V200N GNSS Compass System

Programming Manual
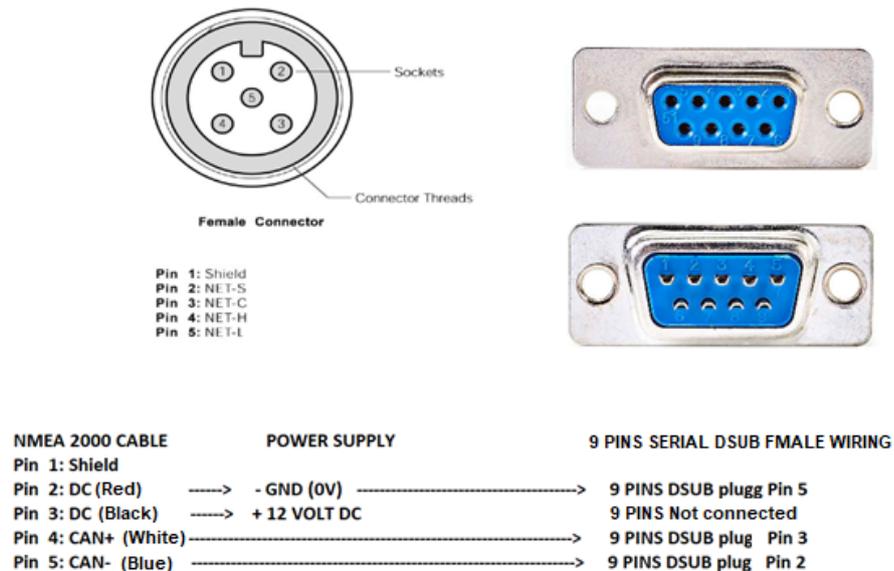
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rev	date	Description	Name
1	29.12.2021	New manual	Verner Jacobsen
2	30.12.2021	Added Attitude info	Verner Jacobsen
3	17.03.2022	Added baud rate settings for the V200N special cable	Verner Jacobsen

V200N PC Connection

V200N can be connected directly to a PC using a special made cable. The cable allows a temporary RS232 connection for software or configuration purposes.

Female Connector

Pin 1: Shield
Pin 2: NET-S
Pin 3: NET-C
Pin 4: NET-H
Pin 5: NET-L

NMEA 2000 CABLE	POWER SUPPLY	9 PINS SERIAL DSUB FMALE WIRING
Pin 1: Shield		
Pin 2: DC (Red) ----->	- GND (0V) ------------------------------------>	9 PINS DSUB plugg Pin 5
Pin 3: DC (Black) ----->	+ 12 VOLT DC	9 PINS Not connected
Pin 4: CAN+ (White) --->		9 PINS DSUB plug Pin 3
Pin 5: CAN- (Blue) --->		9 PINS DSUB plug Pin 2

The cable consists of a MicroC Fmale connector and a 9 Pins DSUB Fmale connector.

It can be made using a spare NMEA 2000 drop cable and cut / solder the pins as shown above. Use the FMALE part of the cable.

Please note, the V200N automatically starts as an RS232 device when the unit detects reversed power on the NMEA 2000 connector.

The V200N unit MUST be disconnected from the existing NMEA 2000 network.

Connecting this special made cable to an existing NMEA 2000 network will damage all other units

Please configure the PC serial port adapter as RS232 if it's a type that supports different types of connections. Minimum Port Speed in Windows Device Manager must be set to 19.200 or higher. (115.200)

Atlas activation messages

The following table lists the commands accepted by the Atlas-band receiver, to configure and monitor the Atlas functionality of the receiver.

Command Description
$JOFF Turn off all NMEA messages on current serial port for debugging when doing activations.
Repower the unit to turn on the NMEA messages after finishing the work.

$JK Is used to send an authorization code to the receiver.
Activations are stored automatically and permanent into the receiver.

Activation codes for the desired Atlas feature must be purchased from ProNav.

$JK,SHOW Requests the subscription and activation information from the receiver.
This command should be used both before and after applying the activation codes.

Activation codes

Activations or debugging can be done from a terminal program.
ProNav recommend using Tera Term.
Download latest version from https://ttssh2.osdn.jp/index.html.en
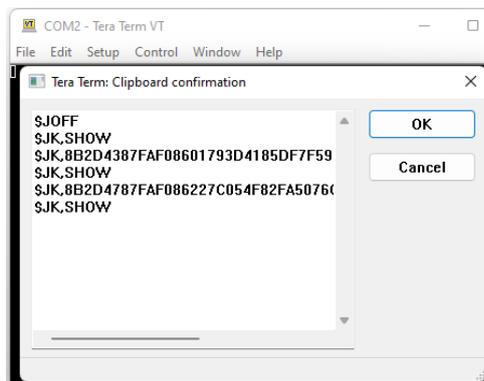**Select COM port and baud rate as 19.200 from Setup / Serial Port.**

Copy the below text into a text editor.

$JOFF
$JK,SHOW
$JK,8B2D4387FAF08601793D4185DF7F525E79D0F61B868186854D9C0014 * Example code, pls. not use
$JK,SHOW
$JK,8B2D4787FAF086227C054F82FA5026C4CE33DD3C731737BC264E0014 * Example code, pls. not use
$JK,SHOW

Replace the two example codes with the new codes received from ProNav.

Use CTRL A and CTRL C to copy the updated text into the clipboard.

Use the Edit / Paste<CR> function in Tera Term to paste the updated text to the unit.

Activations Accepted means the codes are valid and saved into the unit.

Example Tera Term output after adding the 0.75 degree heading options:

$>JK,SHOW,40,0,00/00/2000,20,OPT=,10Hz,MULTI_GNSS,Low_End
$> Subscription Accepted
$>JK,SHOW,440,0,00/00/2000,20,OPT=,10Hz,MULTI_GNSS,**ATLAS_LBAND**,Low_End
$> Subscription Accepted$>
JK,SHOW,440,0,00/00/2000,0,OPT=,10Hz,MULTI_GNSS,**ATLAS_LBAND**

ATLAS_LBAND is necessary for all the different activation options that affects the accuracy.

Adding the 0.75 degree heading activation removes the "Low_End" from the above result.

Atlas license codes are unique for each unit and cannot be transferred into a new unit.
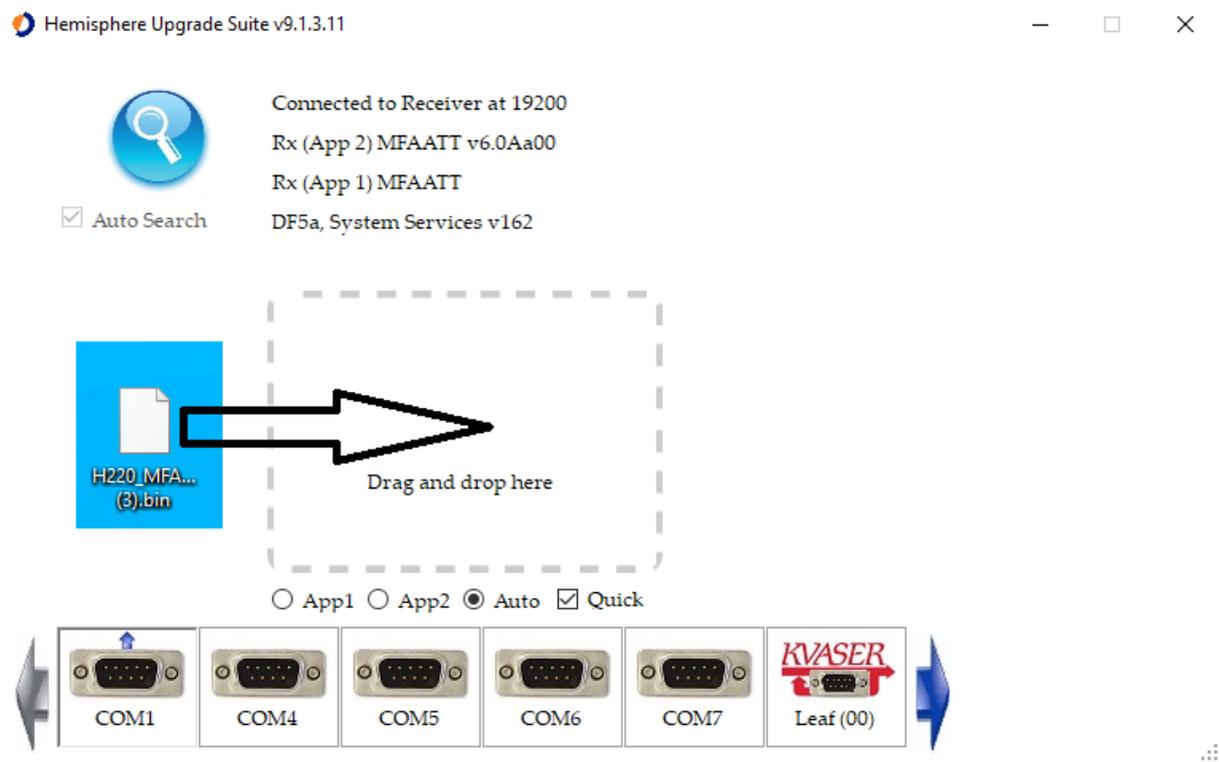
Firmware upgrades

Please install Upgrade Suite and select the COM port you are using. The COM port should be configured in Windows Device Manager to allow a Maximum Port Speed of 115.200 bps.

Select Auto Search.

Click the magnifying glass to search for the connected unit. It will automatically connect as soon as it finds the correct baud rate.
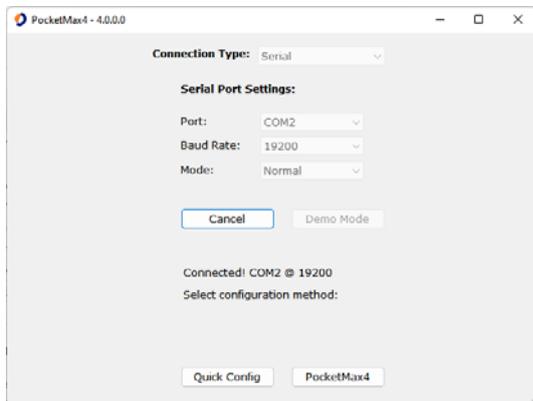
We recommend making a note of the existing firmware and compare it with the new version after you finish the upgrade. In case the upgrade fails, please check connections, re-power and redo the upgrade.

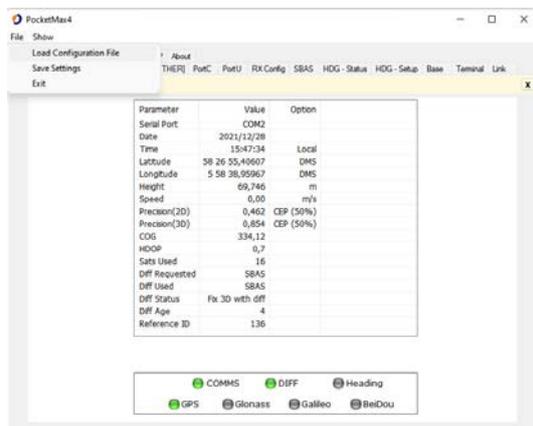Both V200S and V200N use the same firmware file.
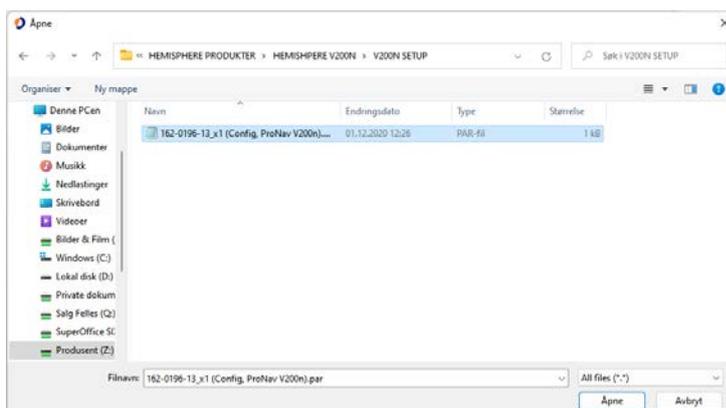
Uploading a new configuration file

Connect the V200 unit to the PC. Start PocketMax4.

Select PocketMax4.

Select Load Configuration File.

Select the configuration file intended for the connected V200 model.

The configuration file for V200N and V200S are not compatible.

Please redo the upload if it fails, or if you accidentally select the wrong file.

V200N configuration (.par) file

The V200N are delivered pre-programmed with our recommended settings.
Changing filter values can lead to decreased performance and are not recommended.

PGN'S or message interval can be updated according to customer requirements.

```
#CONFIG,162-0196-13,A1
;NAME,ProNav V200n

$JRESET,ALL

$JN2KSETUP,1,MCODE,1051
$JN2KSETUP,1,PCODE,15755
$JN2KSETUP,1,MODEL,ProNav V200n GPS Compass Antenna
$JN2KSETUP,1,VERSION,804-0163-31
$JN2KSETUP,1,ADDRESS,16
$JN2KSETUP,1,MSGMAP,0x100077BF

$JAIR,AUTO
$JALT,NEVER
$JLIMIT,10

$JDIFF,EXCLUDE,ALL
$JDIFF,INCLUDE,ATLAS,SBAS
$JDIFF,ATLAS
$JWAASPRN,AUTO

$JAGE,2700
$JMASK,5
$JNP,5
$JSMOOTH,LONG

$JATT,COGTAU,3.0
$JATT,EXACT,NO
$JATT,FLIPBRD,YES
$JATT,GYROAID,YES
$JATT,HBIAS,0.0
$JATT,HIGHMP,YES
$JATT,HRTAU,2.0
$JATT,HTAU,2.0
$JATT,LEVEL,NO
$JATT,MSEP,0.20
$JATT,NEGTILT,NO
$JATT,NMEAHE,1
$JATT,PBIAS,0.0
$JATT,PTAU,0.5
$JATT,ROLL,NO
$JATT,SPDTAU,3.0
$JATT,TILTAID,YES

$JSAVE
```

V200N PGN'S and Message Map

The default MsgMap 0x100077BF includes the following N2K PGN messages:

PGN 126992 System Time
PGN 129025 Position - Rapid update
PGN 129029 GNSS position update
PGN 129026 COG, SOG - Rapid update
PGN 129027 Position Delta, High Precision update
PGN 129028 Altitude Delta, High Precision update
PGN 127250 Vessel Heading
PGN 127251 Rate of Turn
PGN 127257 Attitude, Yaw, Pitch, Roll
PGN 127258 Magnetic Variation
PGN 129539 GNSS DopS
PGN 129540 GNSS Sats in View
PGN 129542 Pseudorange Noise Statistics

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