

1288 9

4849 14-17

" "

@

2024-2025

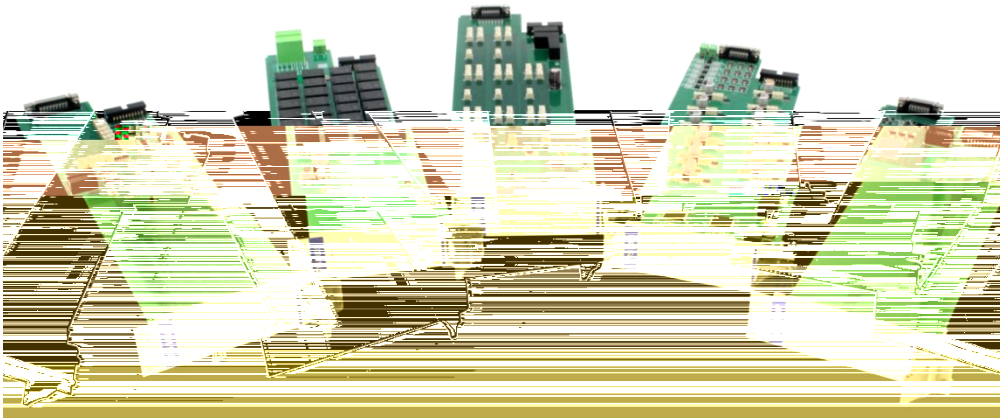
TTS

TTS TC TP TE TLog TTS H L ECU

TTS

TTS0001	TTS9011	TTS9015	TTS9021
TTS9036	TTS9045	TTS1018	TTS1026P
TTS1034	TTS1016 Pro	TTS8012	TTS8920
TTS8516	TTS9036A	TTS8013PX	TTS1013
TTS1015P	TTS9027		

- TTS
- TTS
CAN/LI N/FI exRay
- / TTS /
PWM
- TTS TSMaster TSMaster
-



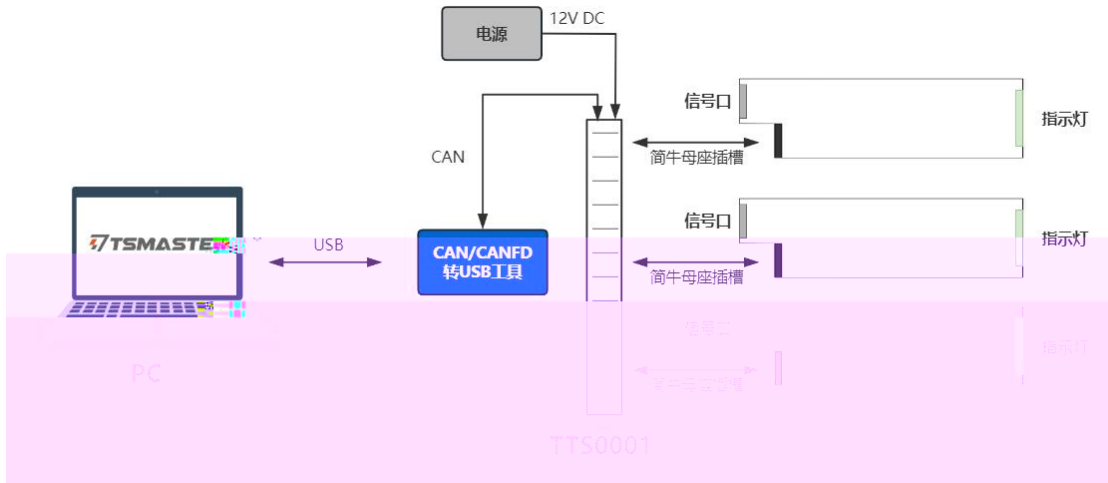
电话:

邮箱:

TTS

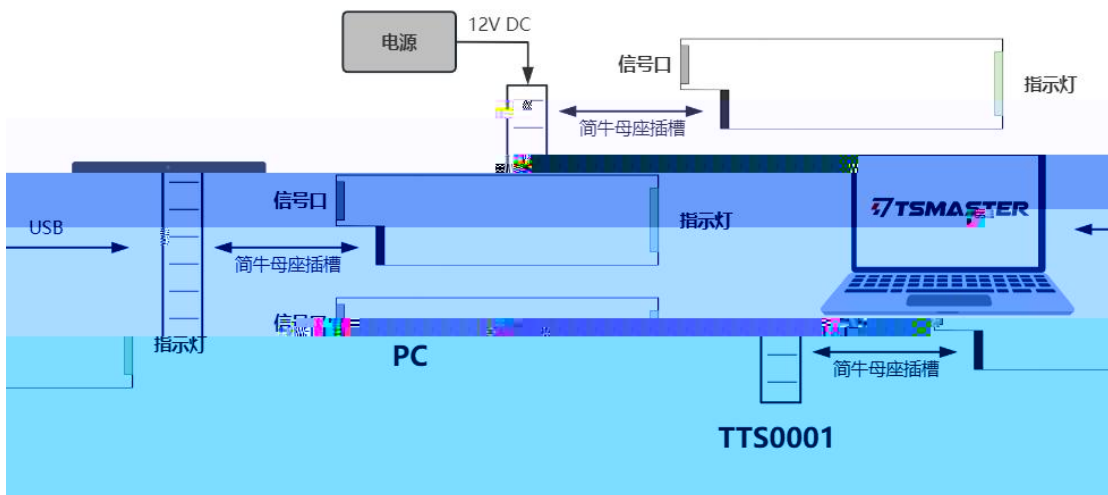
TTS9011 TTS9015 TTS9021 TTS9036 TTS9045

TTS0001 TTS0001 TTS0001 CAN CAN/CANFD
 USB CAN/CANFD CAN



TTS1018 TTS1026P TTS1034 TTS1016 Pro

TTS0001 TTS0001 TTS0001
 USB



目录

关于手册

产品选型

检查和维护

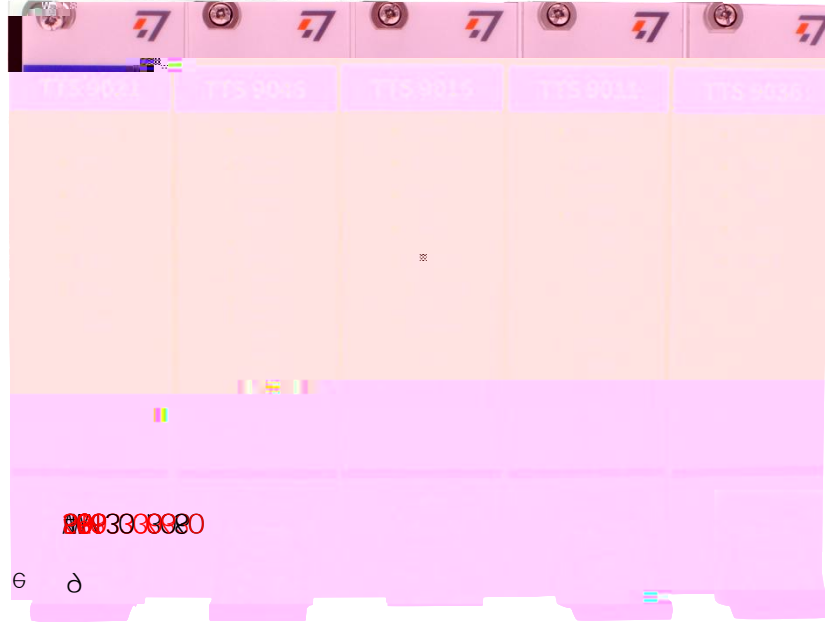
1.

1.1

1.2

2.

2.1



TTS9011	TTS9015	TTS9021	TTS9036	TTS9045
---------	---------	---------	---------	---------

12

8

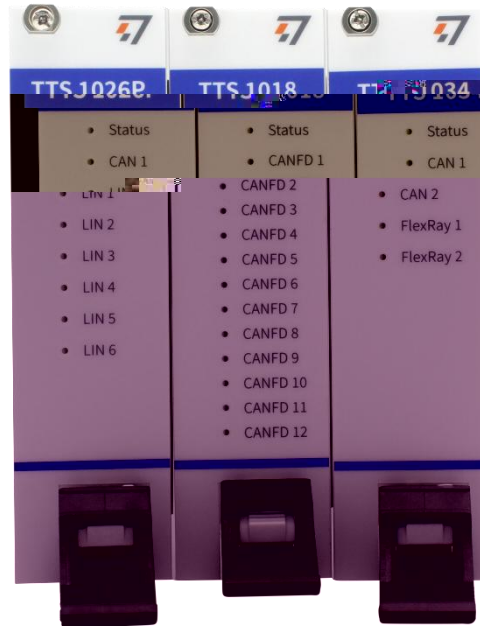
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5

16

PWI 3633063

2.2

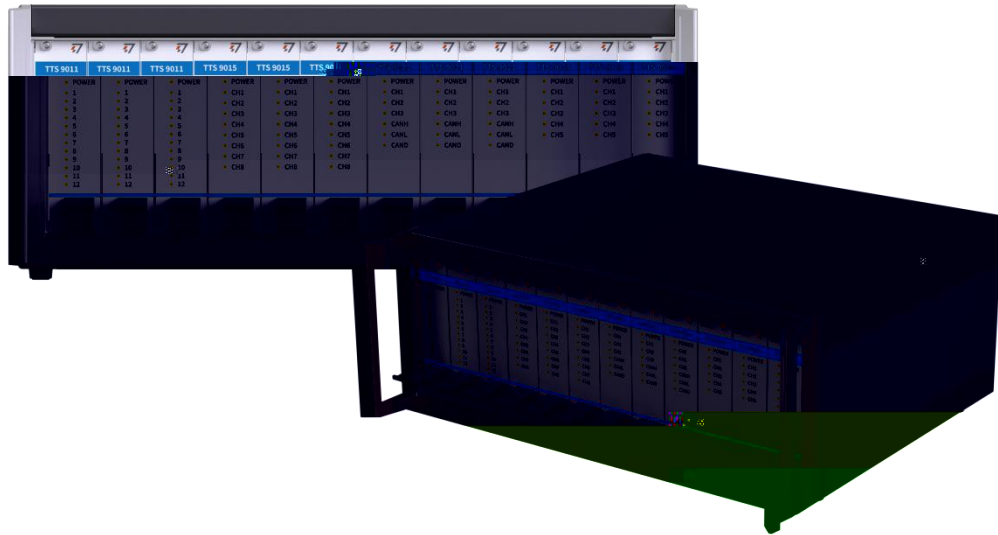


	TTS1018	TTS1026P	TTS1034	TTS1016 Pro
	12x CANFD 1+11 CANFD1	1x CANFD 6x LIN	2x CANFD 1+1 CANFD1 2x FlexRay	4x CANFD 2x LIN
	CAN 125k-1Mbps CANFD 8Mbps	CAN 125k-1Mbps CANFD 8Mbps LIN 0-20Kbps	CAN 125k-1Mbps CANFD 8Mbps	CAN 125k-1Mbps CANFD 8Mbps LIN 0-20Kbps
CAN	20000fps	20000fps	20000fps	20000fps
	2500V	2500V	2500V	2500V
	USB +DC	USB	USB	USB +DC
	3U	3U	3U	3U

3. 0001

3.1

TTS0001 / TTS9000 3U
12



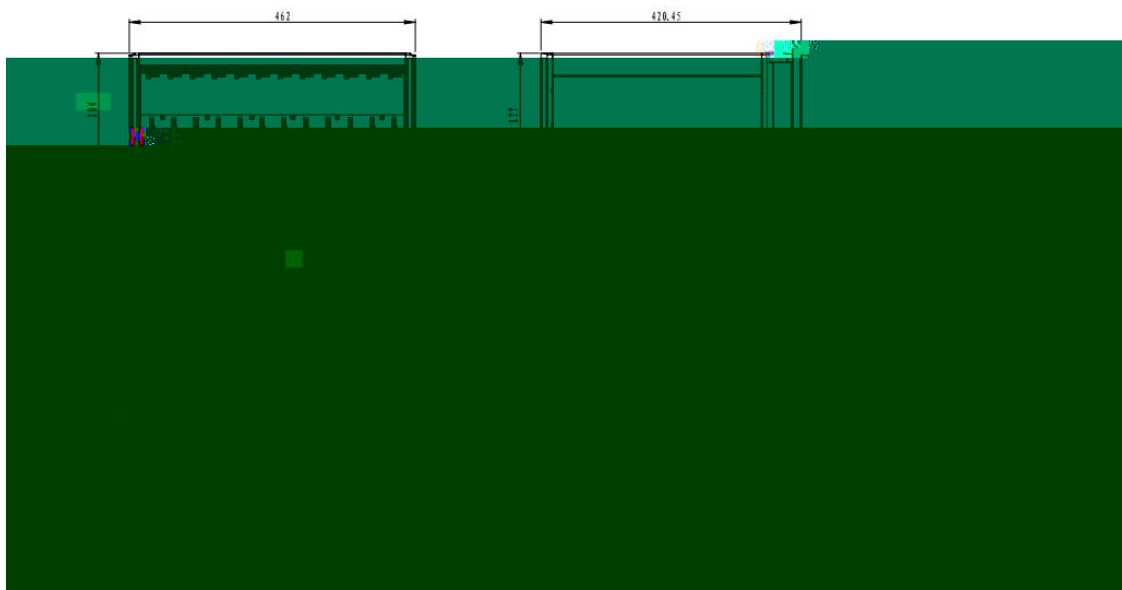
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12

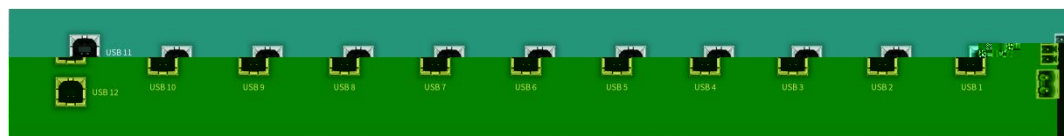
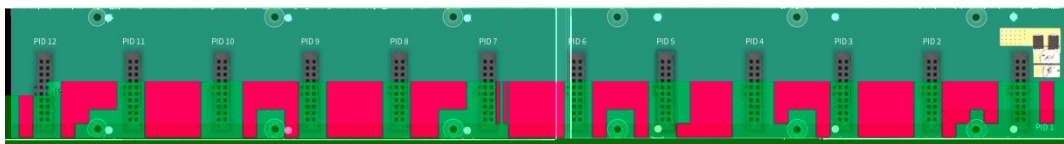
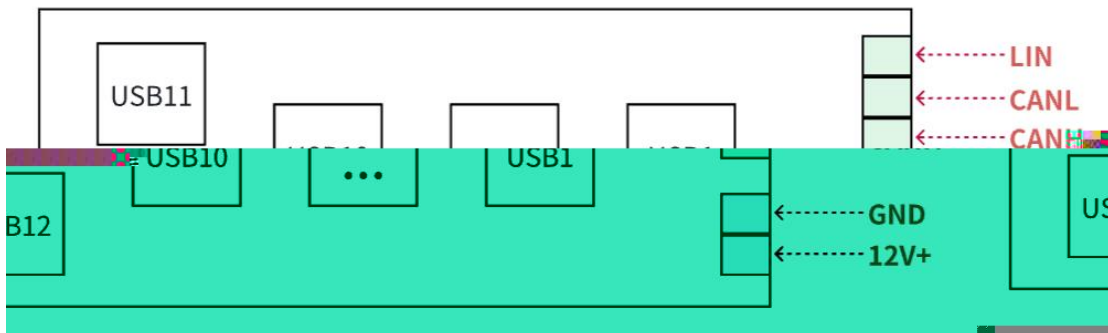
60

10A

3.3



3.4



- 20 Pin ---
- USB
- 3 Pin --- CAN
- 2 Pin --- DC

电话:

邮箱:

4.3

680ns

NMOS

PMOS



- Push+Pul l
- Push
- Pul l



- VREF
1.8V

- VBAT
5V



		12	
	250mA	100mA	0-60V

PWM

➤			

电话:

邮箱:

<ul style="list-style-type: none"> ➤ ➤ ➤ ➤ 			
<ul style="list-style-type: none"> ➤ ➤ ➤ ➤ ➤ 			
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PWM

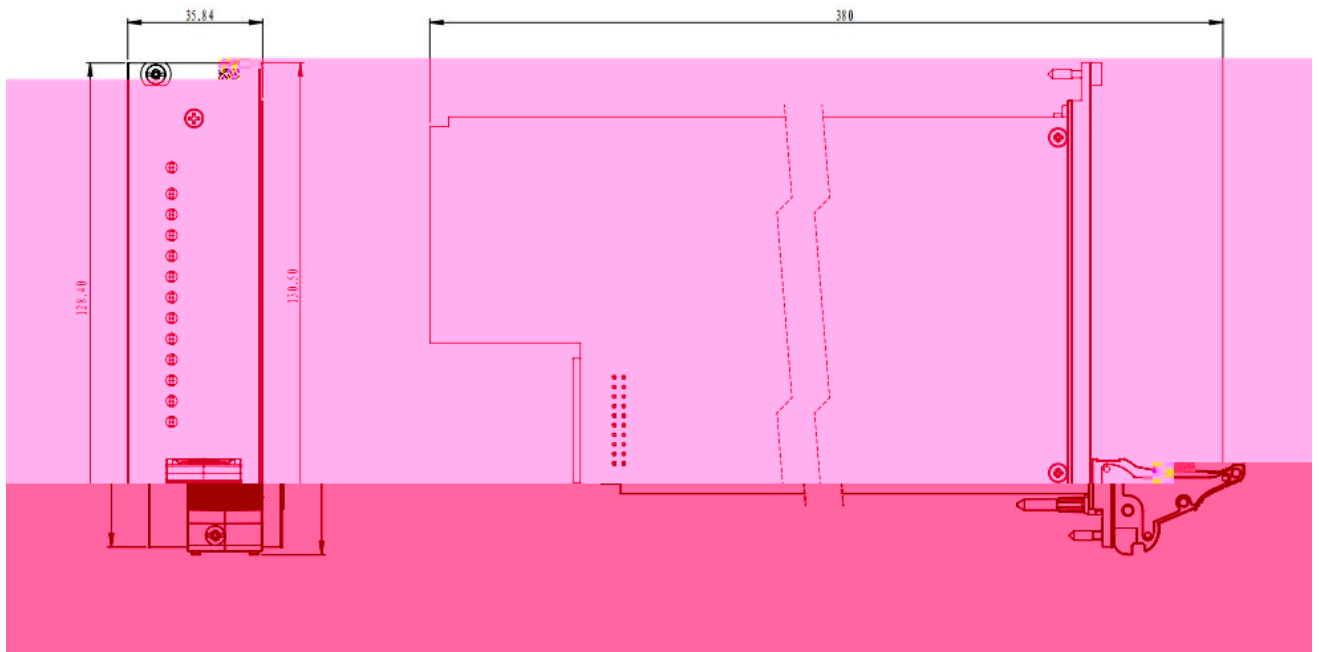
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➤			
➤			
➤			

4.4

	DC		9	12.0	30	V
	DC		--	0.19	--	A
	DC		--	2.2	--	W
CAN		CANH CAHL	-58	--	58	V
			1mA	2500	--	VDC

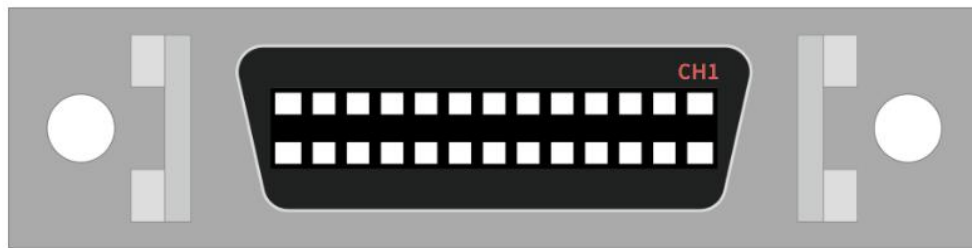
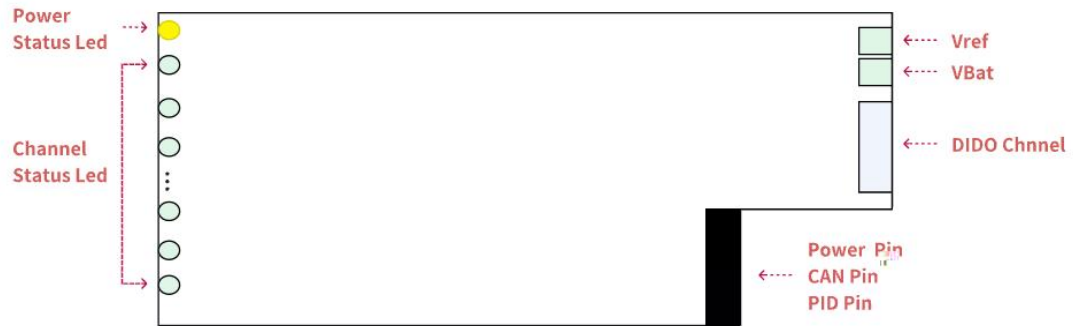
4.5



电话:

邮箱:

4.6



➤ SCSI - 26 Pi n

Pi n 1	CH1	Pi n 2	CH2	Pi n 3	CH3	Pi n 4	CH4
Pi n 5	CH5	Pi n 6	CH6	Pi n 7	CH7	Pi n 8	CH8
Pi n 9	CH9	Pi n 10	CH10	Pi n 11	CH11	Pi n 12	CH12
Pi n 13	CGND	Pi n 14	CGND	Pi n 15	CGND	Pi n 16	CGND
Pi n 17	CGND	Pi n 18	CGND	Pi n 19	CGND	Pi n 20	CGND
Pi n 21	CGND	Pi n 22	CGND	Pi n 23	CGND	Pi n 24	CGND

4.



Status	
DI DO 1-12	DI DO

Status	
DI DO	DI DO

4.

电话:

邮箱:

5. 015

5.1

TTS9015	/	8		
	0-60V		-60V~-60V	0~+60V



5.2

8	/	
/		12V/6W
		CAN 1Mbps
		3U

5.3

	8
	0V~+60V
DAC	16bi t
	$\pm (0.4\% + 60mV)$ 0V 300mV
	30mA 8 10W

	8
	-60V~+60V 0V~+60V
	250kHz
ADC	20bi t
	$\pm (0.4\% + 60mV)$
	300K

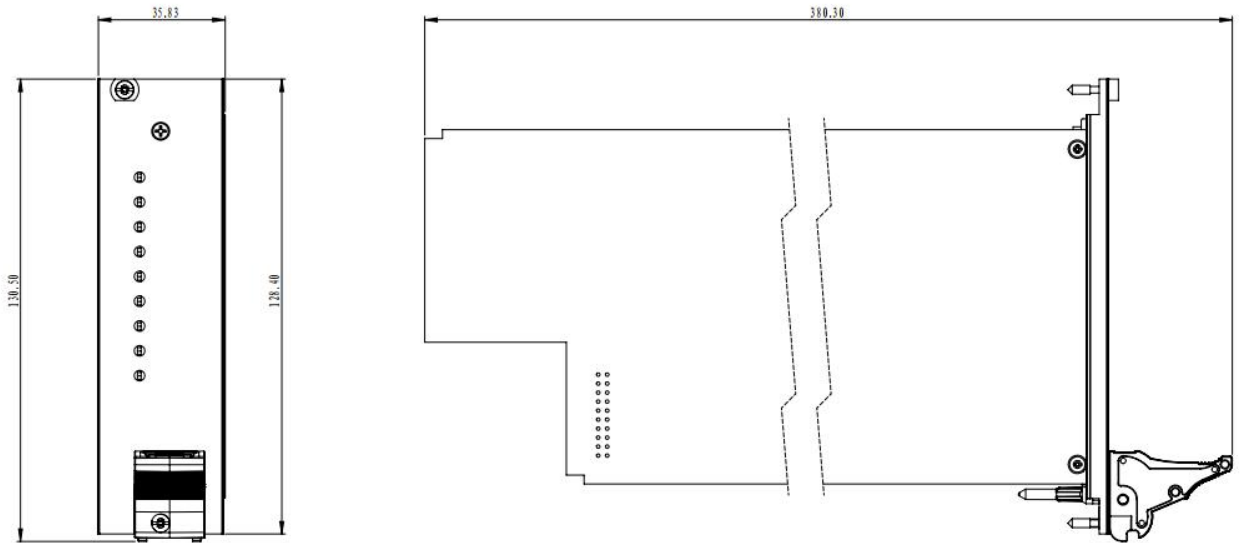
	8
	0mA~25mA
DAC	16bi t
	$\pm 1mA$

	8
	0mA~25mA
	250kHz
ADC	20bi t
	$\pm 1mA$

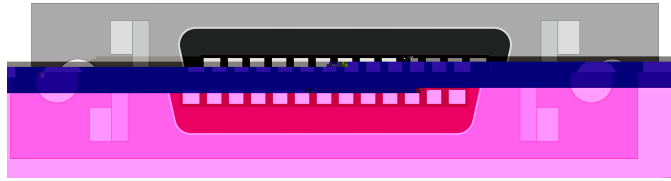
5.4

	DC	60V	9	12.0	30	V
	DC	60V	--	0.54	--	A
	DC	60V	--	6.5	--	W
CAN		CANH CAHL	-58	--	58	V
		1mA	2500	--	--	VDC

5.5



5.6



➤ SCSI - 26 Pi n

Pi n 1	CH1+	Pi n 2	CH1-	Pi n 3	CH2+	Pi n 4	CH2-
Pi n 5	CH3+	Pi n 6	CH3-	Pi n 7	CH4+	Pi n 8	CH4-
Pi n 9	CH5+	Pi n 10	CH5-	Pi n 11	CH6+	Pi n 12	CH6-
Pi n 13	CH7+	Pi n 14	CGND	Pi n 15	CGND	Pi n 16	CGND
Pi n 17	CGND	Pi n 18	CGND	Pi n 19	CGND	Pi n 20	CGND
Pi n 21	CGND	Pi n 22	CGND	Pi n 23	CH8-	Pi n 24	CGND
Pi n 25	CH8+	Pi n 26	CH7-				

5.



Status	
AI AO 1-8	AI AO

Status	
AI AO	AI AO

5.

电话:

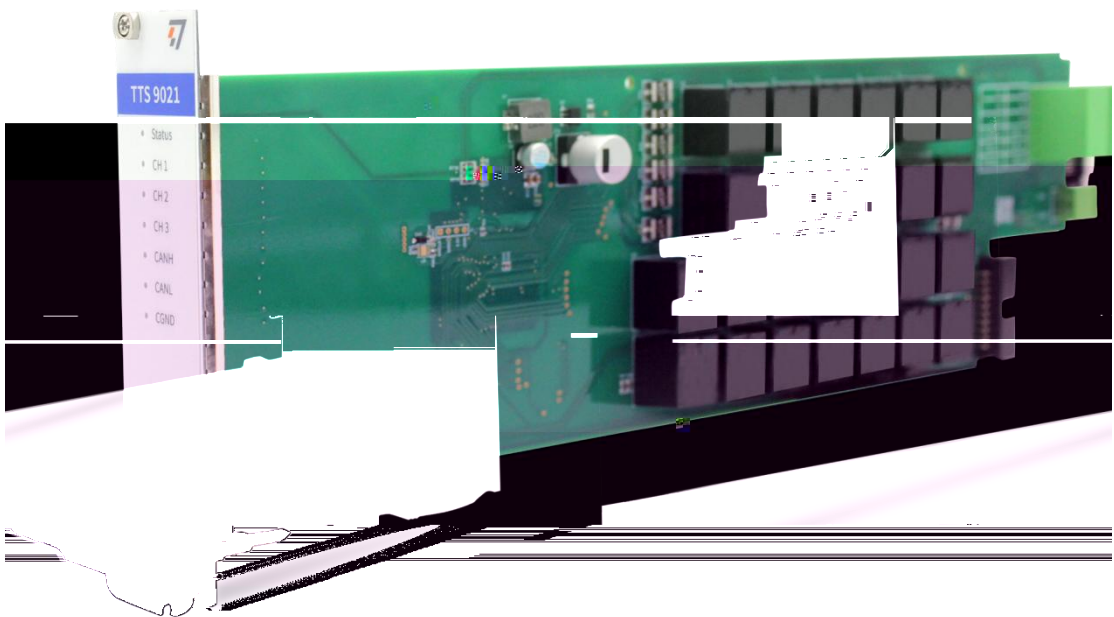
邮箱:

6. 021

6.1

TTS9021

4



6.2

/ 12V/0.8W

CAN 1Mbps

3U

6.3

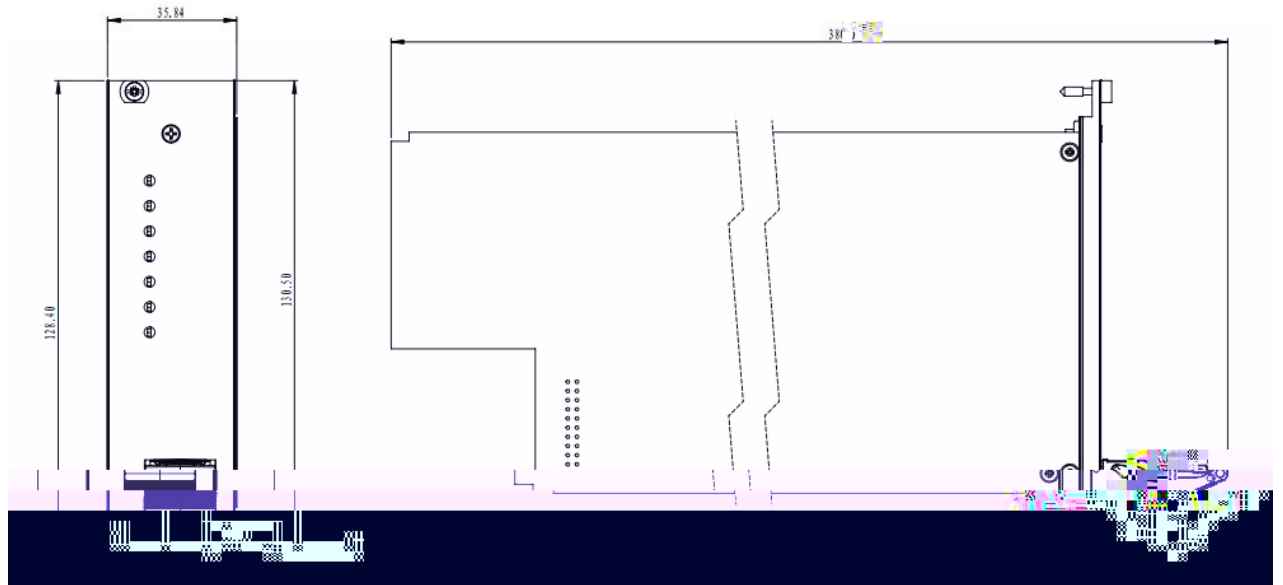
/	0 ~ 24V / 0 ~ 6A
---	------------------

(X1-Y1 X2-Y2 X3-Y3)	VBat
	VGND
CAN (CANH CANL CAN_GND)	VBat
	VGND
	0 60 120

6.4

	DC		9	12.0	30	V
	DC		--	0.84	--	A
	DC		--	10.1	--	W
CAN		CANH CAHL	- 58	--	58	V
		1mA	2500	--	--	VDC

6.5

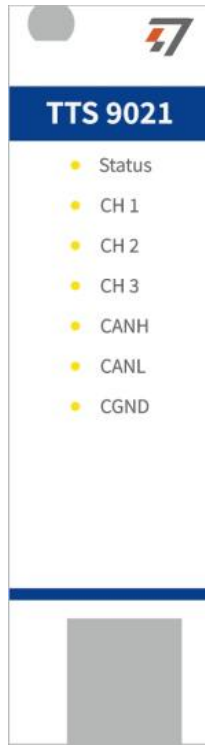


6.6

- 2 Pin
- 12 Pin

Y1	X1
Y2	X2
Y3	X3
CANH_out	CANH_i n
CANL_out	CANL_i n
CGND_out	CGND_i n

6.



Status	
CH1~3 CANH	
CANL CGND	

Status	

电话:

邮箱:

6.

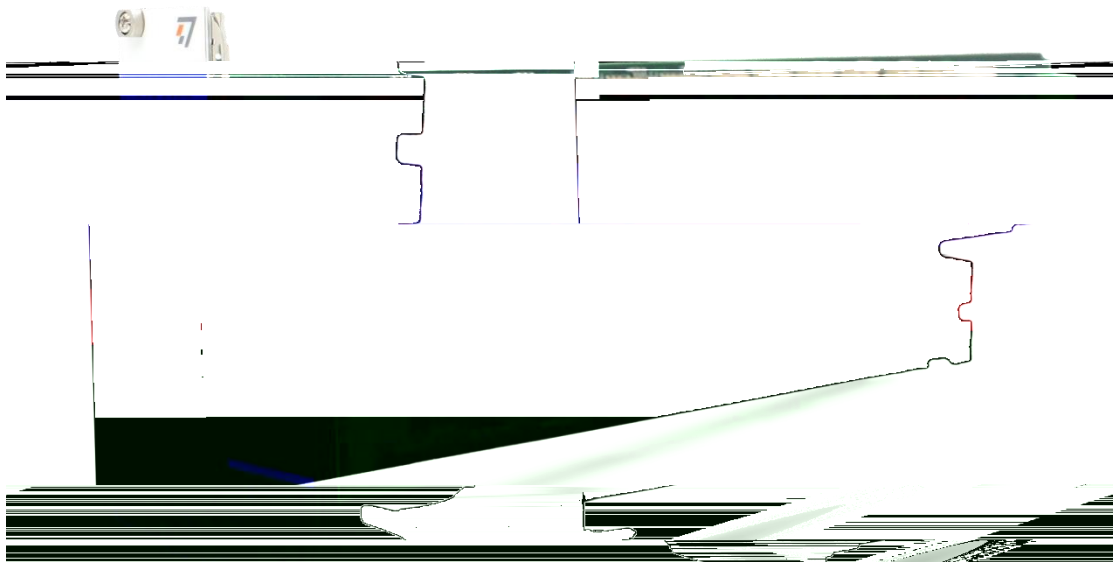
. 036

.1

TTS9036

5

1-4194303



.2

5

/ 12V/0.6W

CAN 1Mbps

3U

电话:

邮箱:

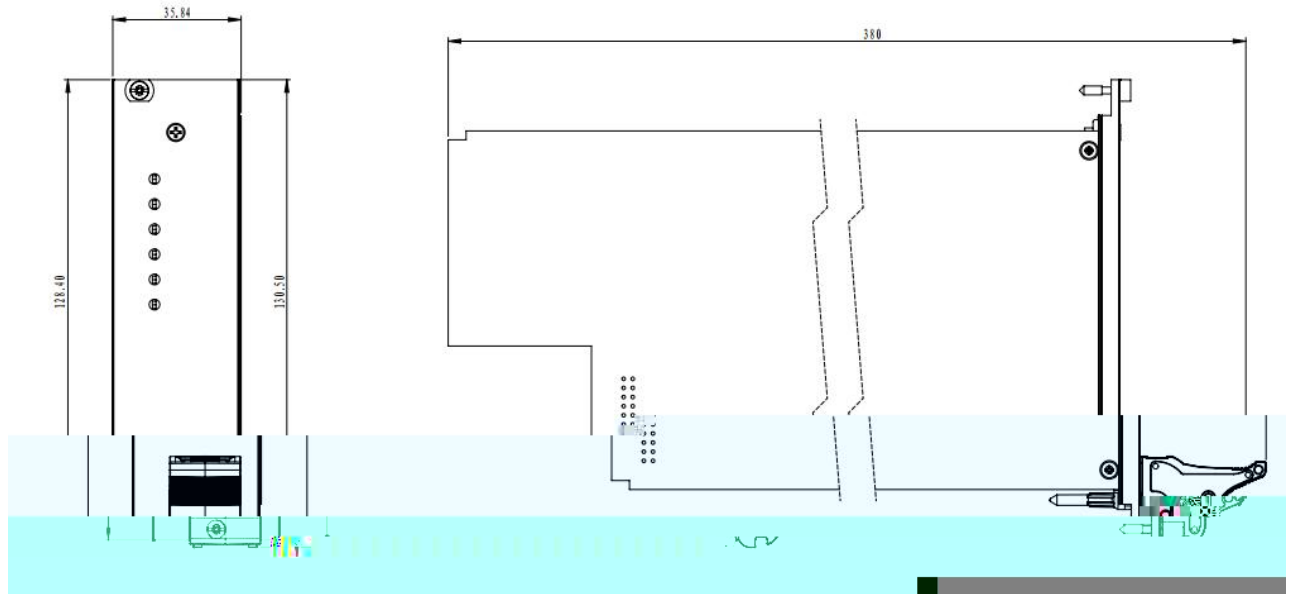
.3

	1	~4194303
	1	
	1	~500 ± 0.5
	500	~4194303 ± 0.1%
	1/4W	

.4

	DC		9	12.0	32	V
	DC		--	0.32	--	A
	DC		--	3.9	--	W
CAN		CANH CAHL	-58	--	58	V
		1mA	2500	--	--	VDC

.5



.6

➤ 5 Pin

CH5
CH4
CH3
CH2
CH1

.



Status	
Res1~5	

Status	

电话:

. 045

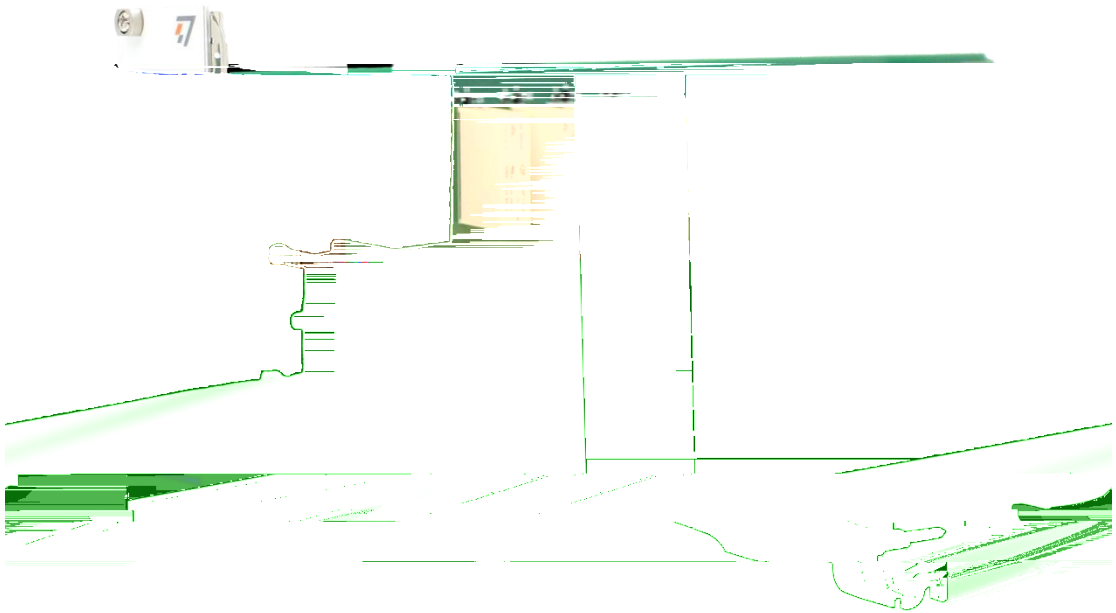
.1

TTS9045

16

1

CH/NO/NC



.2

16

/ 12V/0.4W

CAN 1Mbps

3U

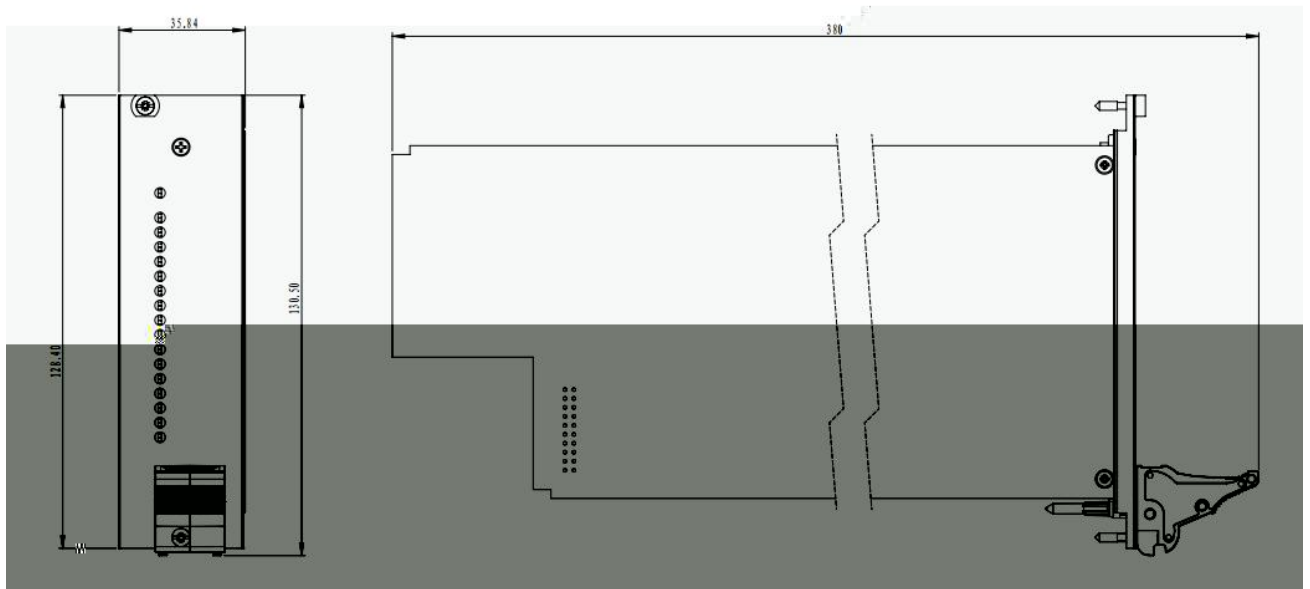
.3

	DC 36V 2.5A
	DC 40V 2A

.4

	DC		9	12	32	V
	DC		--	0.36	--	A
	DC		--	4.4	--	W
CAN		CANH CAHL	-58	--	58	V
			1mA	2500	--	VDC

.5



.6

➤ 45 Pin

+3 Pin

CH1	NO1	NC1
CH2	NO2	NC2
CH3	NO3	NC3
CH4	NO4	NC4
CH5	NO5	NC5
CH6	NO6	NC6
CH7	NO7	NC7
CH8	NO8	NC8
CH9	NO9	NC9
CH10	NO10	NC10
CH11	NO11	NC11
CH12	NO12	NC12
CH13	NO13	NC13
CH14	NO14	NC14
CH15	NO15	NC15

NC16
NO16
CH16

电话：

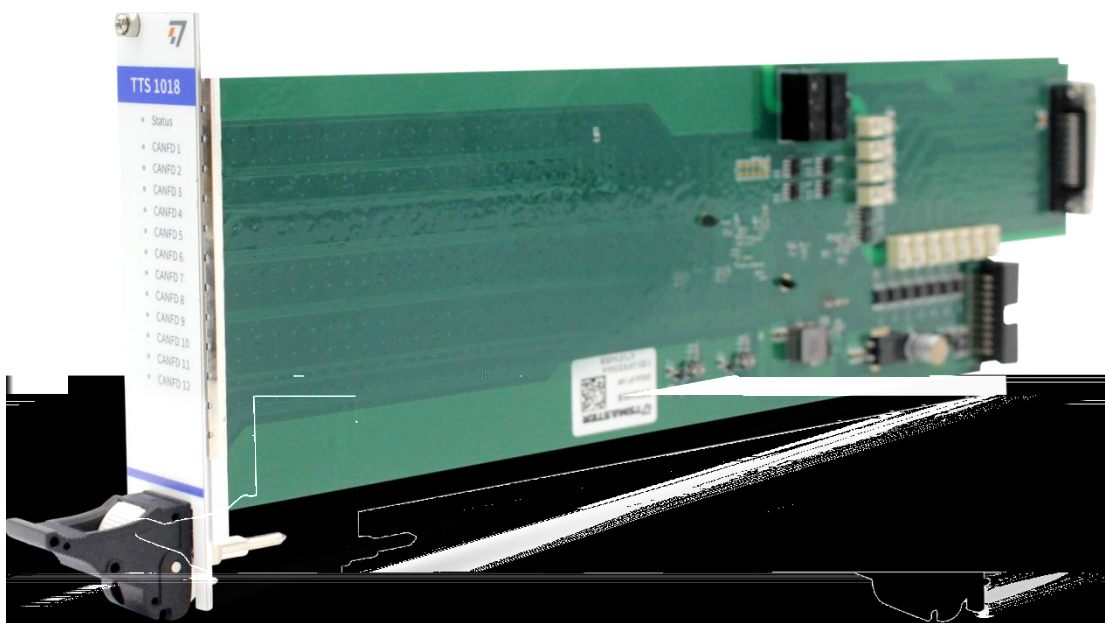
邮箱：

.

. 101

.1

TTS1018	12	CANFD			
TTS	CANFD1		CANFD1		
	CANFD1			TTS0001	
	TC1018				
	TSMaster		DBC	ARXML	
	CANFD		UDS	ECU	CCP/XCP



.3

12x CANFD 1+11 CANFD1

3U

电话:

邮箱:

.3

- ✓ us
- ✓ Windows Linux
- ✓ CAN DC2500V
- ✓ dbc a2l blf asc arxml
- ✓ CAN 125Kbps-1Mbps CANFD 8Mbps
- ✓ blf asc /
- ✓ UDS CCP/XCP
- ✓ UDS Flash Bootloader
- ✓
- ✓ Windows Linux
- ✓ CANFD1 120
- ✓ TSMaster License

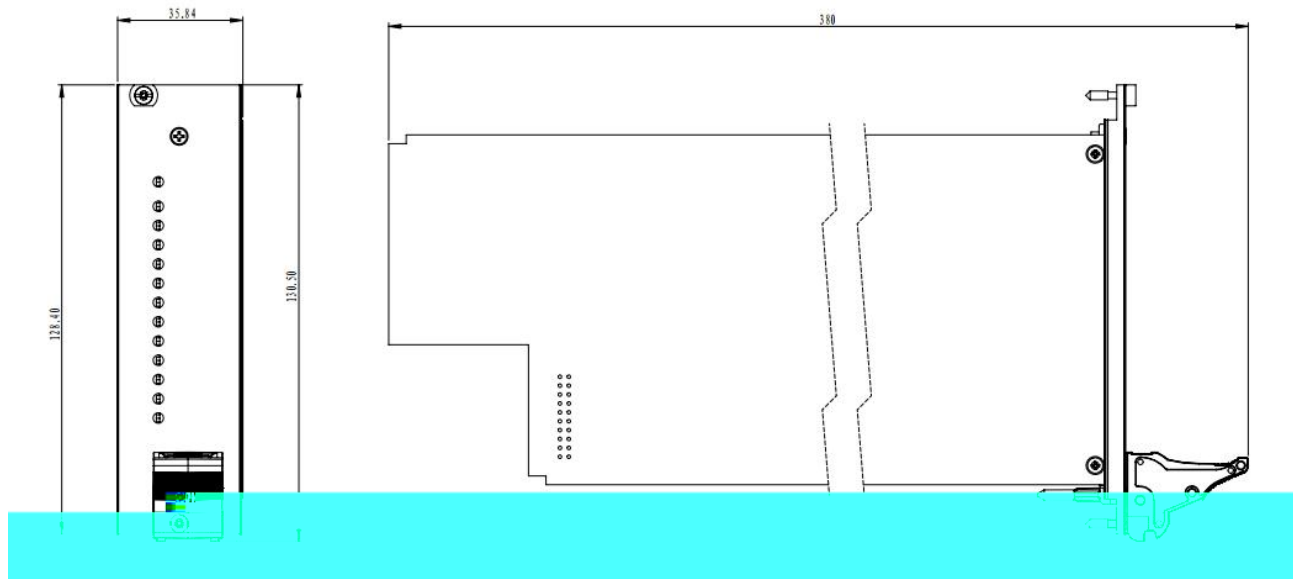
.4

	12 *CANFD 1+11 CANFD1
PC	USB2.0
	SCSI - 37 Pin
	Windows Linux
	700 CAN
CAN	CAN2.0A/B ISO11898-1 125Kbps-1Mbps
CANFD	ISO ISO CAN FD 125Kbps-8Mbps
	1us
	120 1
*	20000 /
*	20000 /
	CAN DC2500V
	USB +DC
	4.5W
	10% 90%

.5

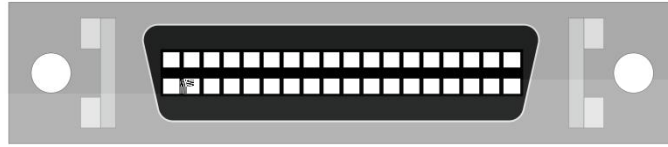
	USB	CAN	4.8	5.0	5.2	V
	DC	CAN	9	12	32	V
	USB	CAN	--	0	--	A
	DC	CAN	--	0.35	--	A
	USB	CAN	--	4.2	--	W
CAN		CANH CAHL	-58	--	58	V
			--	120	--	
		1mA	2500	--	--	VDC

.6

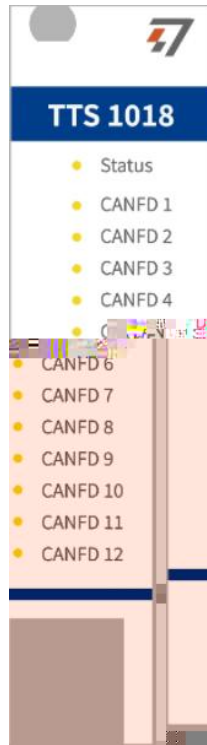


电话:

邮箱:



Pi n 3	CAN_Shi el d	Pi n 4	CGND
Pi n 5	CAN2_L	Pi n 6	CAN2_H
Pi n 7	CAN3_L	Pi n 8	CAN3_H
Pi n 9	CAN_Shi el d	Pi n 10	CGND
Pi n 11	CAN4_L	Pi n 12	CAN4_H
Pi n 13	CAN5_L	Pi n 14	CAN5_H
Pi n 15	CAN_Shi el d	Pi n 16	CGND
Pi n 17	CAN6_L	Pi n 18	CAN6_H
Pi n 19	CAN7_L	Pi n 20	CAN7_H
Pi n 21	CGND	Pi n 22	CAN_Shi el d
Pi n 23	CAN8_L	Pi n 24	CAN8_H
Pi n 25	CAN9_L	Pi n 26	CAN9_H
Pi n 27	CGND	Pi n 28	CAN_Shi el d
Pi n 29	CAN10_L	Pi n 30	CAN10_H
Pi n 31	CAN11_L	Pi n 32	CAN11_H
Pi n 33	CGND	Pi n 34	CAN_Shi el d
Pi n 35	CAN12_L	Pi n 36	CAN12_H



Status	
CANFD 1~12	

Status	
CANFD	CANFD
CANFD	CANFD

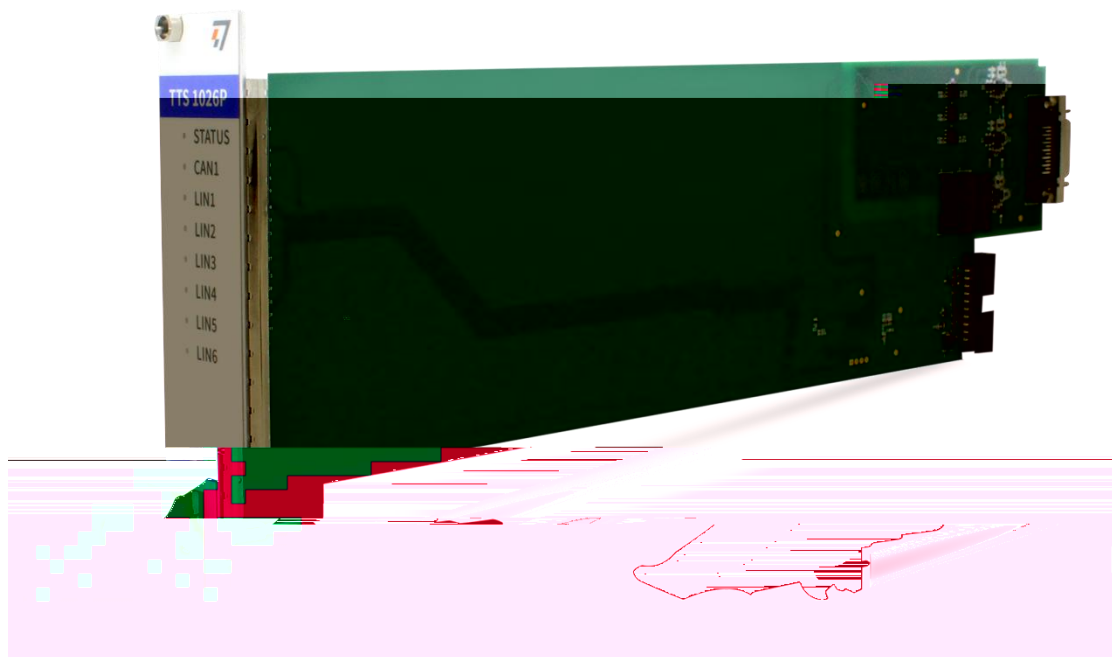
•

1. TCA0001 CAN

10. 1026

10.1

TTS1026P	1	CANFD	6	LI N				
TTS		CANFD1				CANFD1		
		CANFD1				TTS0001		
		TC1026P						
TSMster					DBC LDF	ARXML		
		CAN FD/LI N				UDS	ECU	CCP/XCP



10.2

1x CANFD

6x LI N

3U

电话:

邮箱:

10.3

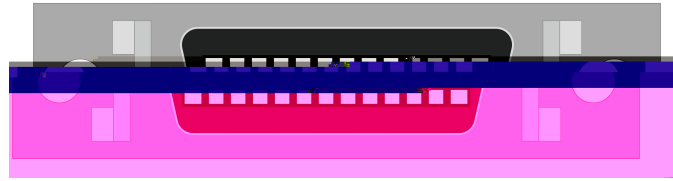
- ✓ us
- ✓ Windows Linux
- ✓ CAN DC2500V
- ✓ LDF dbc a2l bl f asc arxml
- ✓ CAN 125Kbps-1Mbps CANFD 8Mbps
- ✓ LIN
- ✓ bl f asc /
- ✓ UDS CCP/XCP
- ✓ UDS Flash Bootloader
- ✓ LIN UDS
- ✓
- ✓ Windows Linux
- ✓ TSMaster license

10.4

	1 *CANFD	/	6 *LIN
PC	USB2.0		
	SCSI - 26 Pin		
	Windows Linux		
		1000	CAN
CAN	CAN2.0A/B	ISO11898-1	125Kbps-1Mbps
CANFD	ISO	ISO	CAN FD 125Kbps-8Mbps
LIN	LIN1.3	LIN2.x	0-20Kbps
	LDF		
	1us		
	* 20000 /		
	*		

10.5

10.



Pi n 1	VCC_LI N1	Pi n 2	CGND
Pi n 3	LI N1	Pi n 4	VCC_LI N2
Pi n 5	CGND	Pi n 6	LI N2
Pi n 7	VCC_LI N3	Pi n 8	CGND
Pi n 9	LI N3	Pi n 10	VCC_LI N4
Pi n 11	CGND	Pi n 12	LI N4
Pi n 14	VCC_LI N5	Pi n 15	CGND
Pi n 16	LI N5	Pi n 17	VCC_LI N6
Pi n 18	CGND	Pi n 19	LI N6

10.



Status	
CAN 1	CANFD
LIN 1-6	LIN

Status	
CAN	CANFD
CAN	CANFD
LIN	LIN
LIN	LIN

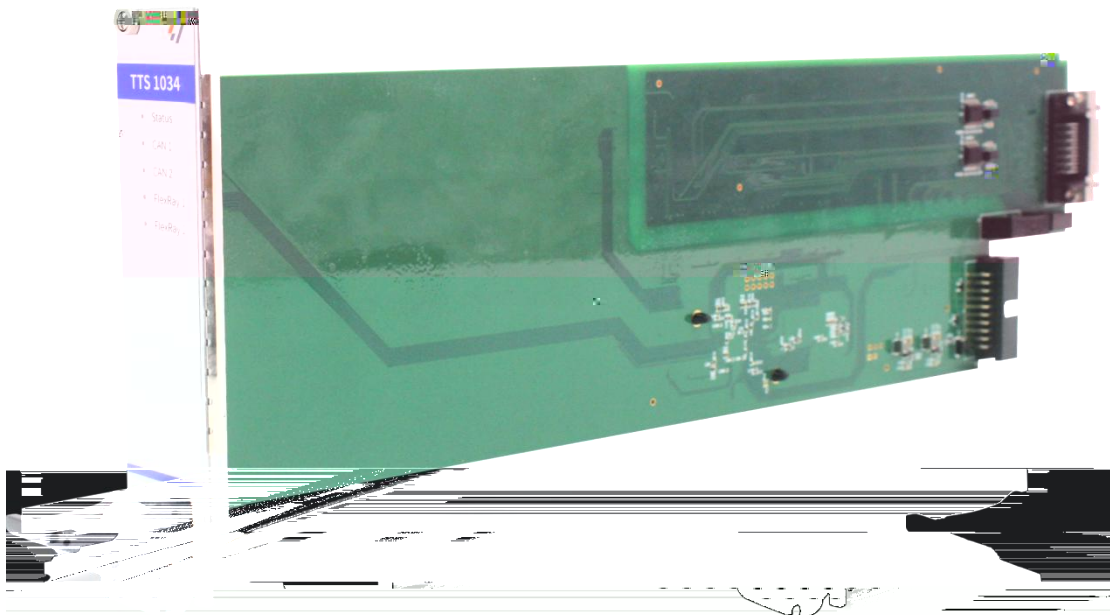
10.

1. TCA0001 CAN

11. 1034

11.1

TTS1034	2	CANFD	2	FI exRay				
	TTS		CANFD1				CANFD1	
				CANFD1				TTS0001
				TC1034				
	TSMster			DBC	ARXML			
	CAN FD/FI exRay					UDS	ECU	CCP/XCP



11.2

2x CANFD 1+1 CANFD1 2x FI exRay

3U

电话:

邮箱:

11.3

- ✓ us
- ✓ USB2.0 Windows Linux
- ✓ CAN DC2500V
- ✓ dbc a2l blf asc arxml
- ✓ CAN 125Kbps-1Mbps CANFD 8Mbps
- ✓ blf asc /
- ✓ UDS CCP/XCP
- ✓ UDS Flash Bootloader
- ✓
- ✓ TSMaster FlexRay CAN/CANFD
- ✓ Windows Linux

FlexRay

-
-
- Cycle multiplexing
- 254
- PDUs
-
- FlexRay
- 2 FlexRay FlexRay

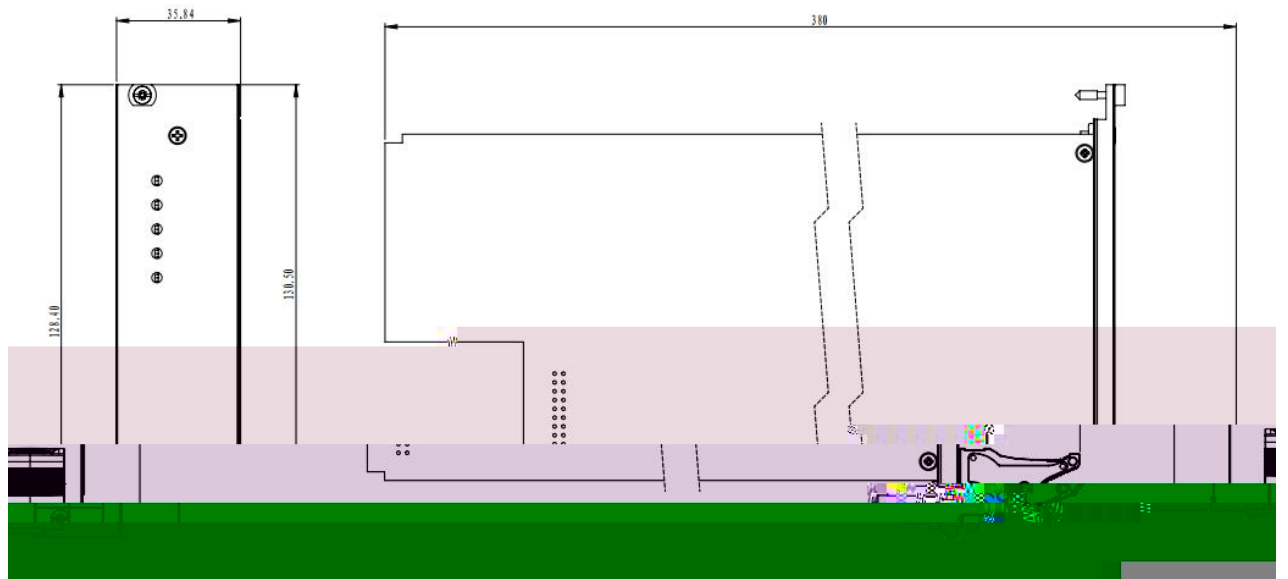
11.4

	2 *CANFD 1+1 CANFD1 / 2 *FI exRay
PC	USB2.0
	SCSI - 26 Pin
	Windows Linux
FI exRay	FI exRay channel A and B
	1000 CAN
CAN	CAN2.0A/B ISO11898-1 125Kbps-1Mbps
CANFD	ISO ISO CAN FD 125Kbps-8Mbps
	1us
CAN	120 1
FI exRay	100
*	20000 /
*	20000 /
	CAN/FI exRay DC2500V
	USB
	3W
	10% 90%

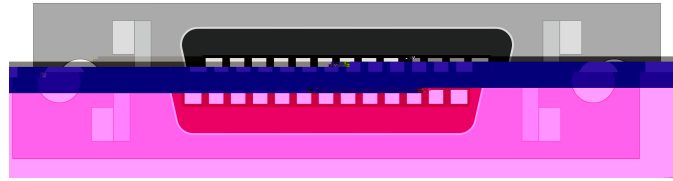
11.5

	USB	CAN	FI exRay	4.8	5.0	5.2	V
	USB	CAN	FI exRay	--	0.51	--	A
	USB	CAN	FI exRay	--	2.6	--	W
		CANH	CAHL	-58	--	58	V
CAN				--	120	--	
			1mA	2500	--	--	VDC
		FI exRay_BM		-60	--	60	V
FI exRay		FI exRay_BP		--	100	--	
			1mA	2500	--	--	VDC

11.6



11.



Pi n 1	CAN_Shi el d	Pi n 2	CGND
Pi n 5	CAN2_L	Pi n 6	CAN2_H
Pi n 7	CGND	Pi n 8	CGND
Pi n 9	Fl exRay_BM	Pi n 10	Fl exRay_BP1
Pi n 11	Fl exRay_BM2	Pi n 12	Fl exRay_BP2
Pi n 13	CGND	Pi n 21	CGND
Pi n 22	CGND	Pi n 23	Fl exRay_BP4
Pi n 24	Fl exRay_BM4	Pi n 25	Fl exRay_BP3
Pi n 26	Fl exRay_BM3		

11.



Status	
CAN 1~2	CANFD
FI exRay 1~2	FI exRay

Status	
CAN	CANFD
CAN	CANFD
FI exRay	FI exRay
FI exRay	FI exRay

11.

1. TCA0001 CAN

12.3

- ✓ us
- ✓ Windows Linux
- ✓ CAN DC2500V
- ✓ LDF dbc a2l bl f asc arxml
- ✓ CAN 125Kbps-1Mbps CANFD 8Mbps
- ✓ LIN
- ✓ bl f asc /
- ✓ UDS CCP/XCP
- ✓ UDS Flash Bootloader
- ✓ LIN UDS
- ✓ Windows Linux
- ✓ TSMaster license

12.4

	4 *CANFD / 2 *LIN
PC	USB2.0
	SCSI - 26 Pin
	Windows Linux
	1000 CAN
CAN	CAN2.0A/B ISO11898-1 125Kbps-1Mbps
CANFD	ISO ISO CAN FD 125Kbps-8Mbps
LIN	LIN1.3 LIN2.x 0-20Kbps
	LDF
	1us
*	20000 /
*	20000 /
	CAN DC2500V
	USB +DC
	5W
	10% 90%

12.5

USB	CAN	4.8	5.0	5.2	V
DC	CAN	9	12	32	V

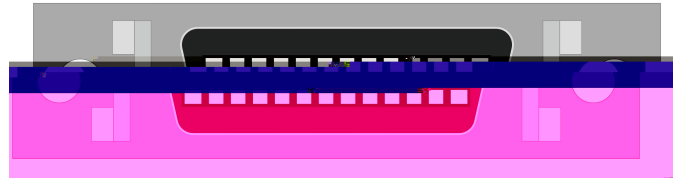
08r

电话:

邮

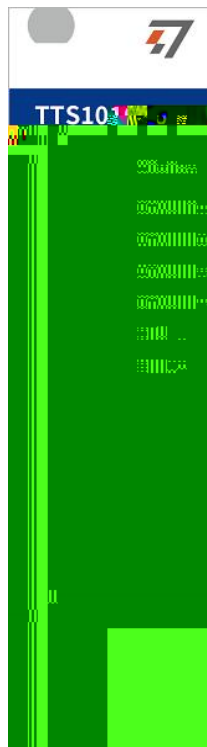
CPA (E) W W 6
2 9

12.



Pi n 1	CAN_Shi el d	Pi n 2	GND
Pi n 3	CAN1_L	Pi n 4	CAN1_H
Pi n 5	CAN2_L	Pi n 6	CAN2_H
Pi n 7	CAN_Shi el d	Pi n 8	GND
Pi n 9	CAN3_L	Pi n 10	CAN3_H
Pi n 11	CAN4_L	Pi n 12	CAN4_H
Pi n 13	CAN_Shi el d	Pi n 14	GND
Pi n 15	LI N1	Pi n 16	GND
Pi n 17	LI N2	Pi n 18	GND
Pi n 19	VCC	Pi n 20	GND

12.



Status	
CAN 1~4	CANFD
LI N 1~2	LI N

Status	
CAN	CANFD
CAN	CANFD
LI N	LI N
LI N	LI N

12.

TCA00011 CAN

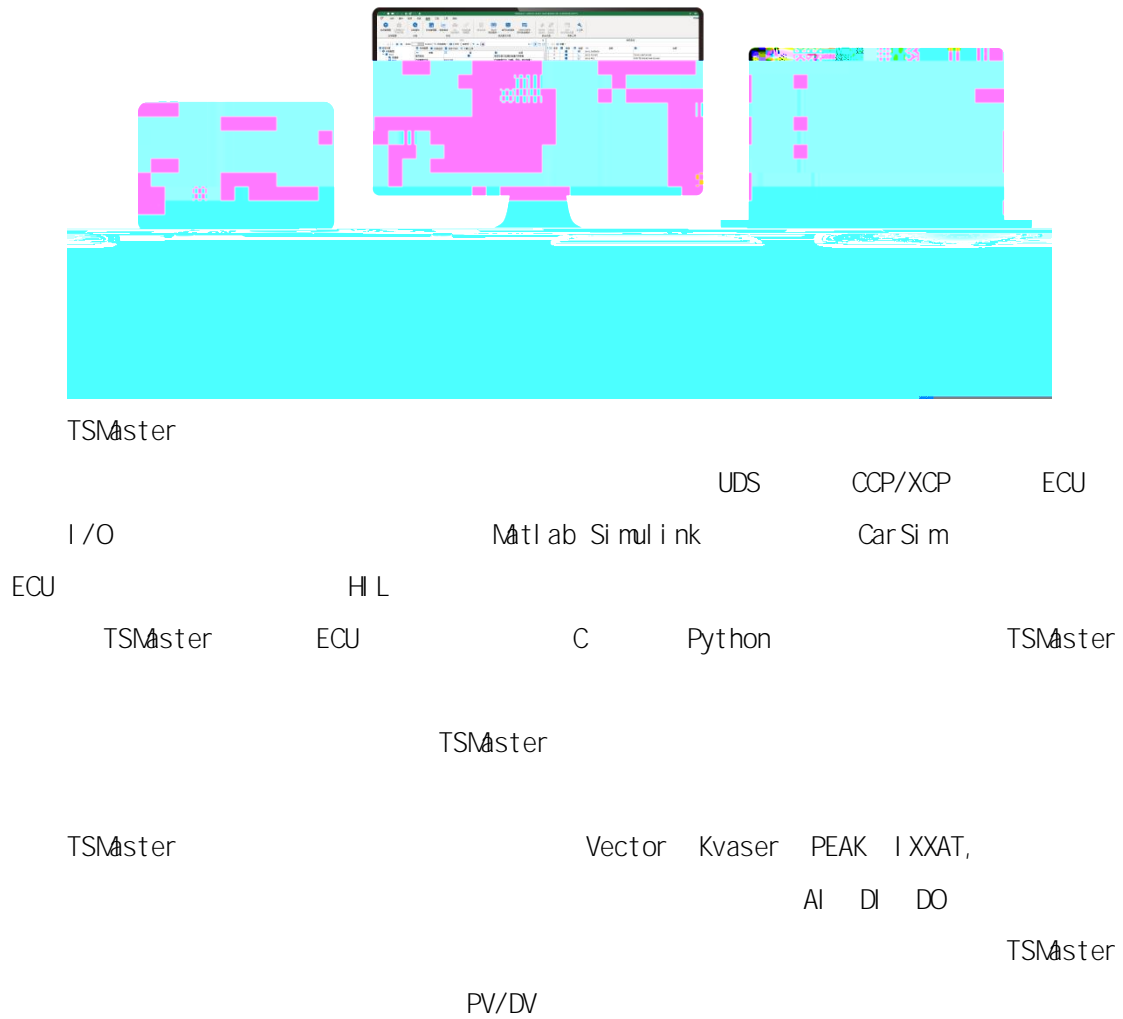
13. 012

14. 20

15. 516

16.

16.1



16.2

<https://www.tosunai.com/downloads/>



PC

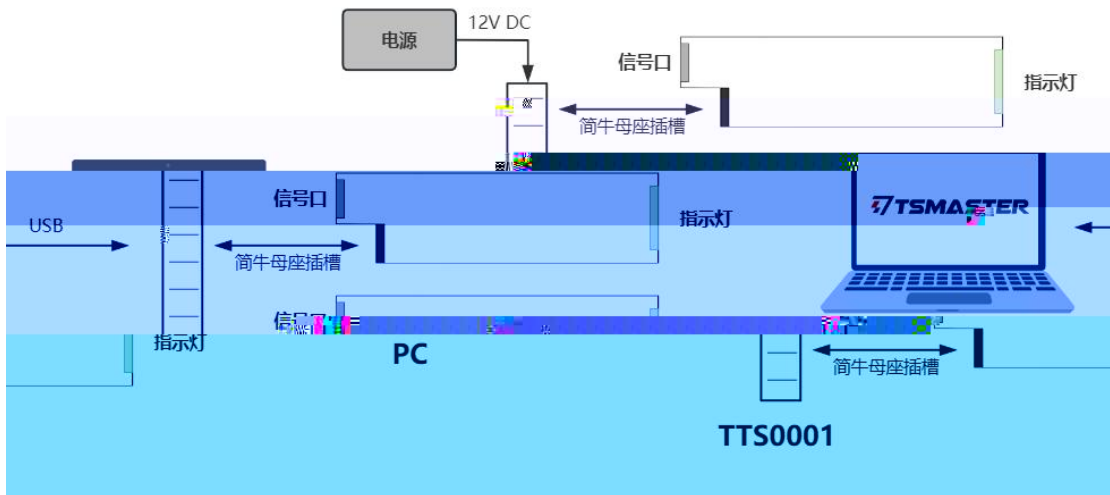


16.3

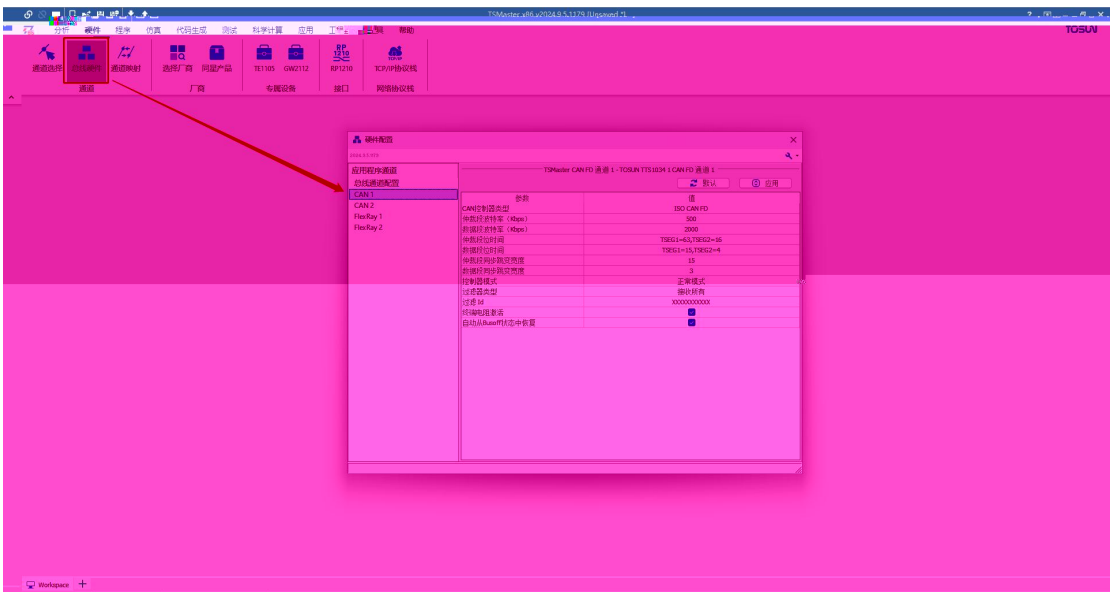
16.3.1

TTS1018 TTS1026P TTS1034 TTS1016Pro
TTS0001 TTS0001 TTS0001

TTS0001
USB



TSMaster



TSMaster

ECU

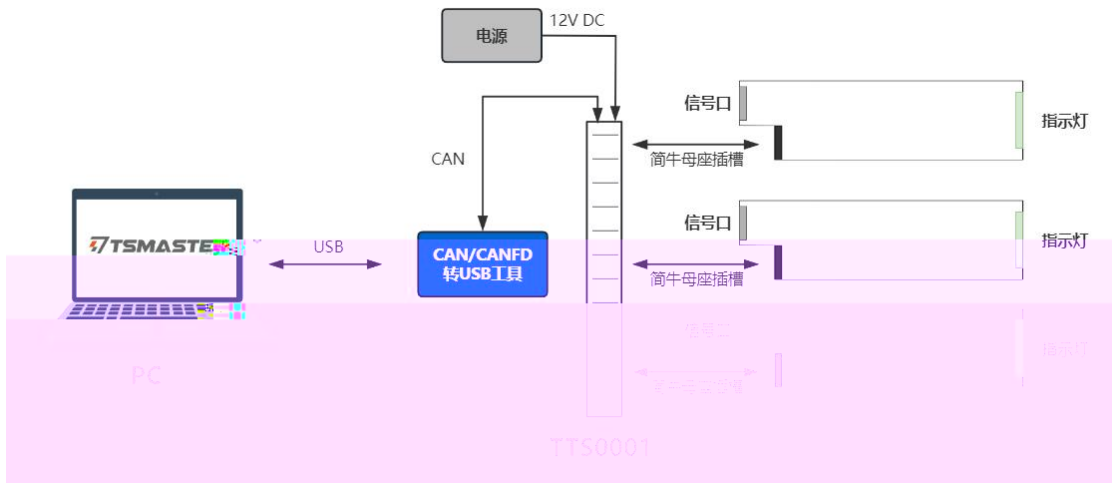
TSMaster

TSMaster

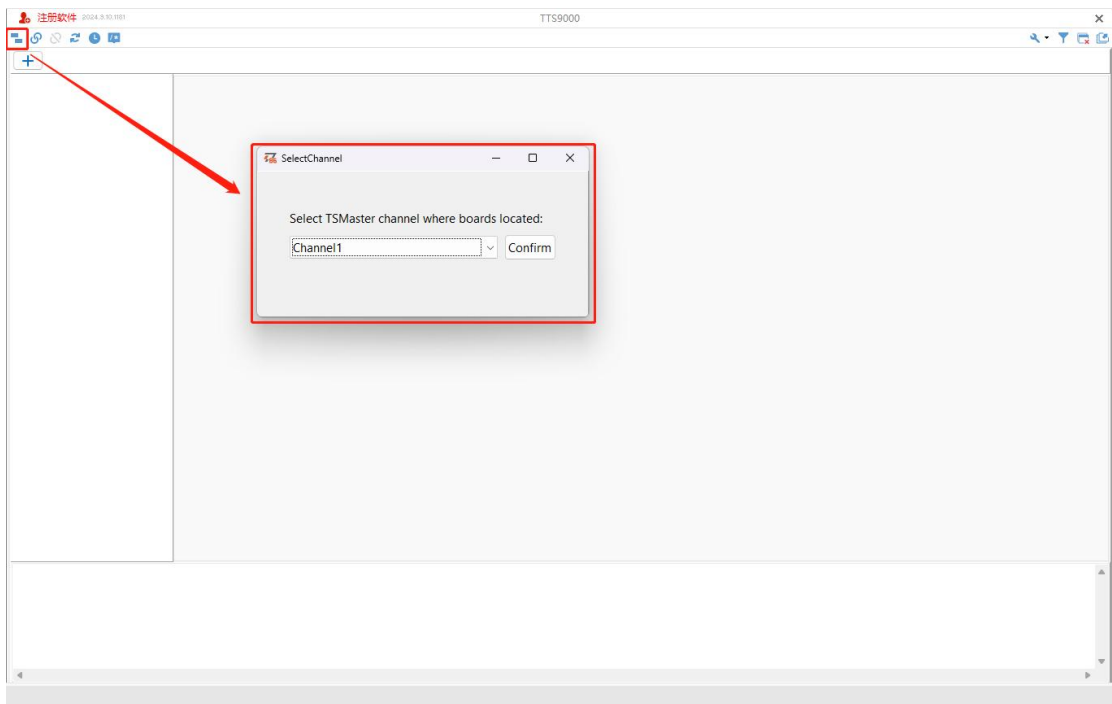
16.3.2

TTS9011 TTS9015 TTS9021 TTS9036 TTS9045

TTS0001 TTS0001 TTS0001 CAN CAN/CANFD
 USB CAN/CANFD CAN



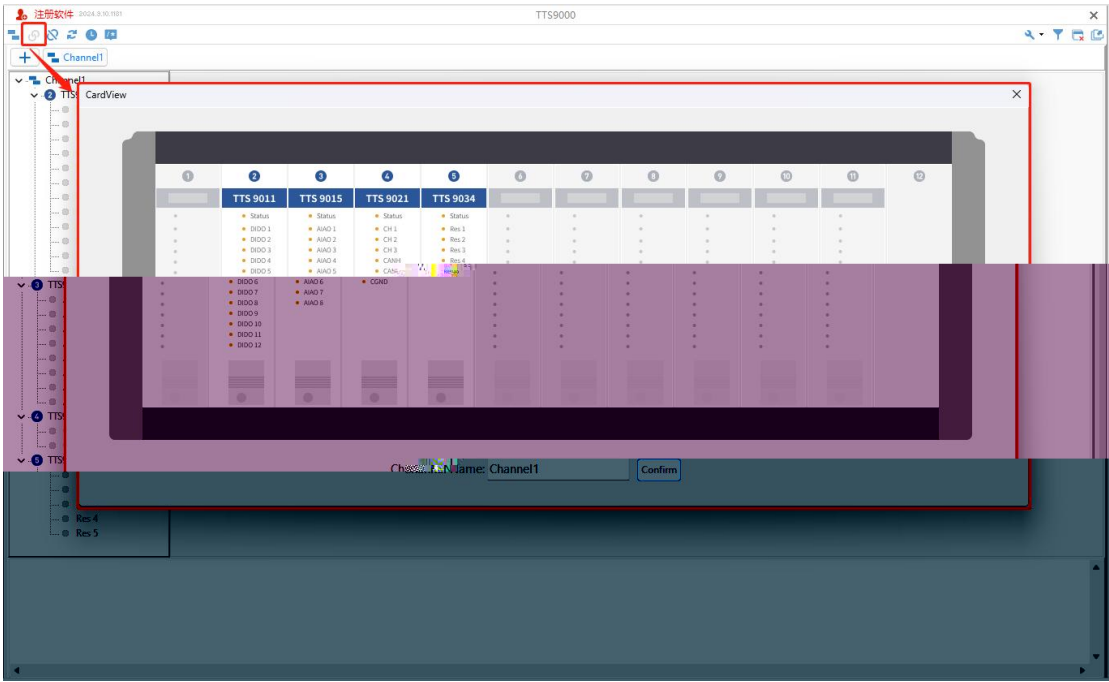
CAN



电话:

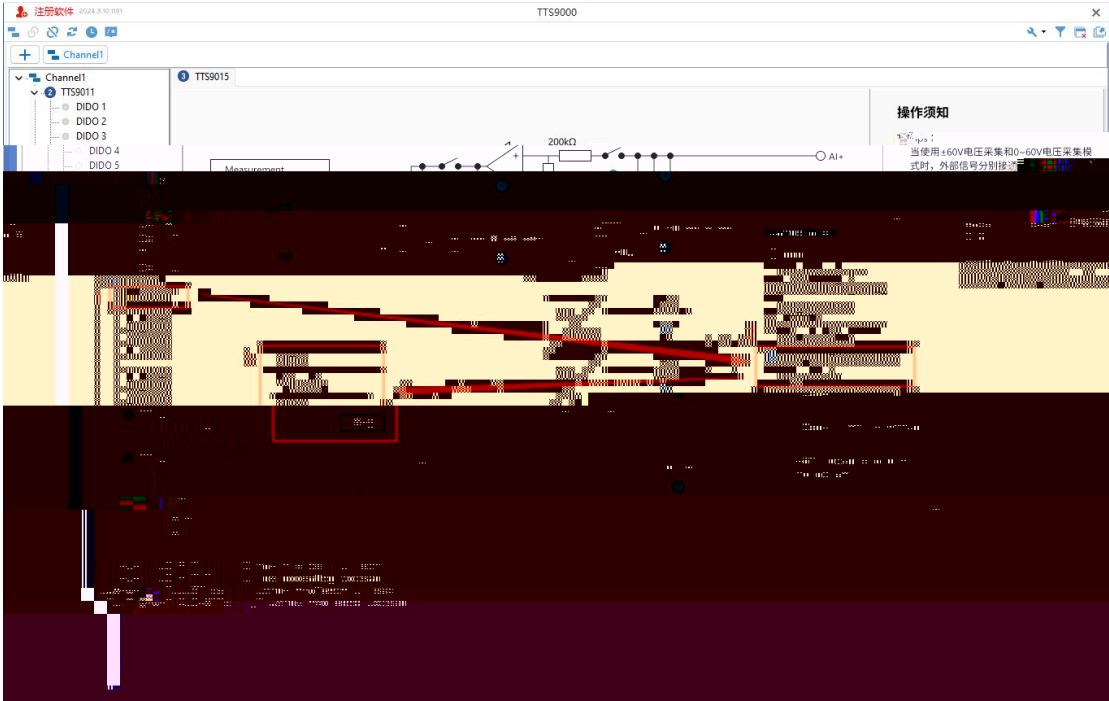
邮箱:

TTS



1 TTS9015 1 30V TTS9015

0-60V 30V



TTS

API

CAN

TTS

ID

ID



XX

00	
08	
18	

0N

00	1
01	2
02	3
03	4
...	
0F	16

YY

18/19	TTS9011
06	TTS9015
14	TTS9021
1B	TTS9036
03	TTS9045

ZZ

TTS9015	26	
	04	
	27	
	25	
	61	/

电话:

邮箱:

TTS9021	04	
	62	/
TTS9036	61	
	04	
	29	
	28	
TTS9045	04	
	0E	
	0D	
TTS9011	18 04	
	18 07	
	18 1C	PWM
	18 19	PWM
	18 12	PWM
	18 61	1~6
	19 06	
	19 05	
	19 04	
	19 1B	PWM
	19 18	PWM
	19 1A	PWM
	19 17	PWM
	19 11	PWM
	19 10	PWM
	19 61	7-12

TSMaster

TTS

TTS9011

TSMaster

TTS9011

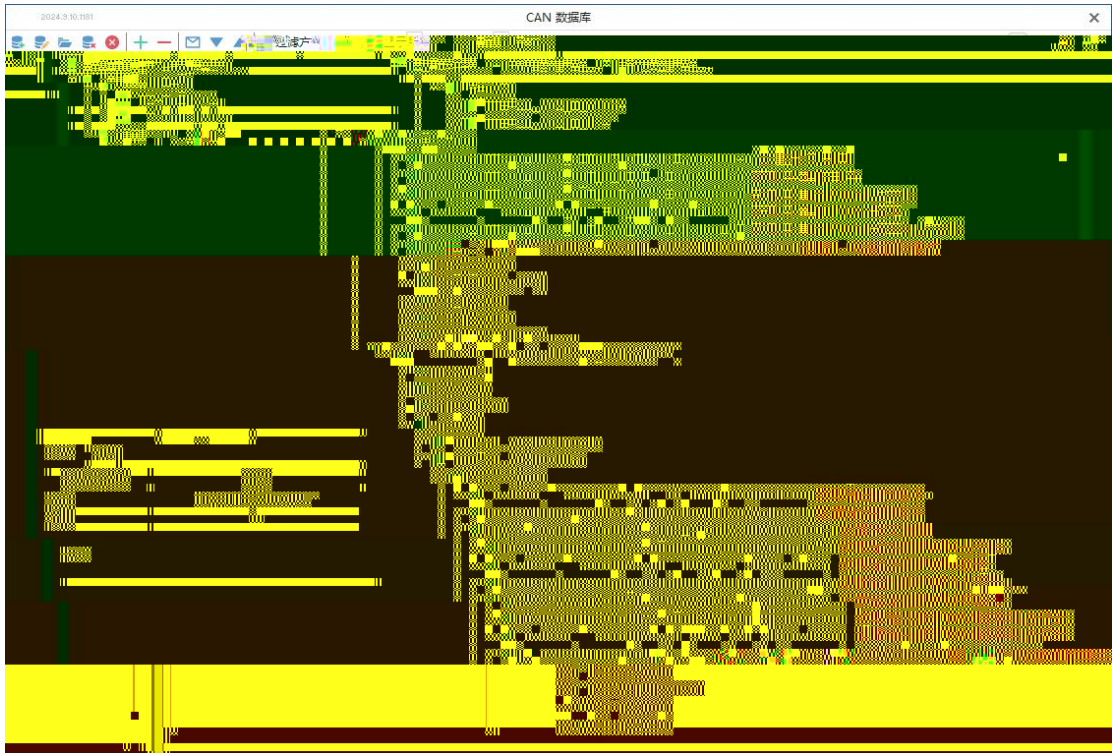
CAN

2024.9.10.001 CAN / CAN FD 报文信息

绝对时间	计数	通道	标识符	帧态	报文名称	数据长度	RPS	FSI	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14
599.324689	18553	C...	18011863x	11	TTS9011_N02_R...	数据帧	Rx	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
599.324834	18554	C...	18011856x	9	TTS9011_N02_R...	数据帧	Rx	8	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
599.324979	18555	C...	18011857x	9	TTS9011_N02_R...	数据帧	Rx	8	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
599.425125	18556	C...	18011858x	9	TTS9011_N02_R...	数据帧	Rx	8	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
599.323862	18547	C...	18011859x	9	TTS9011_N02_R...	数据帧	Rx	8	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
599.424831	18564	C...	1801185Ax	9	TTS9011_N02_R...	数据帧	Rx	8	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
599.424973	18565	C...	1801185Dx	9	TTS9011_N02_R...	数据帧	Rx	8	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
599.425118	18566	C...	1801185Ex	9	TTS9011_N02_R...	数据帧	Rx	8	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
599.423855	18557	C...	1801185Fx	9	TTS9011_N02_R...	数据帧	Rx	8	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
599.423961	18558	C...	18011809x	9	TTS9011_N02_R...	数据帧	Rx	4	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
599.423792	18558	C...	18011863x	11	TTS9011_N02_R...	数据帧	Rx	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CAN

TTS9011



电话:

邮箱:

API

API

HL

TTS9011

API

PWM

```
tscard_connect,
tscard_connect_by_serial,
tscard_check_card_is_ready_by_id,
tscard_new_card_by_id,
tscard_remove_card,
tscard_enable_cyclic_report_sync,
tscard_enable_cyclic_report_async,
//I/O Function
tscard_set_io_level_sync,
tscard_set_io_level_async,
tscard_set_io_level_signal_async,
tscard_turn_on_led,
tscard_read_di_chn_sync,
//I/O PWM
tscard_read_pwm_async,
tscard_set_pwm_frequency_and_duty_sync,
tscard_set_pwm_frequency_and_duty_async,
tscard_set_pwm_frequency_sync,
tscard_set_pwm_frequency_async,
tscard_read_di_async,
```

API

TSMaster

API

-



1 .

TTS

6

		USB +5V DC +12V DC	USB /
	()	-40 ~+80	
	()	10%-90%	

电话:

邮箱:

