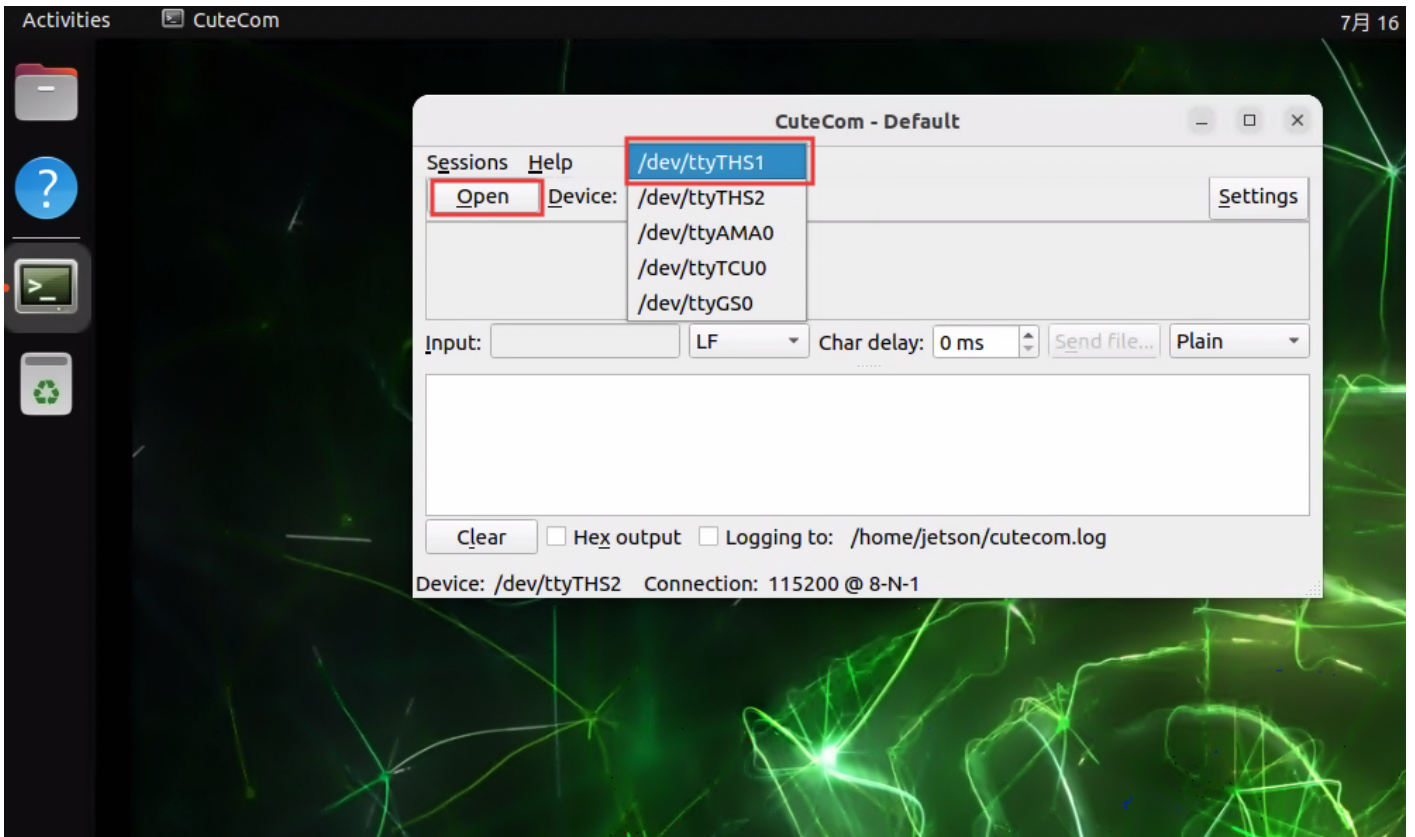


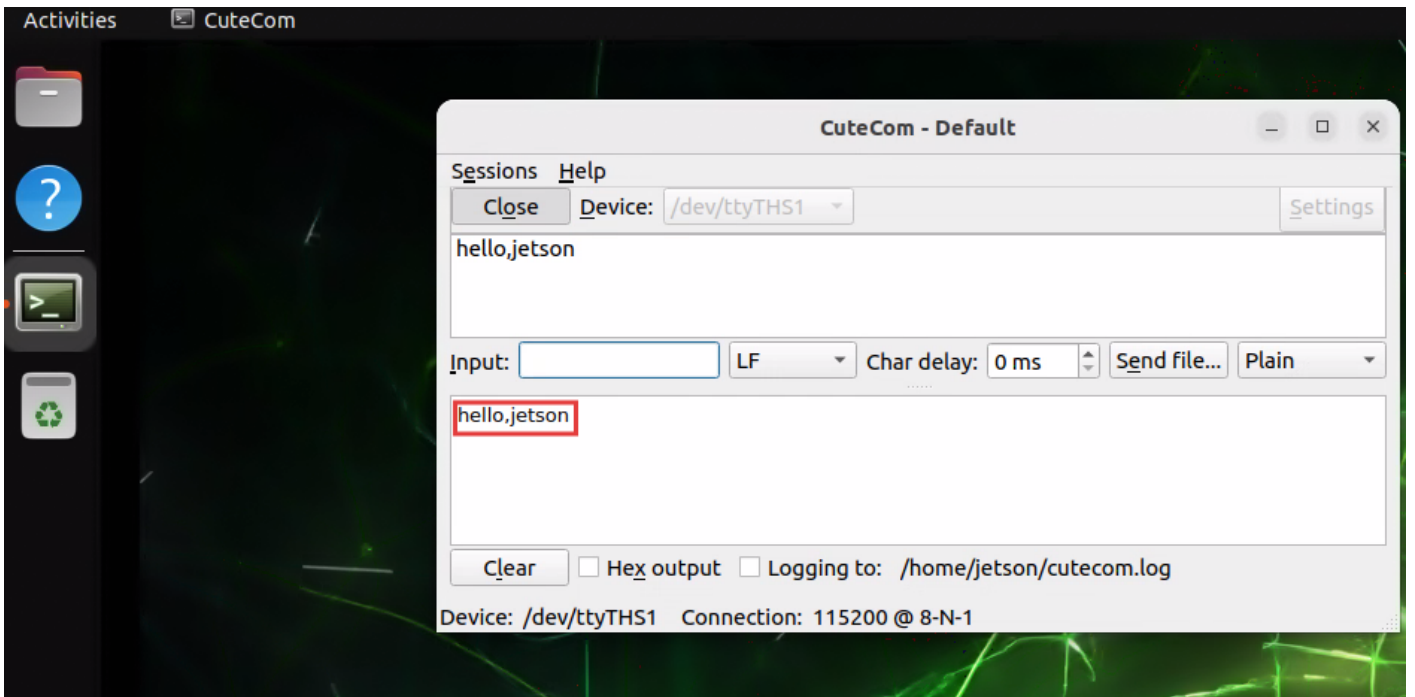


```
sudo usermod -aG dialout $USER
```

- `cutecom` `ttyTHS1`



- `hello, jetson`



## 1.2 ?? python ?? UART

- `hello, jetson`

```
sudo chmod 777 /dev/ttyTHS1
```

- `pip install pyserial`

```
pip install pyserial
```

- `pyserial`

```
import serial
import time

PORT = "/dev/ttyTHS1"
BAUDRATE = 115200
ENCODING = "UTF-8"
MESSAGE = "hello,jetson\r\n"

try:
    with serial.Serial(PORT, BAUDRATE, timeout=2) as se:
        print(f"Serial port {PORT} opened: {se.is_open}")
        while True:
            se.write(MESSAGE.encode(ENCODING))
            print(f"Sent: {MESSAGE.strip()}")
            try:
                line = se.readline().decode(ENCODING).strip()
                if line:
                    print(f"Received: {line}")
            except Exception as e:
                print(f"Read error: {e}")
            time.sleep(1)
except serial.SerialException as e:
    print(f"Serial error: {e}")
except KeyboardInterrupt:
    print("\nExit by user.")
```





```
spi.close()
```

```
■■■■■■■■
```

```
(test) jetson@ubuntu:~/Downloads$ python test_spi.py
recived:[11]
recived:[22]
recived:[33]
```

## 3. I<sup>2</sup>C??

- ■■ i2c■■

```
sudo apt install i2c-tools
```

- ■■■■■■■■ i2c■■■■

```
jetson@jetson-desktop:~$ i2cdetect -l
i2c-0  i2c          3160000.i2c          I2C adapter
i2c-1  i2c          c240000.i2c          I2C adapter
i2c-2  i2c          3180000.i2c          I2C adapter
i2c-4  i2c          Tegra BPMP I2C adapter I2C adapter
i2c-5  i2c          31b0000.i2c          I2C adapter
i2c-7  i2c          c250000.i2c          I2C adapter
i2c-9  i2c          NVIDIA SOC i2c adapter 0 I2C adapter
```

- ■■■■■■■■■■ i2c■■■

```
jetson@jetson-desktop:~$ i2cdetect -y -r -a 7
    0  1  2  3  4  5  6  7  8  9  a  b  c  d  e  f
00: 00  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
10:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
20:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
30:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
40:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
50:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
60:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
70:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
```

- ■■■■ i2c■■■■

```

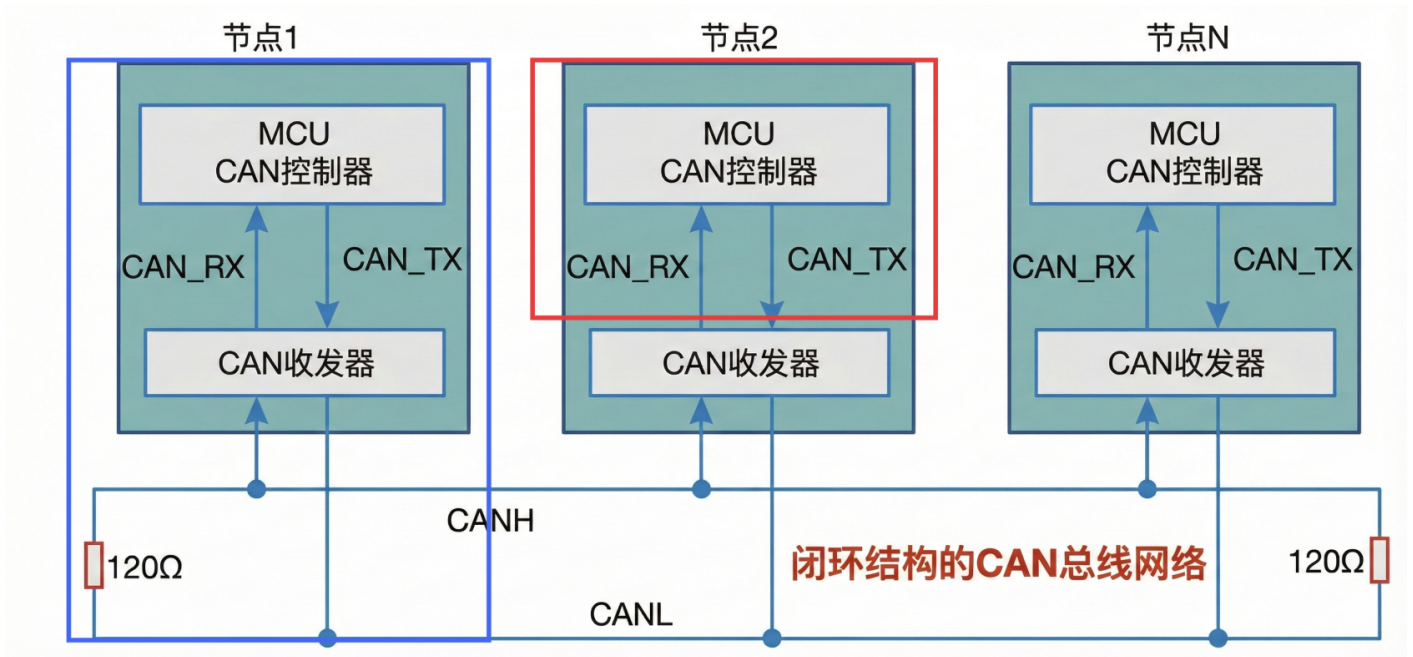
i2cdetect -y -r -a 7
    0  1  2  3  4  5  6  7  8  9  a  b  c  d  e  f
00:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
10:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
20:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
30:  --  --  --  --  --  --  --  --  --  --  --  3c  --  --  --  --
40:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
50:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
60:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --
70:  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --  --

```

# 4. CAN??

C1901/C1902  C2401

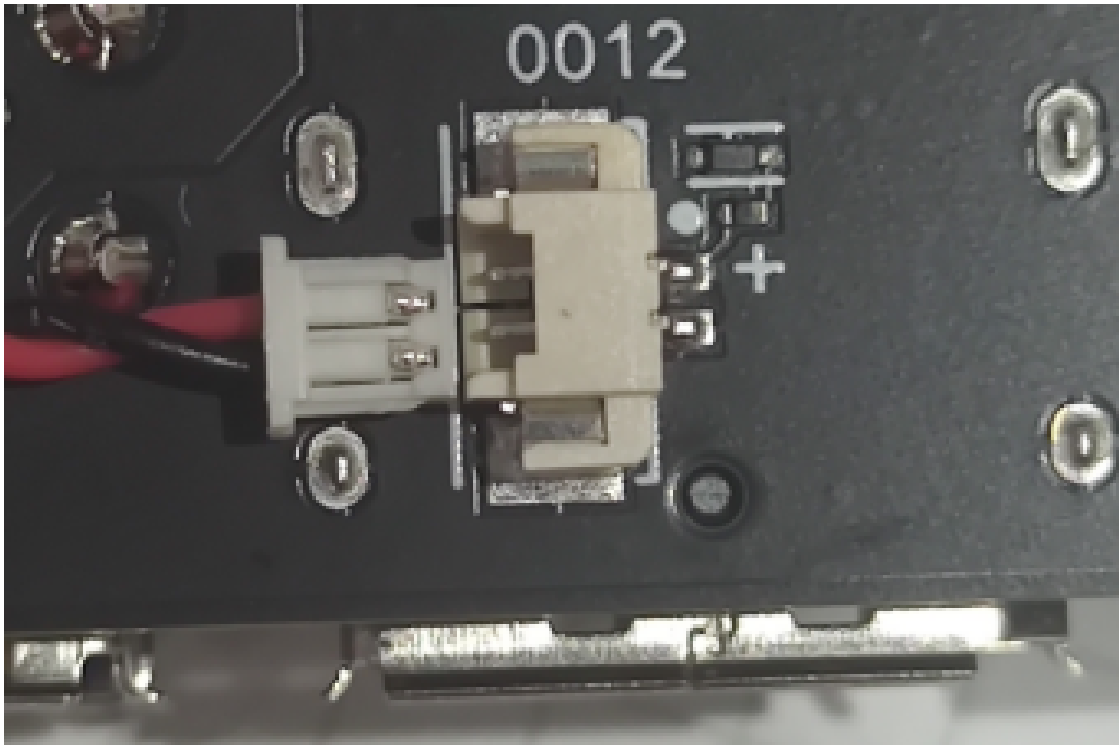
C2401  C1901/1902



C1901/1902  CAN  CAN\_TX, CAN\_RX







- 

```
timedatectl status
```

- 

```
sudo apt install ntpdate  
sudo ntpdate cn.pool.ntp.org
```

- 

```
sudo timedatectl set-timezone Asia/Shanghai
```

- RTC

```
sudo hwclock --systohc --utc --rtc /dev/rtc0 --noadjfile
```

- RTC

```
sudo hwclock --show --utc --rtc /dev/rtc0 --noadjfile
```

- RTC

### 1. [ ] [ ] [ ] [ ]

```
sudo vi /lib/systemd/system/hwrtc.service
```

### 2. [ ] [ ] [ ] [ ] [ ] [ ]

```
[Unit]
Description=Synchronise System clock to hardware RTC
DefaultDependencies=no
After=systemd-modules-load.service
Before=systemd-journald.service systemd-fsck-root.service time-sync.target sysinit.target
shutdown.target
Conflicts=shutdown.target

[Service]
Type=oneshot
RemainAfterExit=yes
ExecStart=/sbin/hwclock --hctosys --utc --rtc /dev/rtc0 --noadjfile
RestrictRealtime=yes

[Install]
WantedBy=sysinit.target
```

### 3. [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

```
sudo systemctl enable hwrtc.service
```

- [ ] [ ] RTC [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

```
sudo hwclock --hctosys --utc --rtc /dev/rtc0 --noadjfile
```

- [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

```
sudo timedatectl set-ntp false
```

---

[ ] [ ] #16

[ ] edit [ ] [ ] 26 [ ] 2025 15:59:05

[ ] edit [ ] [ ] 12 [ ] 2026 08:44:37