

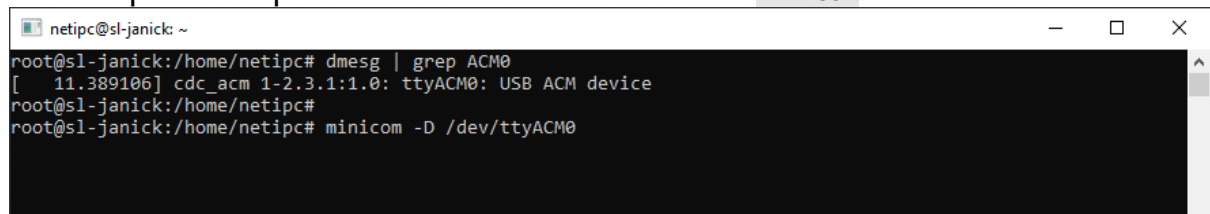
Quick guide,

How to access GNSS data on Syslogic computers in use with Debian Linux.

u-blox NEO-M8U:

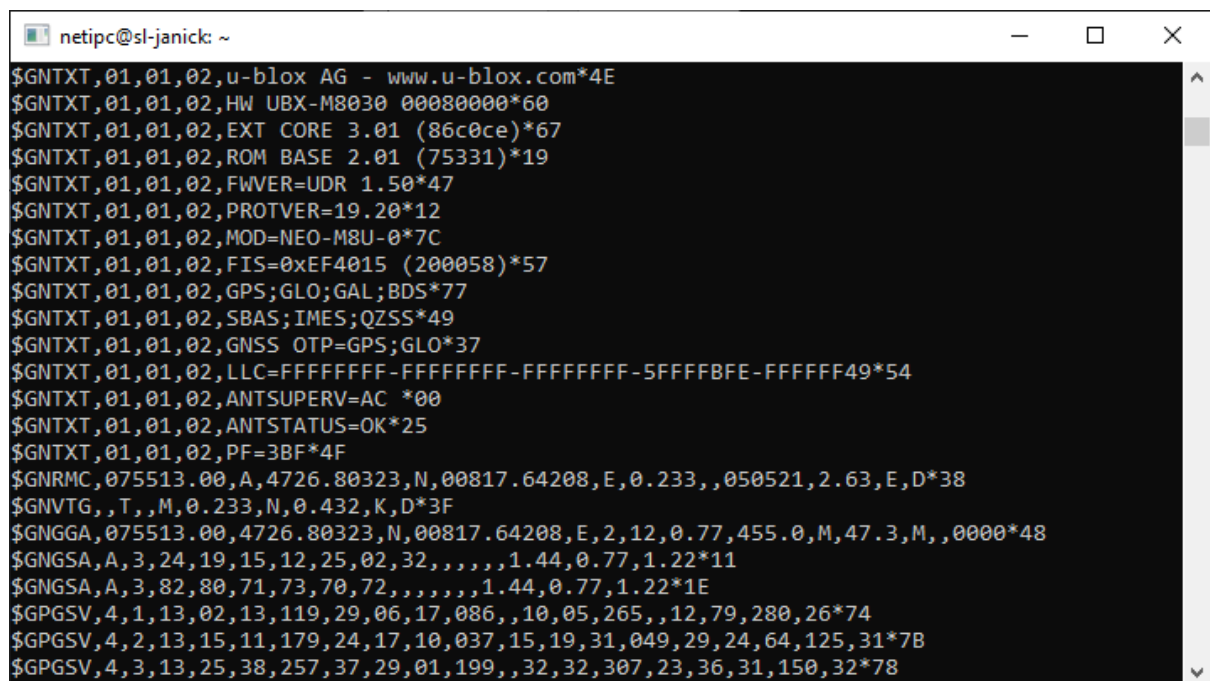
1. With the u-Blox NEO-M8U a new `/dev/ttyACM0` USB communication device (CDC) is created after boot. The GNSS NMEA¹ data is displayed on this `/dev/ttyACM0` interface. The position determination starts directly after the automatic loading of the drivers.

The NMEA port can be opened with terminal emulation software like `minicom`.



```
netipc@sl-janick: ~
root@sl-janick:/home/netipc# dmesg | grep ACM0
[ 11.389106] cdc_acm 1-2.3.1:1.0: ttyACM0: USB ACM device
root@sl-janick:/home/netipc#
root@sl-janick:/home/netipc# minicom -D /dev/ttyACM0
```

Figure 1: access NEMA port `/dev/ttyACM0` with `minicom`



```
netipc@sl-janick: ~
$GNTXT,01,01,02,u-blox AG - www.u-blox.com*4E
$GNTXT,01,01,02,HW UBX-M8030 00080000*60
$GNTXT,01,01,02,EXT CORE 3.01 (86c0ce)*67
$GNTXT,01,01,02,ROM BASE 2.01 (75331)*19
$GNTXT,01,01,02,FWVER=UDR 1.50*47
$GNTXT,01,01,02,PROTVER=19.20*12
$GNTXT,01,01,02,MOD=NEO-M8U-0*7C
$GNTXT,01,01,02,FIS=0xEF4015 (200058)*57
$GNTXT,01,01,02,GPS;GLO;GAL;BDS*77
$GNTXT,01,01,02,SBAS;IMES;QZSS*49
$GNTXT,01,01,02,GNSS OTP=GPS;GLO*37
$GNTXT,01,01,02,LLC=FFFFFFFF-FFFFFFFF-FFFFFFFF-5FFFFFFE-FFFFFF49*54
$GNTXT,01,01,02,ANTSUPERV=AC *00
$GNTXT,01,01,02,ANTSTATUS=OK*25
$GNTXT,01,01,02,PF=3BF*4F
$GNRMC,075513.00,A,4726.80323,N,00817.64208,E,0.233,,050521,2.63,E,D*38
$GNVTG,,T,,M,0.233,N,0.432,K,D*3F
$GNGGA,075513.00,4726.80323,N,00817.64208,E,2,12,0.77,455.0,M,47.3,M,,0000*48
$GNGSA,A,3,24,19,15,12,25,02,32,,,,,1.44,0.77,1.22*11
$GNGSA,A,3,82,80,71,73,70,72,,,,,1.44,0.77,1.22*1E
$GPGSV,4,1,13,02,13,119,29,06,17,086,,10,05,265,,12,79,280,26*74
$GPGSV,4,2,13,15,11,179,24,17,10,037,15,19,31,049,29,24,64,125,31*7B
$GPGSV,4,3,13,25,38,257,37,29,01,199,,32,32,307,23,36,31,150,32*78
```

Figure 2: NMEA data is displayed as shown in the picture

¹ NMEA is a specification that defines the communication of GPS receivers.

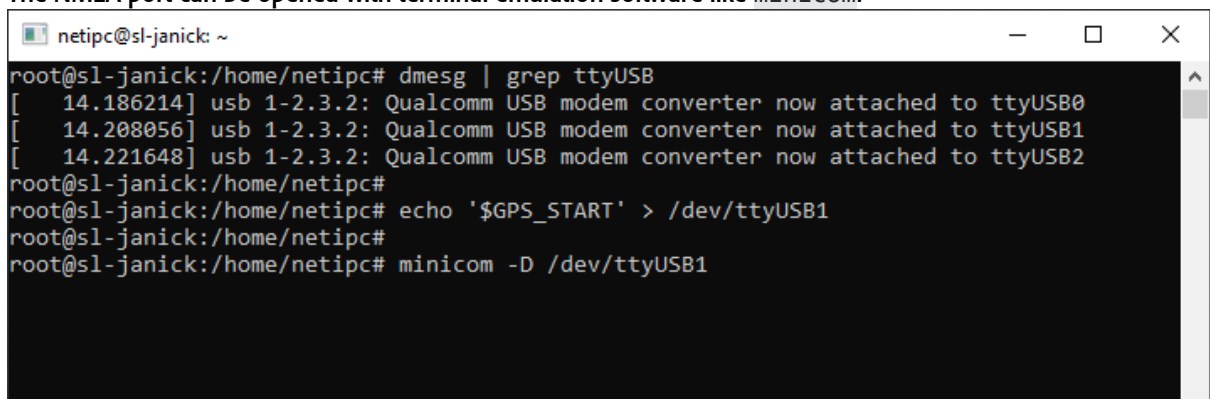
Sierra Wireless MC7455:

1. With the Sierra Wireless MC7455 several new `/dev/ttyUSBx` devices are created after boot. The GNSS NMEA data is displayed on the `/dev/ttyUSB1` interface. The position determination **does not** start directly after the automatic loading of the drivers.

Port	Is used for:
<code>/dev/ttyUSB0</code>	Diagnostic monitoring (DM)
<code>/dev/ttyUSB1</code>	GNSS NMEA data
<code>/dev/ttyUSB2</code>	Modem AT Commands

Table 1: MC7455 ttyUSBx interfaces

2. The NMEA Data stream must be enabled with `echo '$GPS_START' > /dev/ttyUSB1`. The NMEA port can be opened with terminal emulation software like `minicom`.

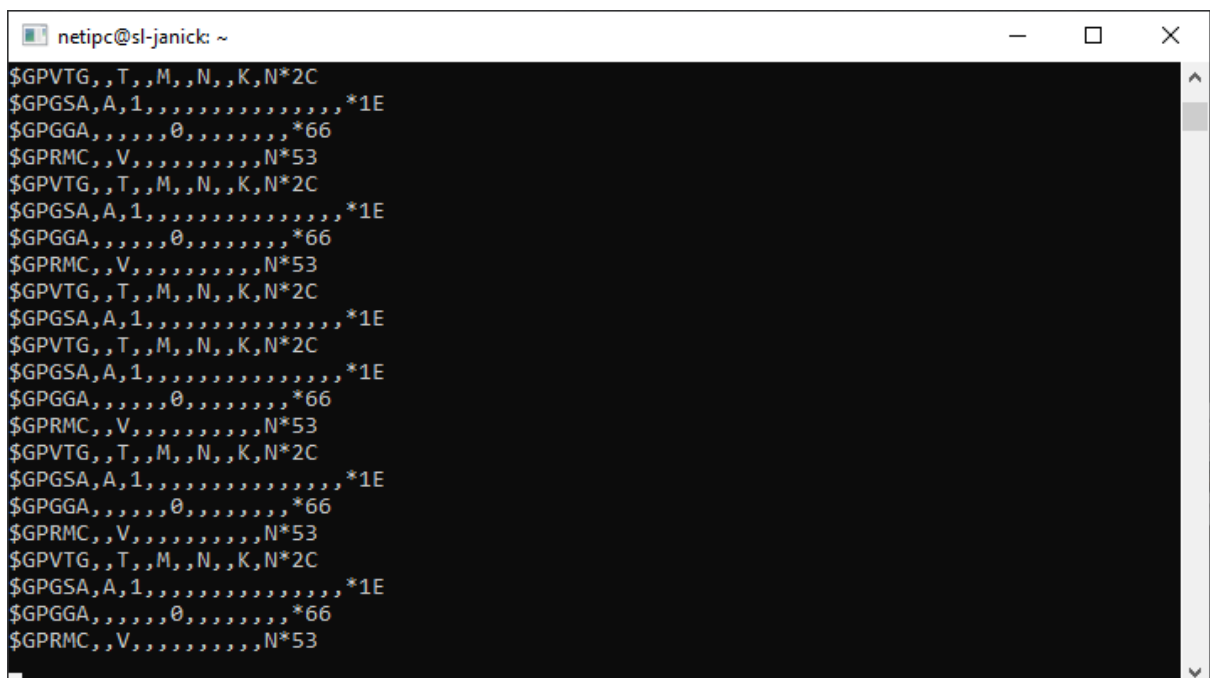


```

netipc@sl-janick: ~
root@sl-janick:/home/netipc# dmesg | grep ttyUSB
[ 14.186214] usb 1-2.3.2: Qualcomm USB modem converter now attached to ttyUSB0
[ 14.208056] usb 1-2.3.2: Qualcomm USB modem converter now attached to ttyUSB1
[ 14.221648] usb 1-2.3.2: Qualcomm USB modem converter now attached to ttyUSB2
root@sl-janick:/home/netipc#
root@sl-janick:/home/netipc# echo '$GPS_START' > /dev/ttyUSB1
root@sl-janick:/home/netipc#
root@sl-janick:/home/netipc# minicom -D /dev/ttyUSB1

```

Figure 3: access NEMA port `/dev/ttyUSB1` with `minicom`



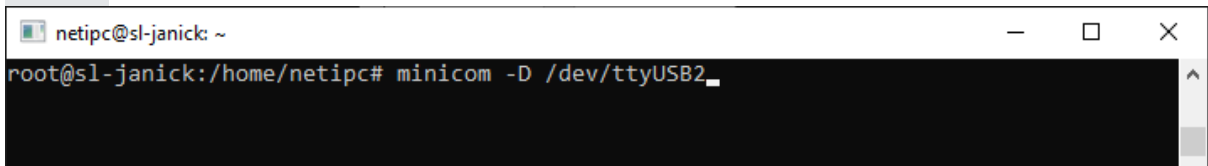
```

netipc@sl-janick: ~
$GPVTG,,T,,M,,N,,K,N*2C
$GPGSA,A,1,,,,,,,,,,,,,*1E
$GPGGA,,,,,0,,,,,,*66
$GPRMC,,V,,,,,,,,,N*53
$GPVTG,,T,,M,,N,,K,N*2C
$GPGSA,A,1,,,,,,,,,,,,,*1E
$GPGGA,,,,,0,,,,,,*66
$GPRMC,,V,,,,,,,,,N*53
$GPVTG,,T,,M,,N,,K,N*2C
$GPGSA,A,1,,,,,,,,,,,,,*1E
$GPGGA,,,,,0,,,,,,*66
$GPRMC,,V,,,,,,,,,N*53
$GPVTG,,T,,M,,N,,K,N*2C
$GPGSA,A,1,,,,,,,,,,,,,*1E
$GPGGA,,,,,0,,,,,,*66
$GPRMC,,V,,,,,,,,,N*53
$GPVTG,,T,,M,,N,,K,N*2C
$GPGSA,A,1,,,,,,,,,,,,,*1E
$GPGGA,,,,,0,,,,,,*66
$GPRMC,,V,,,,,,,,,N*53

```

Figure 4: NMEA data is displayed as shown in the picture

- Active and passive antenna GNSS antennas can be connected to the system. The DC voltage output for active GPS/GNSS antennas must be enabled via AT commands. To do so the Modem AT Command Port `/dev/ttyUSB2` must be opened with a terminal emulation software like `minicom`.



```
netipc@sl-janick: ~
root@sl-janick:/home/netipc# minicom -D /dev/ttyUSB2
```

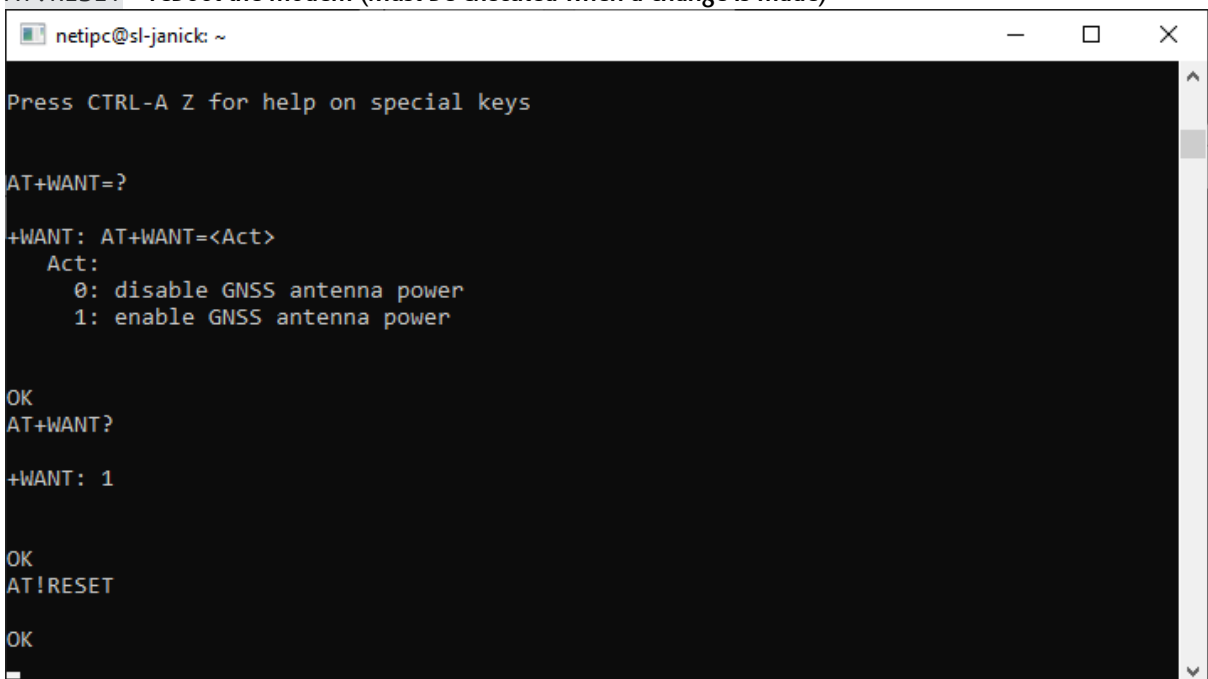
Figure 5: access AT command port `/dev/ttyUSB2` with `minicom`

`AT+WANT=1` – enable GNSS antenna power

`AT+WANT=0` – disable GNSS antenna power

`AT+WANT?` –check current value

`AT!RESET` – reboot the modem (Must be executed when a change is made)



```
netipc@sl-janick: ~
Press CTRL-A Z for help on special keys

AT+WANT=?
+WANT: AT+WANT=<Act>
  Act:
    0: disable GNSS antenna power
    1: enable GNSS antenna power

OK
AT+WANT?
+WANT: 1

OK
AT!RESET

OK
```

Figure 6: check `AT+WANT` AT command

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