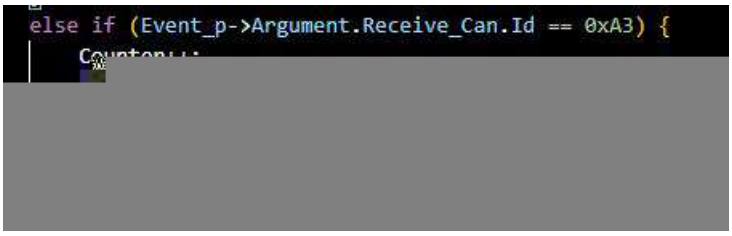
1

```
if (Event_p->Argument.Receive_Can.Id == 0xA1) {
    Action_p->user_array[4] = (Event_p->Argument.Receive_Can.Id >> 24) & 0xFF;
    Action_p->user_array[5] = (Event_p->Argument.Receive_Can.Id >> 16) & 0xFF;
    Action_p->user_array[6] = (Event_p->Argument.Receive_Can.Id >> 8) & 0xFF;
    Action_p->user_array[7] = (Event_p->Argument.Receive_Can.Id) & 0xFF;
```

1 ID A1

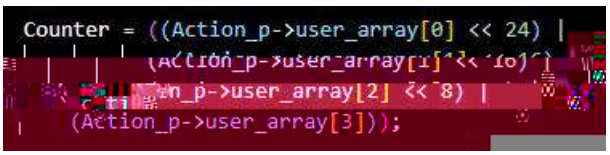
```
else if (Event_p->
```

1 ID A2 A1
CAN_OCCUPY CAN



1 ID A3 Counter +1, Counter

Counter



Counter

counter 0 2 A1

A3 A3 A1 A2 counter 1 A1 A3

A2

4.

GW2112