

# NOVATRON BASE STATION – User Manual

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## Introduction

Novatron base station provides RTK correction for construction machines utilizing RTK GNSS positioning. The base station consists of several components, such as GNSS receiver, radio modem, battery, charger, and mast or tripod.

## Mounting the base station

When mounting the base station, make sure that the GNSS antenna has a clear view to the sky.

Connect all cables to the connectors on the case. Connectors and cables are labeled. Make sure that the cables do not make any tight curves.

The base station includes a battery and a charger. However, it is recommended to connect the base station to mains current whenever possible. The battery is being charged when the mains current is connected. Green LED in the charger indicates full charge of the battery. Full charge will last 12 hours.



Red: Power connector  
Yellow: Power switch  
Green: GNSS antenna connector  
Blue: Radio antenna connector

## Setting up the base station

### Setting up the base station with NovatronGNSScfg (Windows XP)

Switch the power ON. Open the base station case and connect the provided USB A / mini B cable from your computer to the Novatron GNSS receiver. Windows indicates that new hardware is found. Connect the provided USB memory stick to your computer.



- Select "No, not this time" and press "Next".
- Select "Install specific location" and press "Next".
- Select "Include this location in search" and press "Browse".
- Select folder "Novatron gnss usb drivers" from the memory stick and press "Open".

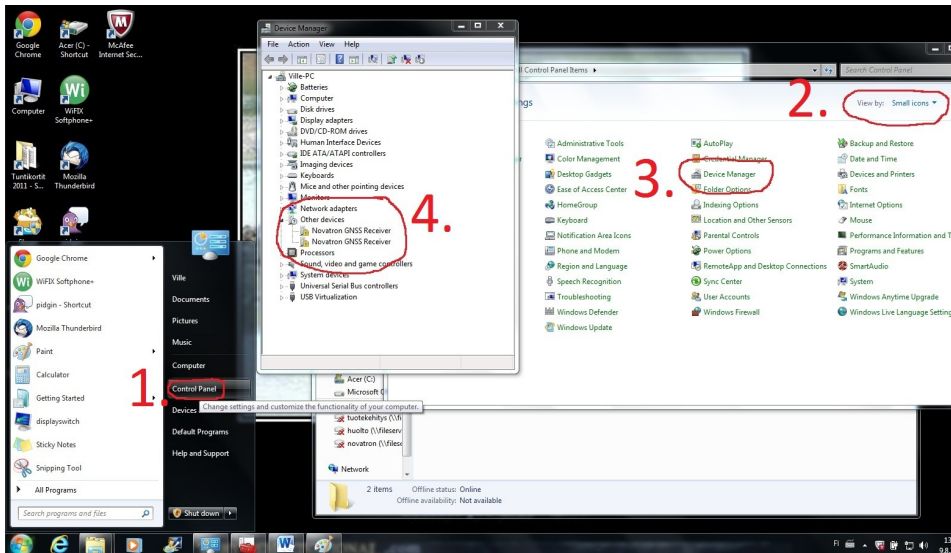
Now the drivers are being installed to your computer. This procedure needs to be repeated three times. To avoid driver installation in the future, always use the same USB port.

After installing the drivers, launch program NovatronGNSScfg from the USB memory stick. If the drivers are OK, the program shows the COM port you are connected to, the number of satellites, and the HDOP value.

## Setting up the base station with NovatronGNSScfg (Windows 7)

Switch the power ON (restart the computer if it is already on). Press F8 during system startup to display “Advanced Boot Options” (you might need to press F8 many times during startup), and select “Disable Driver Signature Enforcement” on every boot up.

Open the base station case and connect the provided USB A / mini B cable from your computer to the Novatron GNSS receiver and connect the provided USB memory stick to your computer.



Press the bottom left window icon for Start. Then choose “Control Panel” (1), change the view by “Category” setting to small icons (2) and choose “Device Manager” (3) -> “Other Devices” (4). In “Other Devices”, right click on “Novatron GNSS receiver” and update the driver software. Choose “Browse My Computer” for driver software. Select this folder “Novatron GNSS USB drivers” from your USB memory card. Windows security might need your permission to update the drivers. Select “Install drivers anyway”. After this you will get two more icons in “Device Manager” -> “Other Devices”. Do the same installation to them.

After the three installations, check the used COM port for the GNSS receiver. You can see the information on “Device Manager” -> “Ports (COM & LPT)”. For example, “Novatron GNSS receiver (SF-3050) serial port (COM 4)” indicates that the port number is 4.

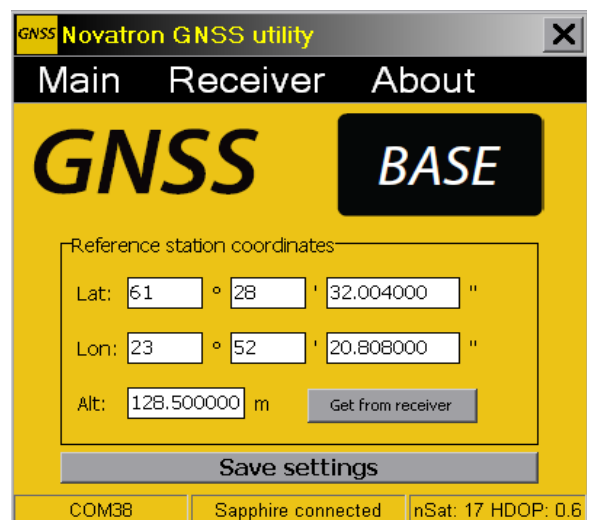
After installing the drivers, launch program NovatronGNSScfg from the USB memory stick. If the drivers are OK, the program shows the COM port you are connected to, the number of satellites, and the HDOP value.

## Setting up the base station to an unknown location

When setting up the base station to an unknown location, the base coordinates have to be taken from the GNSS receiver. Press the button “Get from receiver” and the coordinates will appear in Lat (X), Lon (Y), and Alt (Z) boxes. If the coordinates look acceptable, press “Save settings”. If everything is OK, Satel radio modem should blink the TD and CD LEDs.

## Setting up the base station to a known location

If the coordinates of the base station GNSS antenna are known, type the coordinates manually to Lat (X), Lon (Y), and Alt (Z) boxes and press “Save settings”. If everything is OK, Satel radio modem should blink the TD and CD LEDs.



## Extended settings

Extended settings (red rectangular area in the picture) appear when tapping "Main" -> "Show extended settings".

The extended settings include

- Renaming the base station
- Renaming the base station ID
- Selecting the correction format

To save the changes, press "Save settings" button. If everything is OK, Satel radio modem should blink the TD and CD LEDs.

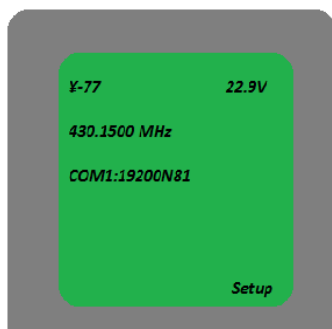
## Base station radio modem (Satel Epic)



Radio modem is the transmitter of the correction data. The base modem and the rover modem must have the same settings. The modem has four buttons (circle, up, down, square).

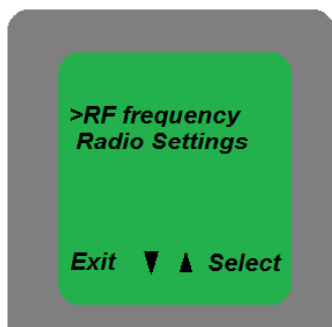


Circle – Up – Down – Square



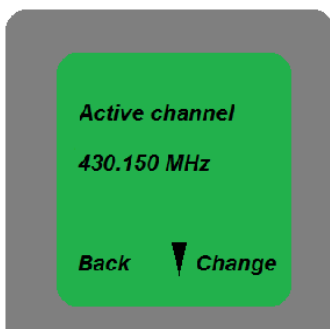
When the Satel modem is turned on, the main screen will appear. The main screen shows

- Battery voltage (if base station is not connected to mains current)
- Quality of the transmission
- Transmission frequency
- Communication port and baud rate



Main menu can be entered by pressing "Setup". In the main menu, there are several functions and settings that can be changed. However, only a few things need to be adjusted. The cursor can be moved by "Up" and "Down" buttons, and the sub menus can be entered by pressing "Select".

Change the transmitting frequency by moving the cursor to "RF frequency" and choose "Select".



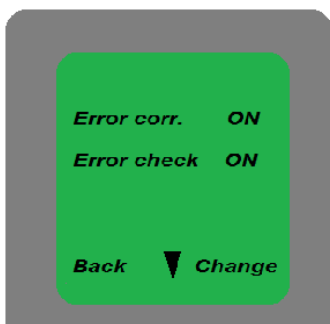
To change the transmitting frequency, press “Change”. A cursor appears on the screen. Move the cursor by pressing “Change” and change the number by pressing “Up” and “Down” buttons.

When the frequency has been set, press “Change” until “Select” appears on the screen. Press “Select” to save changes and to go back to the main menu.

If you want to go back without saving any changes, press “Back” (you will be asked if you want to save the changes or not).



Choose “Additional” in the main menu to set error correction or error check ON/OFF.



It is recommended to have error correction ON and error check ON. However, if you want to switch them OFF, press “Up” or “Down” to move the cursor and press “Change” to switch between ON and OFF states.

To go back to main menu, press “Back”. To go back to the main screen, press “Back” again (you will be asked if you want to save the changes or not).

## Verification of the setup

When the base station has been configured, the TD and CD LEDs should blink in Satel base station modem and the RD and CD LEDs should blink in Satel rover modem.

Vision 3D should indicate that the system is receiving RTK correction from the base station (see Vision 3D user manual).

After the base installation, the machine has to be calibrated to a known location (see Vision 3D installation manual).

## Contact information

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