

# GNSS

- [wonderful introduction on GNSS](#)
- [stations](#) that broadcast real time RTCM (protocol) Radio Technical Commission for Maritime
- [ubxtool examples](#)
- NEO-M9N
- ZED-F9P

## ntrip caster

- <https://gitlab.com/ihfazhillah/simple-ntrip-caster/-/tree/master>

test caster, must return source table

```
curl http://192.168.2.50:2101
```

## ntrip base station

configure ublox in NMEA

```
systemctl stop gpsd
systemctl stop gpsd.socket
```

```
DEVICE=/dev/gps0
ubxtool -f $DEVICE -p RESET
ubxtool -f $DEVICE -e NMEA
ubxtool -f $DEVICE -d BINARY
ubxtool -f $DEVICE -p SAVE
```

ntrip source

```
str2str -in 'serial://ttyACM0:115200#stq' -out
'ntrips://mev@localhost:2101/castagne#rtcm2' -p 45.4935250 011.1068889 421
-msg "1004,1006,1019,1033,1012,1030"
```

GPS

```
gpsd -N -n -D3 /dev/gps0 # no -b option
```

```
# with DGPS
gpsd -N -n -D3 /dev/gps0 ntrip://NTRIP.itsware.net:2101/AB50_RTCM3
psd -N -n -D1 /dev/gps0 ntrip://rtk2go.com:2101/MEV0
```

```
ubxtool -p MON-VER
```

```
UBX-MON-VER:
  swVersion EXT CORE 1.00 (61b2dd)
  hwVersion 00190000
  extension ROM BASE 0x118B2060
  extension FWVER=HPG 1.12
  extension PROTVR=27.11
  extension MOD=ZED-F9P
  extension GPS;GLO;GAL;BDS
  extension QZSS
```

```
export UBXOPTS="-P 27.11 -v 2"
ubxtool -p RESET
ubxtool -e BINARY
ubxtool -d NMEA
```

get current dynamic mode

```
ubxtool -p CFG-NAV5

...
dynModel (Portable)
...

# or
ubxtool -p CFG-NAV5 | grep dynModel
```

switch model to automotive

```
ubxtool -p MODEL,4
```

## udev

[/etc/udev/rules.d/91-ubox.rules](#)

```
#SUBSYSTEMS=="usb", DRIVERS=="usb", ACTION=="add",
ATTRS{idVendor}=="1546", ATTRS{idProduct}=="01a9", SYMLINK+="gps0",
MODE="0666"
ATTRS{idVendor}=="1546", ATTRS{idProduct}=="01a9", SYMLINK+="gps%n",
TAG+="systemd", ENV{SYSTEMD_WANTS}="gpsdctl@%k.service"
```

[/etc/default/gpsd](#)

```
START_DAEMON="false"
# binary mode for ublox
GPSD_OPTIONS="-b"
DEVICES=""
```

```
USBAUTO="true"
```

## test

- <https://gpsd.gitlab.io/gpsd/ppp-howto.html>

```
gpsd -b -N /dev/ttyACM0
```

```
gpspipe -r | nc -l 29999
```

```
yay -S qt5-location
```

qml

```
import QtQuick 2.1
import QtQuick.Window 2.0
import QtPositioning 5.5
import QtLocation 5.6

Window {
    id:page
    width: 1024
    height: 1024
    visible: true

    Map {
        id:myMap
        anchors.fill: parent
        plugin: mapPlugin
        zoomLevel: 23

        property MapCircle circle

        function update(pos) {
            removeMapItem(circle);

            circle = Qt.createQmlObject('import QtLocation 5.3; MapCircle {}',
page);
            circle.radius = 2;
            circle.color = "transparent";
            circle.border.color = "red"
            circle.border.width = 3;
            myMap.addMapItem(circle);

            circle.center = pos.coordinate;
            myMap.center = pos.coordinate;

            //console.log("Coordinates: ", pos.coordinate.latitude,
```

```
pos.coordinate.longitude);
    }
}

Plugin {
    id: mapPlugin
    name: "osm"
}

PositionSource {
    id: gpsPos
    updateInterval: 500
    active: true
    nmeaSource: "socket://localhost:29999"

    onPositionChanged: {
        myMap.update(position);
    }
}
}
```

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