

1288 9
4849 14-17

“ ”

@ 2024



CAN/CAN FD

1.	.....	4
1.1	.....	4
1.2	.....	4
2.TH7011	.....	5
2.1	.....	5
2.2	.....	6
2.3	.....	6
2.4	.....	7
2.5	.....	8
2.6	.....	9
2.7	.....	10
2.8 LED	.....	11
2.9	.....	12
3.	.....	13
3.1	.....	13
3.2	.....	13
3.3	.....	13
3.4	.....	14
3.5	TSMaster	15
3.5.1	.....	15
3.5.2	.....	19
3.5.3	/	20
3.5.4	Bus-off	25
3.5.5	.....	26
4.	.....	27
5.	.....	29

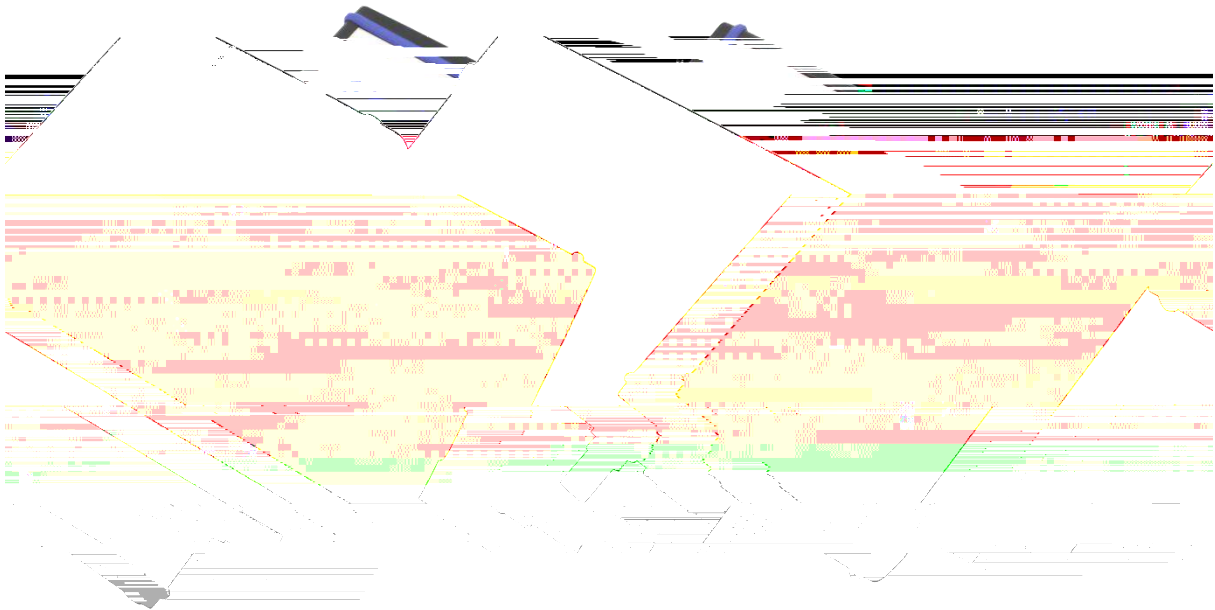
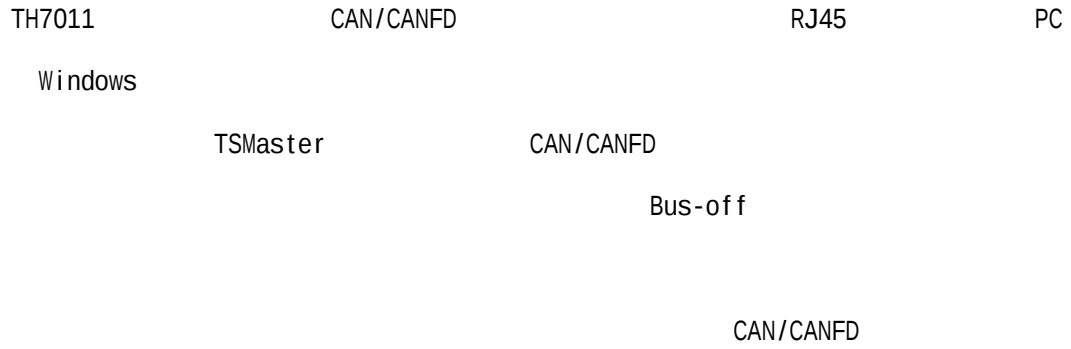


1.

1.1

2.TH7011

2.1





2.2

✓	CAN/CANFD	
✓		
✓		65536
✓	CAN_H	CAN_L ADC
✓	CAN	
✓	CAN	
✓	CAN	bit
✓	CAN	
✓	CAN	
✓	CAN	
✓	CAN	Bus-off
✓		

2.3

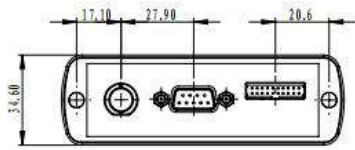
CAN/CANFD	CAN 125Kbps-1Mbps
	CANFD 5Mbps
Digital CAN disturbances	Min.step size 5ns
I/O	Digitaloutputs 2
	Digitalinputs 2
(ISO-16845)	Analogoutputs/inputs 6
	1x D-SUB9(male) for 1 CAN/CANFD channel
	1x Binder for external trigger

2.4

	DC		9	12	32	V
	DC		--	0.42	--	A
	DC		--	5	--	W
CAN		CANH CAHL	-58	--	+58	V
		1mA	2500	--	--	VDC



2.5



其余 ∇

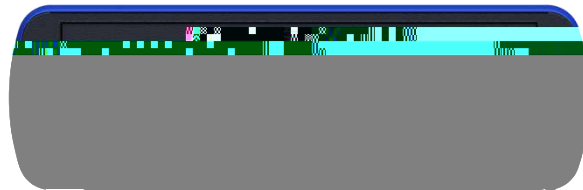
108.60

32

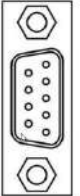




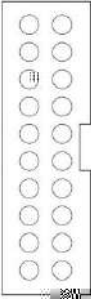
2.7



- TimeSync
- DC
- USB2.0
- RJ45
- Trigger Out
- DB9 Male

DB9		
	PIN2	CANFD_Low
	PIN3	CANFD_GND
	PIN7	CANFD_High

- 20Pin Header connector

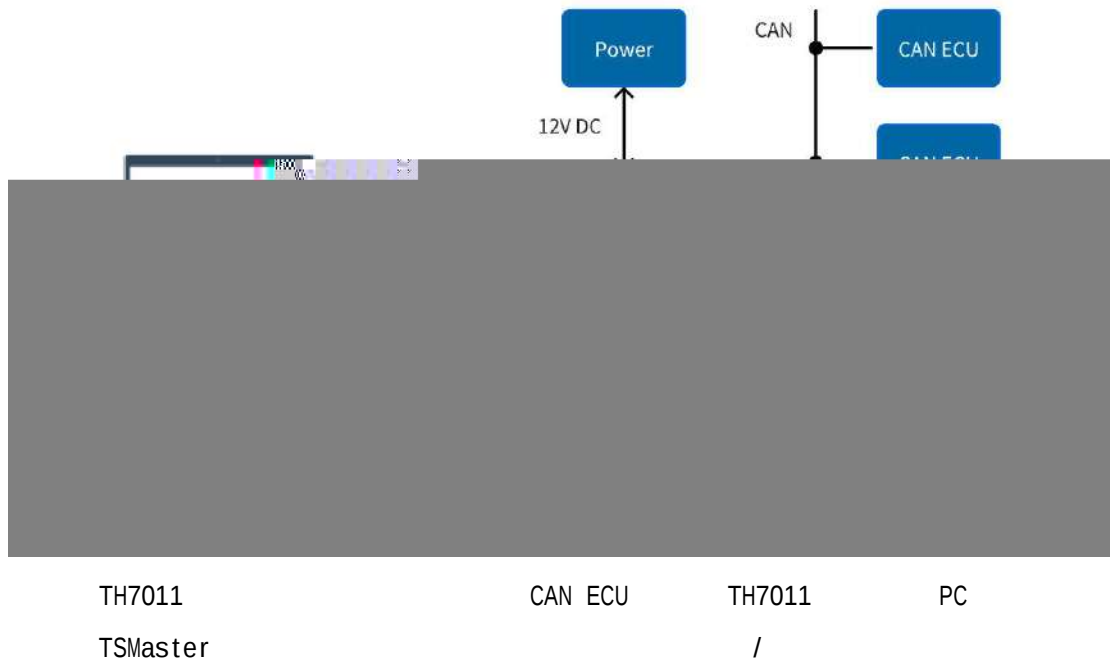
I/O				
	PIN1	TXD	PIN2	AIA00
	PIN3	RXD	PIN4	AIA01
	PIN5	GND	PIN6	AIA02
	PIN7	DI1	PIN8	AIA03
	PIN9	DI2	PIN10	AIA04
	PIN11	UART_RX	PIN12	AIA05
	PIN13	GND	PIN14	GND
	PIN15	D01	PIN16	GND
	PIN17	D02	PIN18	VCC_5V
	PIN19	UART_TX	PIN20	VCC_5V



2.9

3.

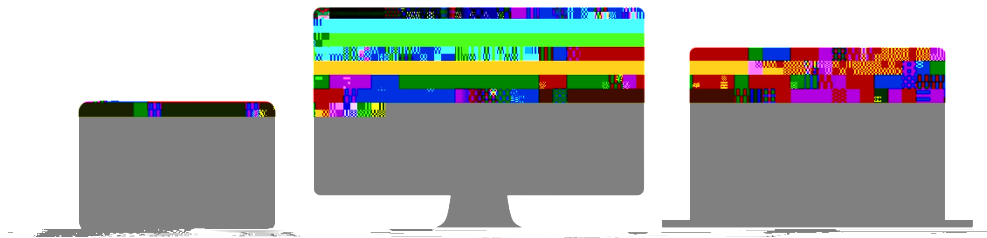
3.1

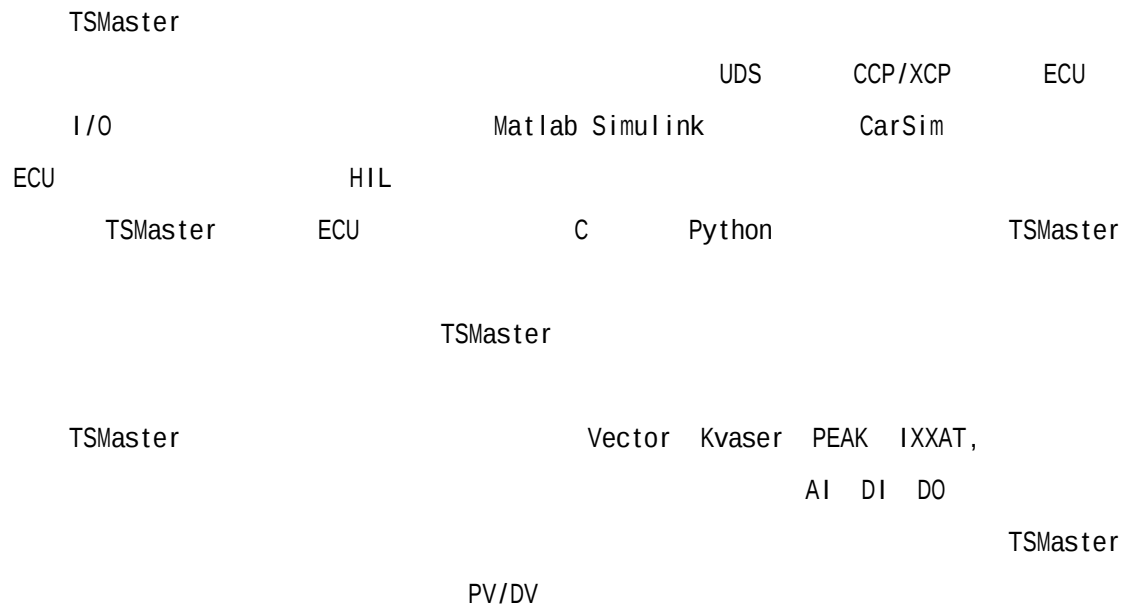


3.2

TOSUN
Windows7/8/10/11 Linux

3.3





3.4

TSMaster

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



PC



3.5 TSMaster

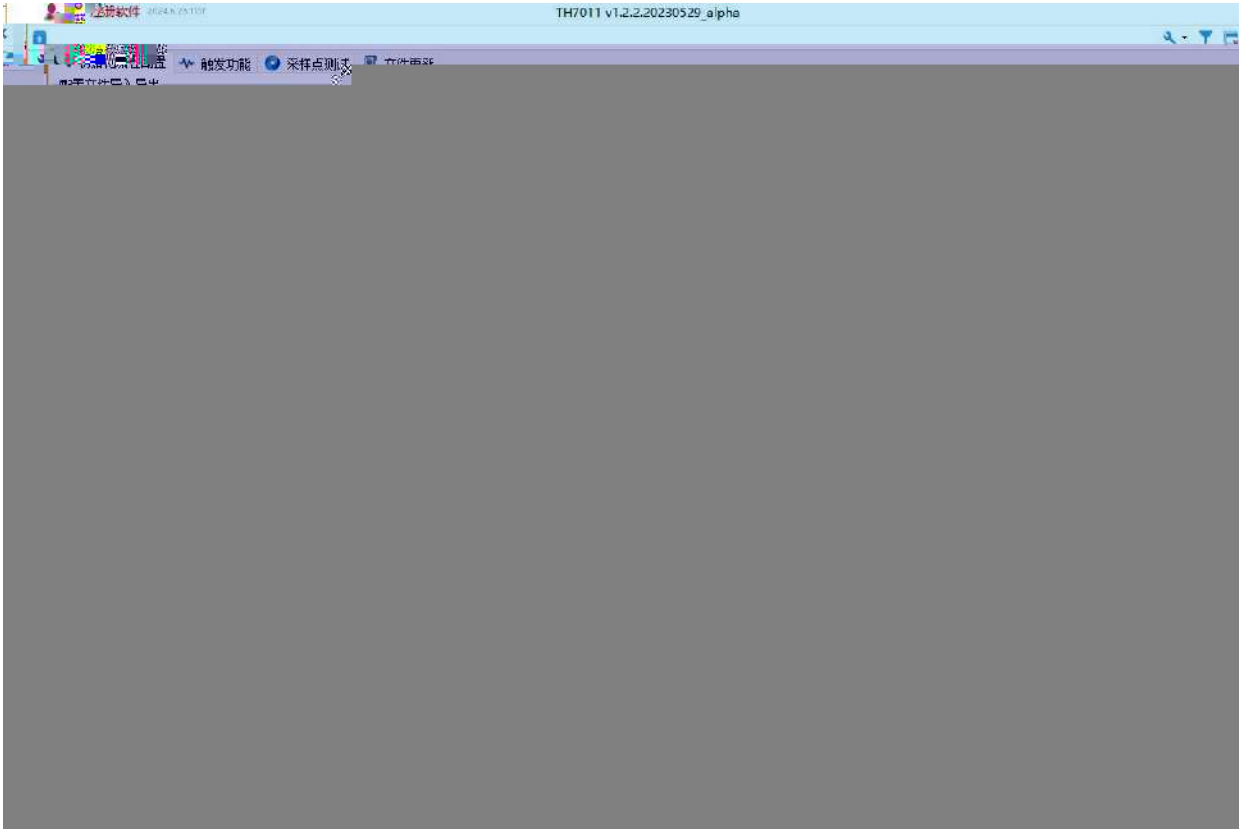


3.5.1



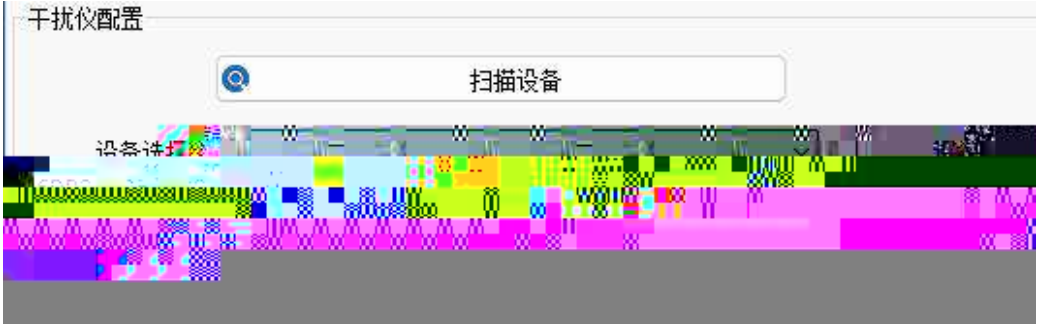


1 “ ”



2 “ ” “ ”

()



3 “ ” “ ”



4

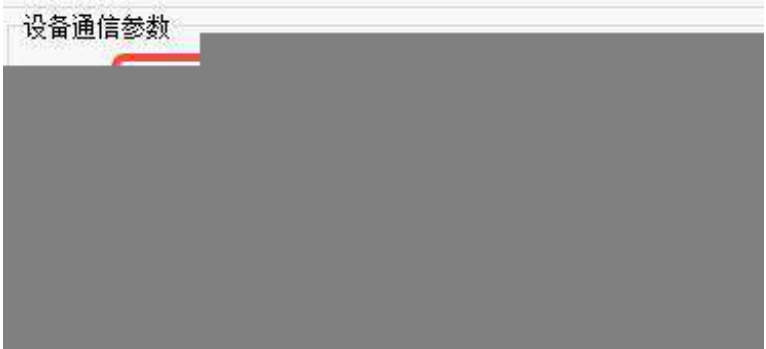
PC

IP

IP

192.168.1.xx

IP



5

“

”

“

”

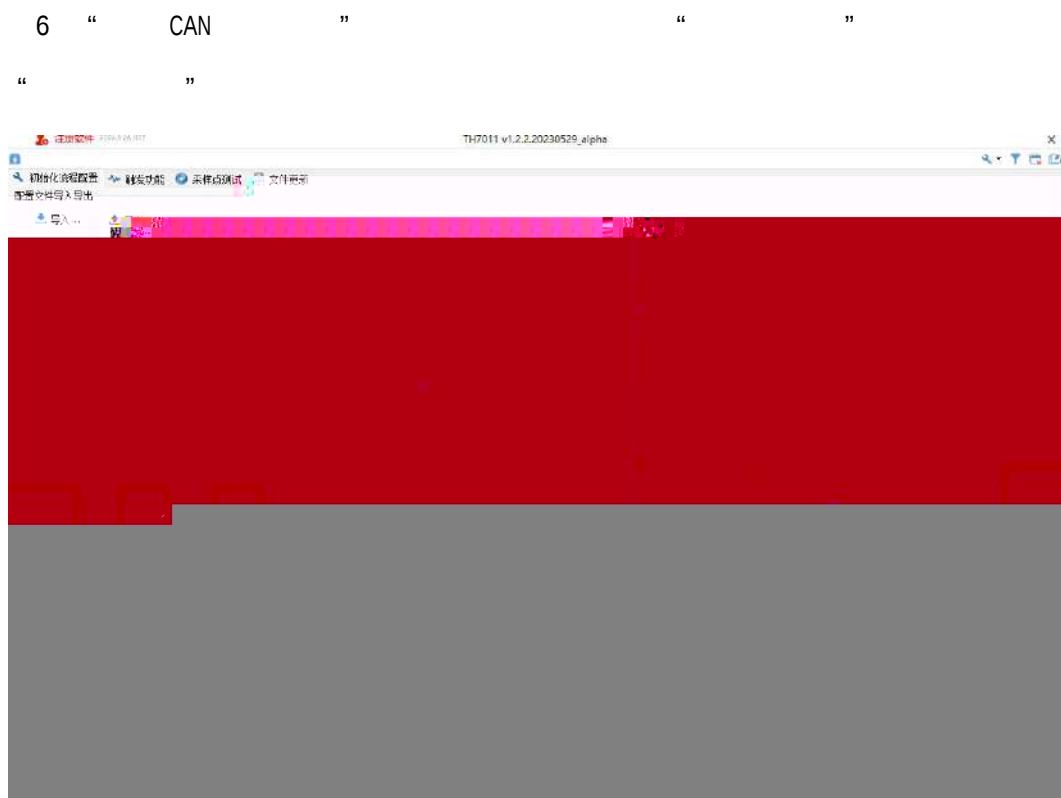


设备通信参数

IP: 192.168.2.100 子网掩码: 255.255.255.0

端口: 8888 协议类型: TCP

连接设备 断开设备



3.5.2

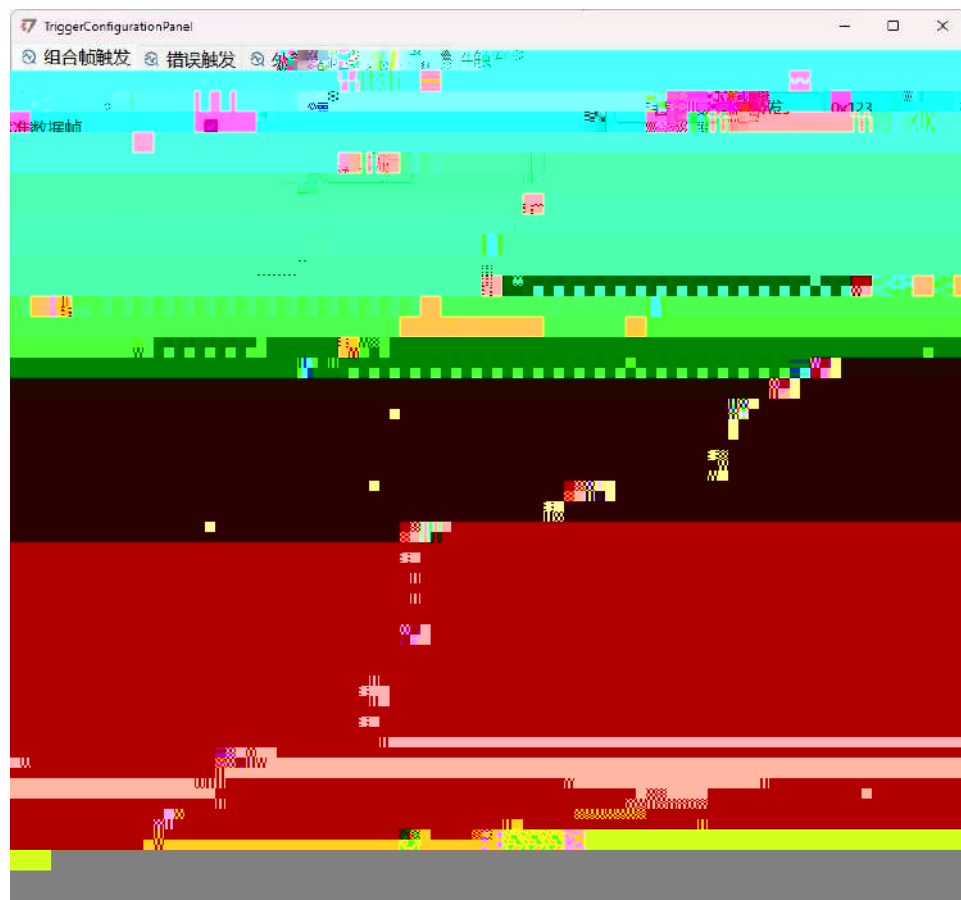


3.5.3 /

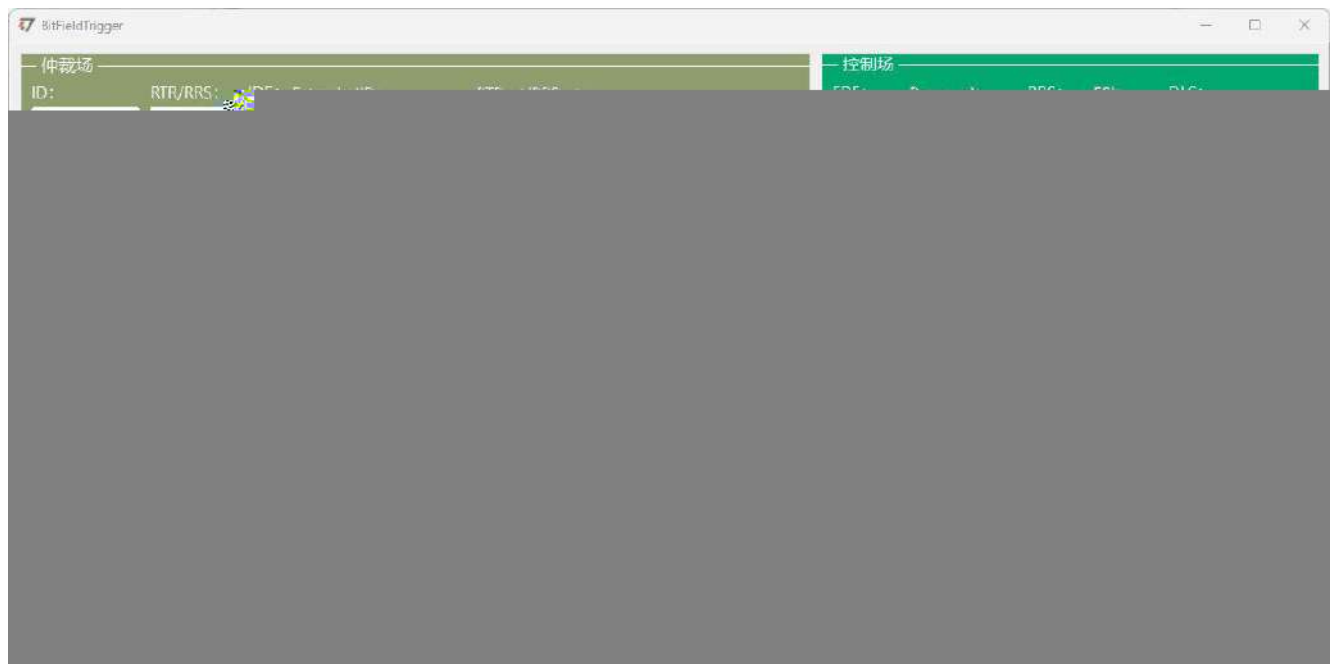




1



/ / / bit



	ID	ID
	RTR/RRS	RTR
		RRS
		RTR 0 RTR 1
		RRS x
	IDE	IDE 0 CAN 11
		IDE 1 CAN 29
	FDF	FDF 0 CAN CAN
		FDF 1 CAN CANFD
	BRS	BRS 0
		BRS 1
	DLC	

		SOF ARBFIELD CONTROLFIELD DATAFIELD CRCFIELD CRC ACKFIELD ACK EOFIELD
		bit CRCFIELD16 ACK



2

大小周期配置

周期: 周期间隔: 重复次数: 重复间隔:



2

3

4

1

8



*

1 7

12 18

4

4

4

1 7

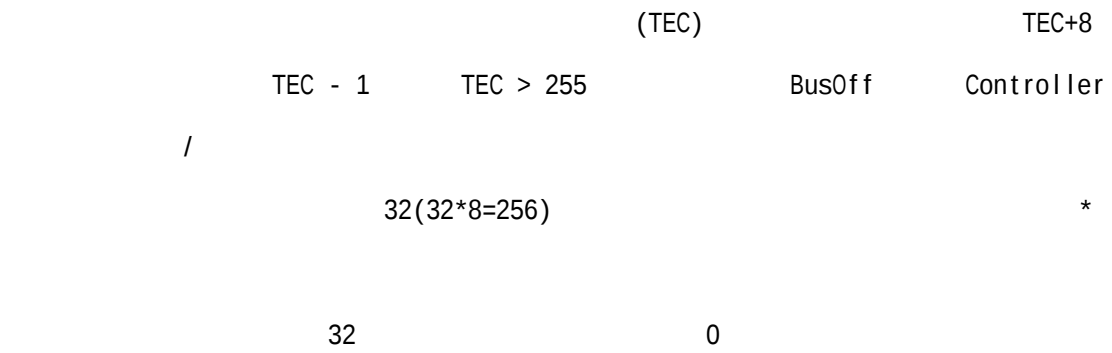
1

3



n

3.5.4 Bus-off





3.5.5



ID: ID CAN CANFD

ID ID

: CAN CANFD

BRS: BRS

:

:

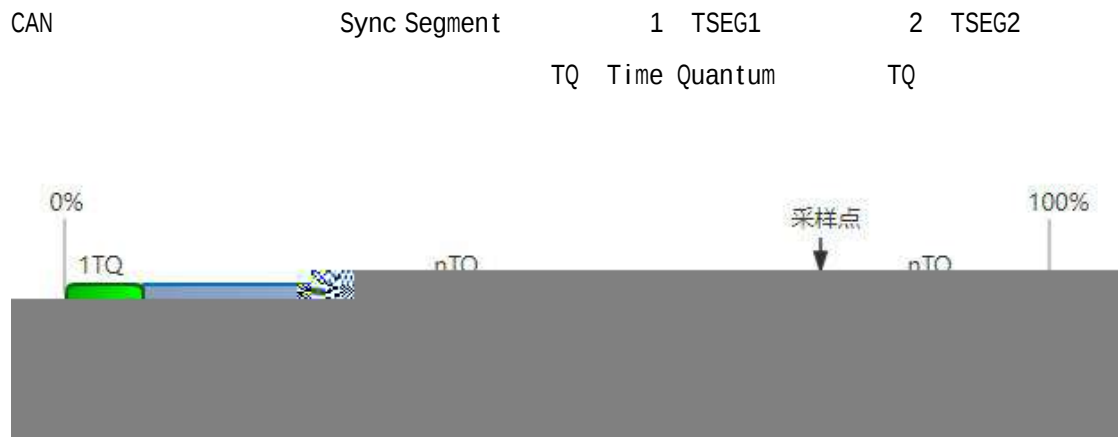
/ :

/

:

:

4.



$$SP = \frac{Sync + TSEG1}{Sync + TSEG1 + TSEG2}$$

TOSUN 500K 80% 1 TSEG1 63 TSEG2

16



$$(1+63) / (1+63+16) = 80\%$$

FPGA ticks

TH7011 200MHz T0=1/200M=5ns

500Kbps T1=1/500K=2000ns

Bit T1/T0=400 ticks

TH7011

TH7011 :



--

--

65536

--

--

0 1

CAN

CAN

a. TH7011 bit

b.

c. CAN

d. CAN

e. CAN

f.

g. CAN

5.

TH7011

6

,

+12V DC

() -40 ~+80

() 10%~90%

,

