

Dr. William J. Schmidt

From: radioartisan@groups.io on behalf of Mike K7MDL via groups.io
<k7mdl@hotmail.com@groups.io>
Sent: Thursday, November 6, 2025 5:31 PM
To: radioartisan@groups.io
Subject: Re: [radioartisan] GPS module for K3NG controller.
Attachments: TinyGPSwithGNSS.zip

Been a few years since I made the changes but this is what I think the relevant changes are

```
#define _GPRMC_TERM "GPRMC"  
#define _GPGBA_TERM "GPGBA"  
#define _GNRMC_TERM "GNRMC"  
#define _GNGBA_TERM "GNGBA"
```

Then when it evaluates the “first term” it will now accept either term.

```
// the first term determines the sentence type  
if (_term_number == 0)  
{  
    if (!gpsstrcmp(_term, _GPRMC_TERM) || !gpsstrcmp(_term, _GNRMC_TERM))  
        _sentence_type = _GPS_SENTENCE_GPRMC;  
    else if (!gpsstrcmp(_term, _GPGBA_TERM) || !gpsstrcmp(_term, _GNRMC_TERM))  
        _sentence_type = _GPS_SENTENCE_GPGBA;  
    else  
        _sentence_type = _GPS_SENTENCE_OTHER;  
    return false;  
}
```

I attached my library version files.

- Mike K7MDL

From: radioartisan@groups.io <radioartisan@groups.io> **On Behalf Of** Dimitry, 4Z5CP via groups.io
Sent: Thursday, November 6, 2025 3:25 PM
To: radioartisan@groups.io
Subject: Re: [radioartisan] GPS module for K3NG controller.

Do U mean to change :

```
#define _GPRMC_TERM "GPRMC"  
#define _GPGBA_TERM "GPGBA"
```

to :

```
#define _GPRMC_TERM "GNRMC"  
#define _GPGBA_TERM "GNGBA"
```

?????

----- Original Message -----

From "Dimitry, 4Z5CP via groups.io" <4z5cp=bezeqint.net@groups.io>

To radioartisan@groups.io

Date 07/11/2025 1:19:45

Subject Re: [radioartisan] GPS module for K3NG controller.

Hi Mike.

Maybe this is easy, I do not know.

GPS used - GPGGA, others - GAGGA, GBGGA, GLGGA, GNGGA.....

So if U know, please do modification, I have abt 12 GPR sats and plus many others.

----- Original Message -----

From "Mike K7MDL via groups.io" <k7mdl@hotmail.com@groups.io>

To "radioartisan@groups.io" <radioartisan@groups.io>

Date 07/11/2025 0:45:16

Subject Re: [radioartisan] GPS module for K3NG controller.

It is an easy to modify Tiny GPS lib to process GNSS messages. Then you get the benefit of all GPS services in range.

From: radioartisan@groups.io <radioartisan@groups.io> **On Behalf Of** Dimitry, 4Z5CP via groups.io

Sent: Thursday, November 6, 2025 2:42 PM

To: radioartisan@groups.io

Subject: [radioartisan] GPS module for K3NG controller.

Hello group.

For everyone who going to use Ublox-M8N , maybe also M8 purchased from Aliexpress, small instruction.

After connecting new M8N module to controller - nothing works 😞

Controller used TINY_GPS_LIBRARY, so only GPGGA and GPRMS messages are acceptable.

U should to config module for using GPS only.

Use u-Center software for configuration.


Connect to module with speed 9600.

Press F9 key on the keyboard.

U will get:

Messages - NMEA

- NMEA
- NMEA-NAV2
- RTCM3
- UBX
- UNKNOWN
- CUSTOM



NMEA 0183
National Marine Electronics Association
Standard for interfacing Marine Electronics

Each NMEA message starts with a '\$' character, followed by a checksum character, a carriage-return line-feed sequence, and the message payload. The message is limited to 82 characters including the start character.

The start character is followed by an address, a talker ID, and a message identifier. The talker ID is the receiver. The payload of the message contains the data.

Go to UBX -> CFG -> NMEA (NMEA Protocol) and do changes:

Messages - UBX - CFG (Config) - NMEA (NMEA Protocol)

- DAT (Datum)
- DGNSS (Differential GNSS configuration)
- DOSC (Disciplined Oscillator)
- EKF (EKF Settings)
- ESFA (Accelerometer Config)
- ESFALG (IMU-mount Alignment)
- ESFG (Gyroscope Config)
- ESFGWT (Gyro+Wheeltick)
- ESFLA (Lever Arm)
- ESFWT (Wheel-Tick Config)
- ESRC (External Source Config)
- FXN (Fix Now Mode)
- GEOFENCE (Geofence Config)
- GNSS (GNSS Config)
- HNR (High Nav Rate)
- INF (Inf Messages)
- ITFM (Jamming/Interference Monitor)
- LOGFILTER (Log Settings)
- MSG (Messages)

UBX - CFG (Config) - NMEA (NMEA Protocol)

CFG-NMEA-DATA2

Filters

- ☐ Permit position output for failed and invalid fixes
- ☐ Permit position output for invalid fixes
- ☐ Permit time output for invalid times
- ☐ Permit date output for invalid dates
- ☐ Restrict output to GPS SVs only
- ☐ Permit COG output even if COG frozen

NMEA Version: 4.11

Max SVs per Talker Id: 0 - Standard

Mode Flags

- ☒ Compatibility mode
- ☐ High precision mode

GNSS to filter out

Numbering used for SVs not supported by NMEA

Main Talker Id




GSV Talker Id

RefFix Talker Id

After changes press button "Send"

SBAS (SBAS Settings)

SENIF (Sensor Interface)

 Send  Poll 

Now go to NMEA messages settings:

Messages - UBX

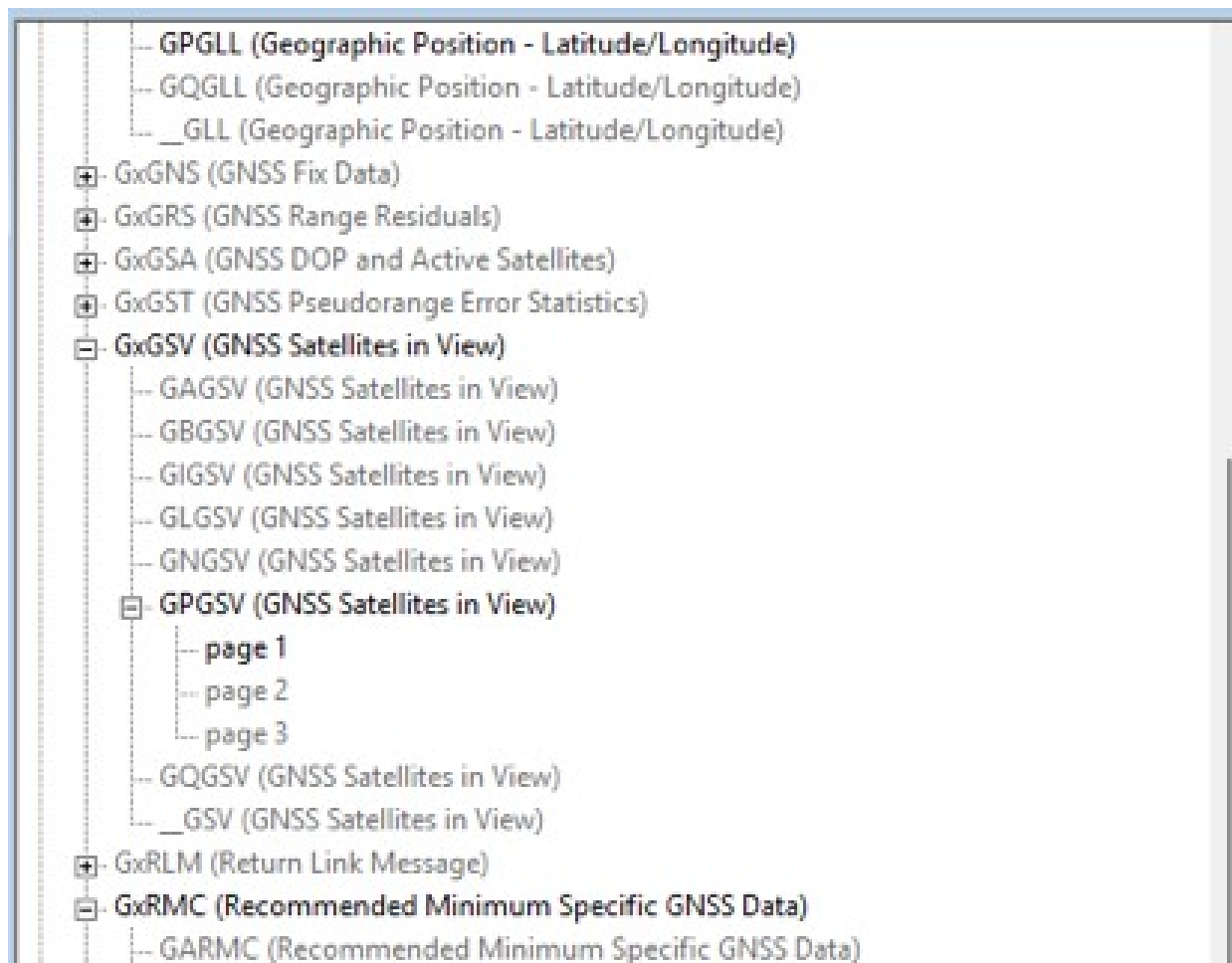
NMEA ←

- [-] GxDTM (Datum Reference)
- [-] GxGBS (Satellite fault Detection)
- [-] GxGGA (Global Positioning System Fix Data)
- [-] GxGLL (Geographic Position - Latitude/Longitude)
- [-] GxGNS (GNSS Fix Data)
- [-] GxGRS (GNSS Range Residuals)
- [-] GxGSA (GNSS DOP and Active Satellites)
- [-] GxGST (GNSS Pseudorange Error Statistics)
- [-] GxGSV (GNSS Satellites in View)
- [-] GxRLM (Return Link Message)
- [-] GxRMC (Recommended Minimum Specific GNSS Data)
- [-] GxTHS (Heading of Vehicle)
- [-] GxTXT (Text Transmission)
- [-] GxUTC (UTC TAI information)
- [-] GxVLW (Dual Ground/Water Distance)
- [-] GxVTG (Course Over Ground and Ground Speed)

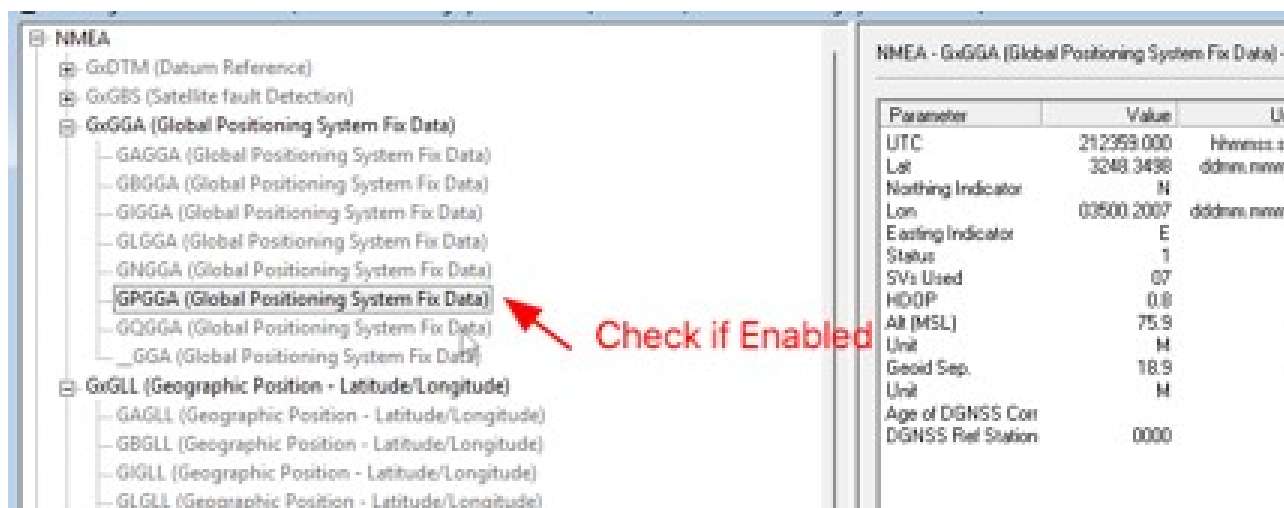
UBX

The UBX protocol is a binary protocol. Each UBX message is 1 byte (0x62). This is the class identifier for this class.

Enable GPRMS: Right click on it -> Enable

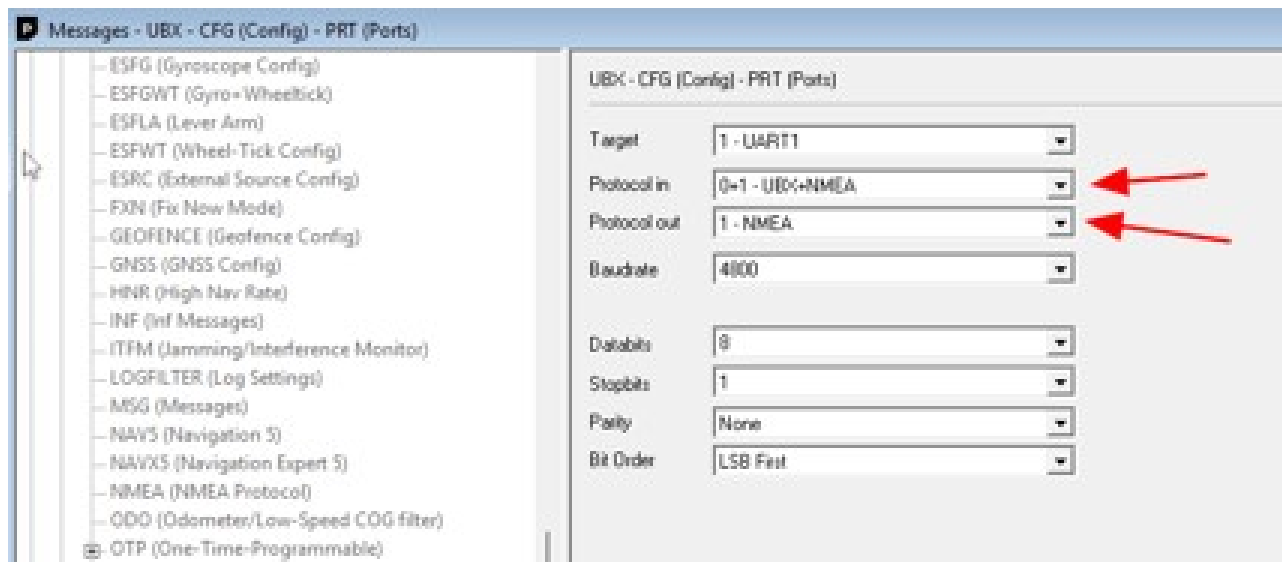


Check if GPGGA message is Enabled|:



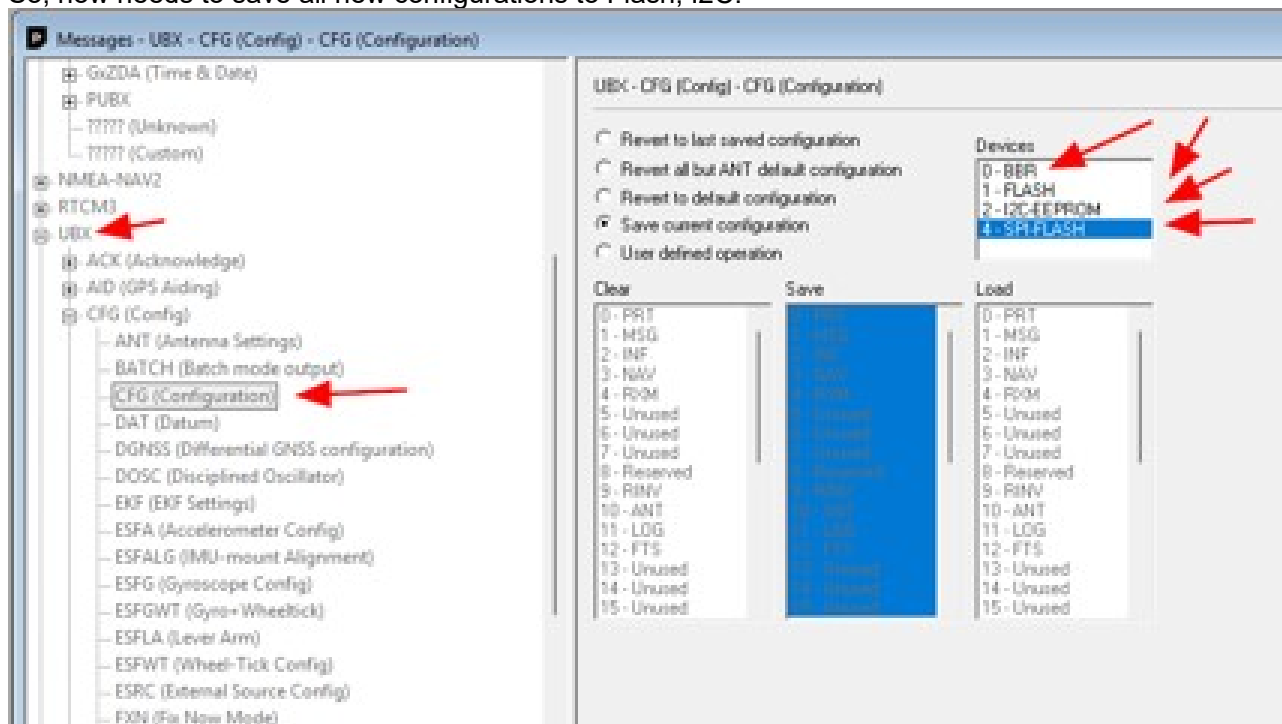
Other messages possible to disable, they do nothing.

I have set only NMEA protocol to output in UBX -> CFG -> PRT :



After changing - click on Send button.

So, now needs to save all new configurations to Flash, I2C:



I do not know which type of memory is used, I have save in the 4 devices, choose 4-SPI-FLASH and press Send, than 2-I2C-EEPROM and press Send, etc.

So after those steps my module starts working with controller 😊

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