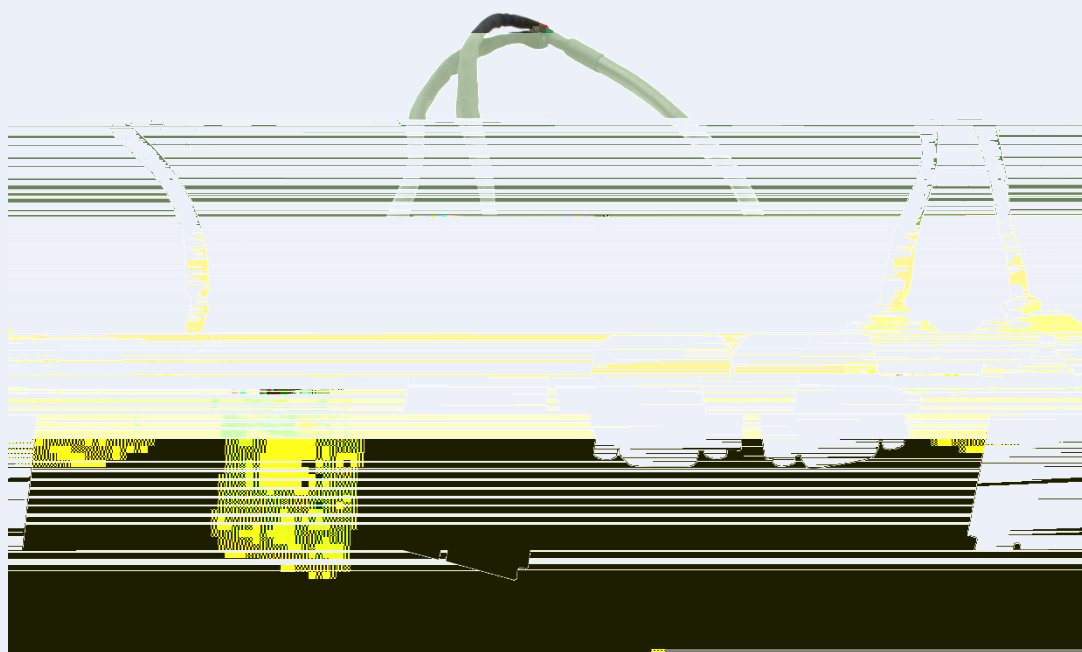




User Manual



TC3014

CAN FD * 4

Copyright Information

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The TC3014 is a multi-channel CAN/CAN FD communication tool based on SocketCAN.

It features four independent and isolated CAN/CAN FD interfaces, enabling CAN communication as easily and efficiently as network programming.

The device supports CAN FD bus speeds up to 5Mbps (optionally up to 8Mbps), connects to the host via a Mini PCIe interface, and provides a fully compatible Linux driver, ensuring excellent system integration and stability.

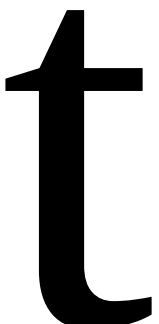
Equipped with a China-made main control chip, TC3014 supports full localization configurations and enables real-time monitoring of multiple bus networks simultaneously.

Its compact design allows for easy integration into in-vehicle industrial PCs, single-board computers, portable industrial hosts, and rugged notebooks, offering flexible installation and deployment.

PC Interface	Mini PCIe interface (USB channel)
Driver	Linux driver support
Buffer	Hardware buffer
Connector	Standard D-Sub, 9-pin
CAN	Supports CAN 2.0 A/B protocols (ISO 11898-1 compliant); baud rate 125Kbps ~ 1Mbps
CAN FD	Supports both ISO and non-ISO CAN FD standards; baud rate 125Kbps ~ 5Mbps (8Mbps optional)
Power Supply	Powered via Mini PCIe
Power Consumption	2W

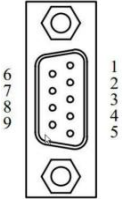
Sample Point Range

Adjustable from 70% ~ 90%



10f 30



	CAN FD 1/3	PIN2	CANFD1_Low	CAN FD 2/4	PIN2	CANFD2_Low
		PIN1	CANFD1_GND		PIN1	CANFD2_GND
		PIN4	CANFD3_Low		PIN4	CANFD4_Low
		PIN5	CANFD_Shield		PIN5	CANFD_Shield
		PIN7	CANFD1_High		PIN7	CANFD2_High
		PIN8	CANFD3_High		PIN8	CANFD4_High
		PIN9	CANFD3_GND		PIN9	CANFD4_GND

Operating System: Linux (official driver provided; compatible with mainstream distributions and Loongson Kylin OS)

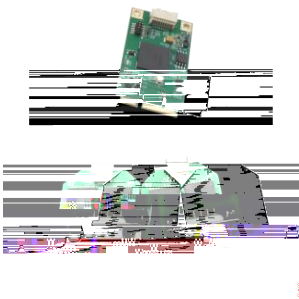
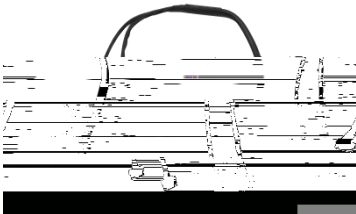
Kernel header package for the corresponding version

GCC compiler

Makefile build environment

Shell (supported sh scripts)



		 Two circuit boards are shown. The top board is green and the bottom board is purple. Both boards have various electronic components and connectors.	
		 A metal enclosure, likely a rack-mountable unit, is shown. It has a handle on top and a latch on the front.	

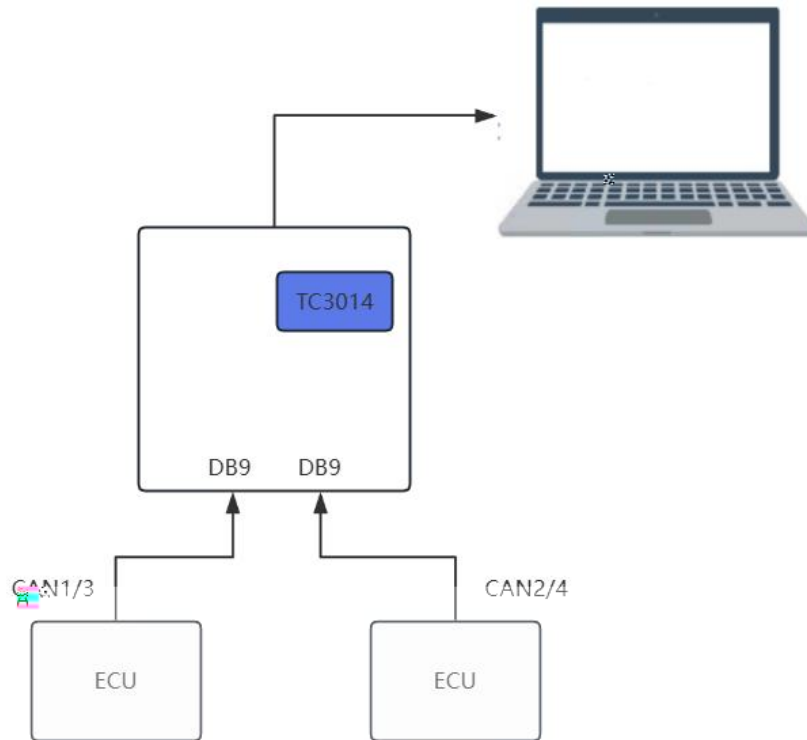


Figure 2-1 Example in Linux

The TC3014 provides a Linux driver with excellent system compatibility.

1. Install the kernel header package for your system version (with CAN device support).
2. Install the GCC compiler.
3. Ensure Makefile support is available.
4. Enable shell script (.sh) execution environment.

1. Copy the user directory to the Linux environment and enter the directory.

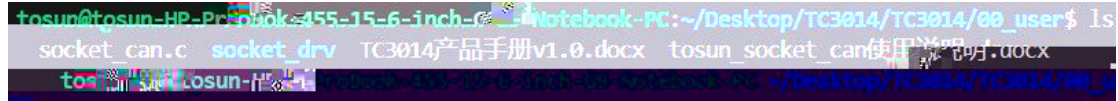


Figure 2-2 User Directory

2. Enter the socket_drv folder and run make to compile the driver. The generated file is tosun_socket_can.ko.



Figure 2-3 Example Figure1

3. Run make install to load can_dev and hid dependencies,

```

root@kylin:/home/kylin/user/app# ip link show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN mode DEFAULT group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
2: canv: <NOARP,ECHO> mtu 16 qdisc noop state DOWN mode DEFAULT group default qlen 10
    link/can
3: can1: <NOARP,ECHO> mtu 16 qdisc noop state DOWN mode DEFAULT group default qlen 10
    link/can
4: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP mode DEFAULT group default qlen 1000
    link/ether a4:11:63:22:1b:53 brd ff:ff:ff:ff:ff:ff
5: eth1: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq state DOWN mode DEFAULT group default qlen 1000
    link/ether a4:11:63:22:1b:52 brd ff:ff:ff:ff:ff:ff
30: can2: <NOARP,UP,LOWER_UP> mtu 16 qdisc pfifo_fast state UP mode DEFAULT group default qlen 10
    link/can
31: can3: <NOARP,ECHO> mtu 16 qdisc noop state DOWN mode DEFAULT group default qlen 10
    link/can
32: can4: <NOARP,ECHO> mtu 16 qdisc noop state DOWN mode DEFAULT group default qlen 10
    link/can
33: can5: <NOARP,ECHO> mtu 16 qdisc noop state DOWN mode DEFAULT group default qlen 10
    link/can

```

Figure 2-6 Example Figure4

5. To uninstall the driver, run make uninstall.

TC3014 functions as a standard SocketCAN device, fully compatible with the Linux SocketCAN subsystem API.

Official Documentation: For complete SocketCAN APIs, concepts, and usage, refer to the official Linux kernel documentation: Linux source tree
/Documentation/networking/can.rst

(Online version: <https://www.kernel.org/doc/html/latest/networking/can.html>)

Practical Tutorial: For beginners, third-party resources such as SocketCAN Wikipedia provide a quick overview of key concepts.

The examples in this document assume a basic understanding of SocketCAN.



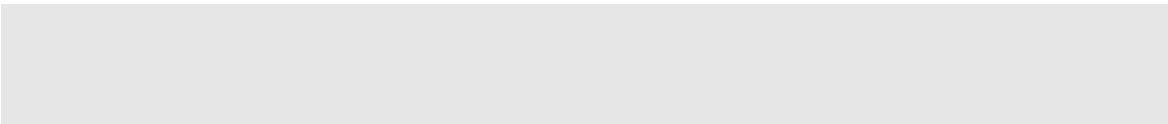
Please refer to *TOSUN-SOCKET_CAN User Guide_V1.0.0* for details.



TOSUN-SOCKET_CAN User Guide_V1.0.0

The TC3014 primarily contains semiconductor components, which typically have a long service life. However, adverse environmental conditions may accelerate aging and degrade performance. To ensure proper operation, regular inspections are recommended to maintain the required environmental conditions.

It is recommended to inspect the device at least once every 6 to 12 months. In harsher environments, inspections should be performed more frequently. Refer to the table below for inspection criteria and recommended actions. If is not



Contamination	Check for accumulation of dust, powder, salt, and None metal debris	Clean the device and prevent future
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