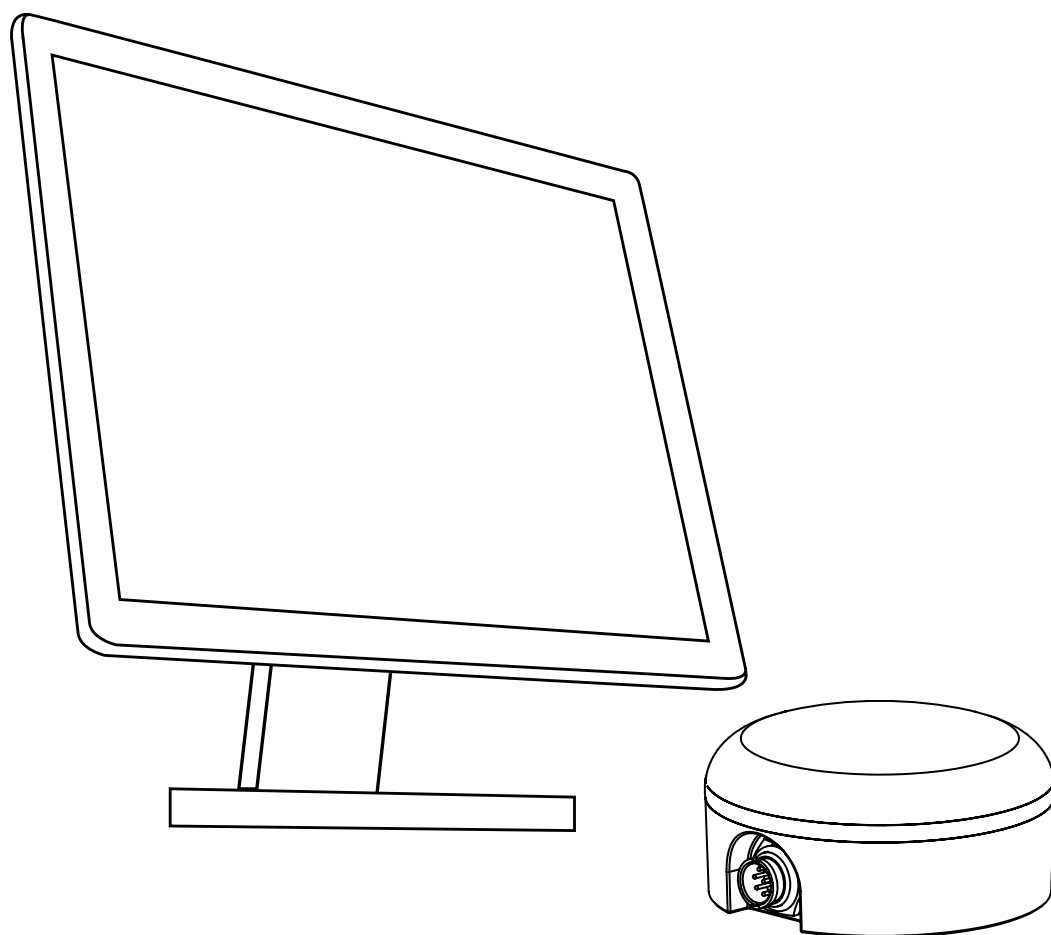




SPRCFMD010

FARMNAVIGATOR



AvMap RTK configuration tool
QUICK GUIDE

1. Introduction

This document explains how to use the AvMap RTK configuration tool and is intended for disclosure and use limited to qualified technicians only.

AvMap will not be liable for errors contained herein or for incident or consequential damages in connection with the performance or use of the tool by not qualified technicians.

2. Requirements

2.1 Tools

PC Windows OS

Minimum requirements:

- OS: Windows 7 or higher
- CPU: 1GHz or faster
- Disk: 50Mb free space on disk
- RAM: 2GB or higher

All in One RTK Configuration Cable Kit

Components of the kit are:

- Cigarette lighter adapter (Figure 2.1.a)
- Configuration Cable (Figure 2.1.b)
- All in One RTK power cable (Figure 2.1.c)
- AC/DC adapter (Figure 2.1.d)

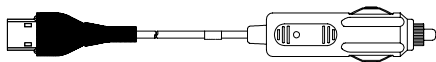


Figure 2.1.a

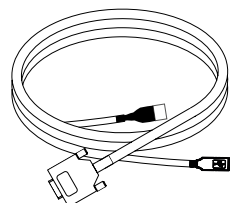


Figure 2.1.b

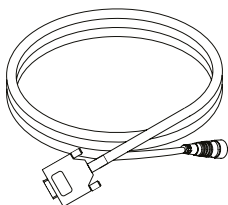


Figure 2.1.c

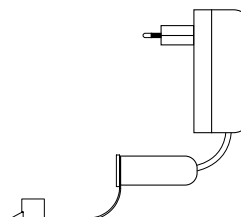


Figure 2.1.d

2.2 Parts

- AvMap RTK configuration tool
- All in One RTK / Turtle RTK / 1Minute RTK-S antenna (Figure 2.2) - namely “RTK antenna”

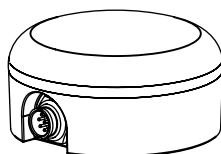


Figure 2.2

3. Setup

1. Download the package “RTKTerminal.vx.x.xR.zip” where x.x.x represent the latest version of the tool: <http://cloud.avmap.us/download/RTKTerminal.vx.x.xR.zip> ;
2. Unzip the package in any location of the PC, the folder “RTKTerminal.vx.x.xR” will be available;
3. Connect the All in One RTK power cable to RTK antenna (Figure 3.a);
4. Connect All in One RTK power cable to the Configuration Cable (Figure 3.b);

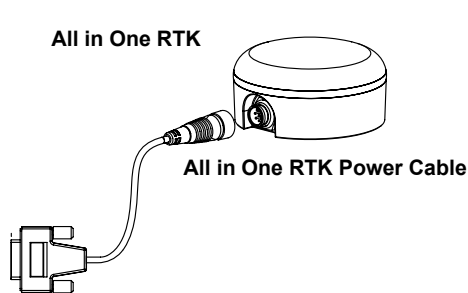


Figure 3.a

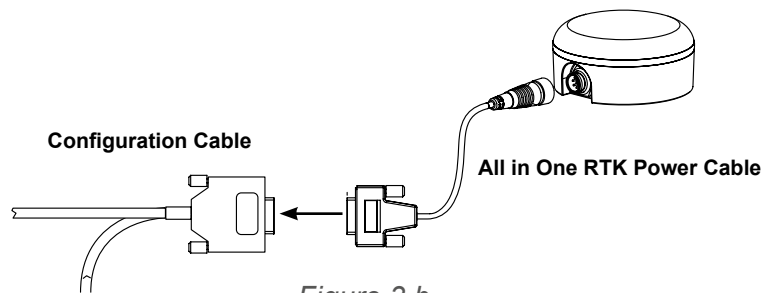


Figure 3.b

5. Connect the Configuration Cable to the Cigarette light adapter, then connect the Cigarette light adapter to the AC/DC adapter (Figure 3.c);

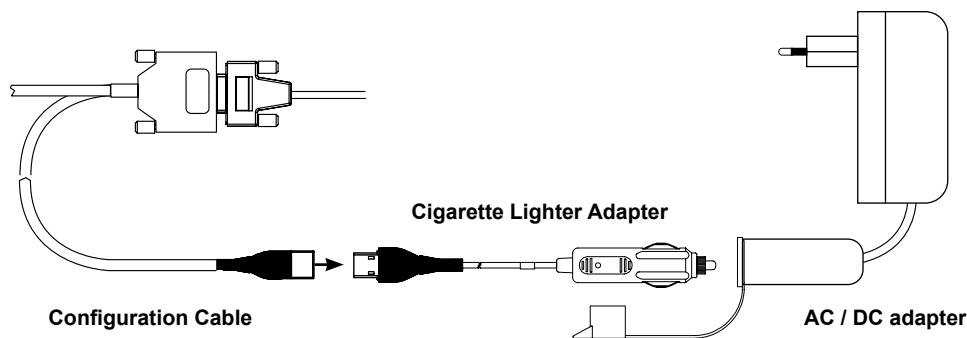


Figure 3.c

6. Connect the Configuration cable USB plug to the PC (Figure 3.d) and wait for the automatic driver installation;

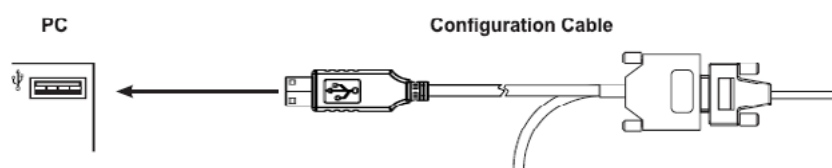


Figure 3.d

7.

- 7.1 Please ensure that FTDI drivers are already installed on your PC. Drivers and installation instructions are provided along with “AvMap RTK configuration tool guide” in the same package “RTKTerminal.vx.x.xR.zip”. Document is named “FTDI_DRIVERS_installation_quick_guide”;
- 7.2 On your PC access to “This PC” section, move cursor over an empty space and click right button of the mouse, then select “Properties” (Figure 3.e).

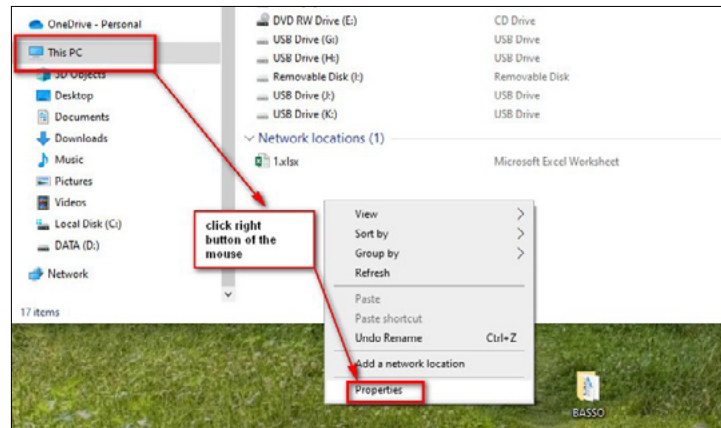


Figure 3.e

8. Click on “Device manager” and click the left arrow to open the Ports (COM&LPT) drop-down menu and take note of the USB Serial Port COM number;

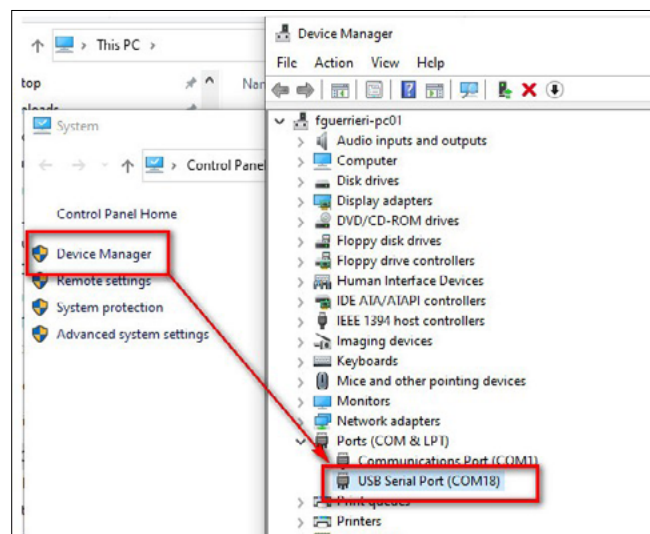


Figure 3.f

9. Open the folder “RTKterminal_vx.x.xR” and double click on “AvMapRTKConfig.exe” file (Figure 3.g);

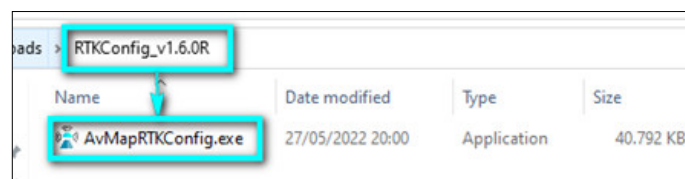


Figure 3.g (Software version is just an example)

10. AvMap RTK configuration tool shall open; click on the “settings” icon (Figure 3.h), then select COM port previously noted (Figure 3.f) and select “Apply”, then “Close”; “dot” indicator shall become “green” (Figure 3.j);

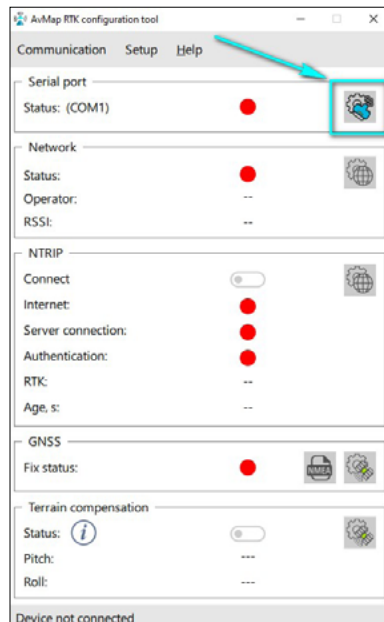


Figure 3.h

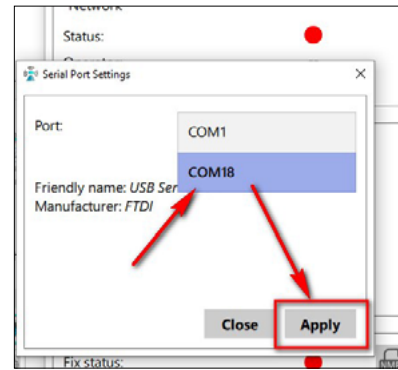


Figure 3.i

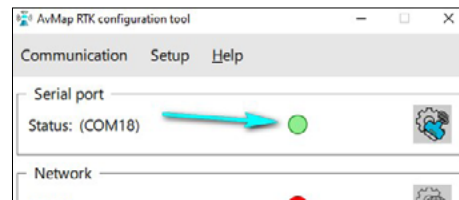


Figure 3.j

11. Connect AC/DC adapter to the 220V plug to power ON the RTK antenna; wait indication “GNSS connected” on the bottom left corner of the AvMap RTK configuration tool (Figure 3.k).

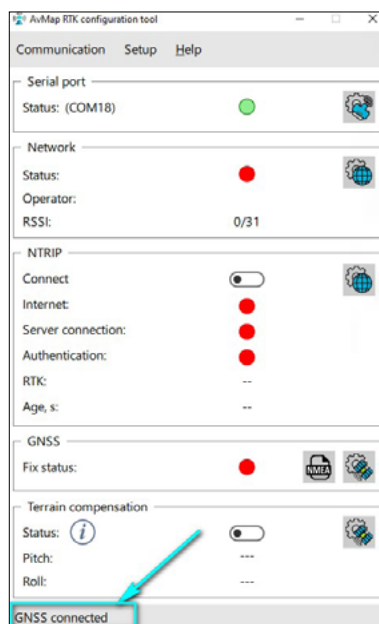


Figure 3.k

4. NTRIP Settings (only for All in One RTK and 1Minute RTK-S)

NOTE: RTK antenna shall be already registered on <https://app.myfarmnavigator.com>

1. Tap on NTRIP settings icon (Figure 4.a) to open “NTRIP settings” page (Figure 4.b); data to be filled are:

Address	it is the name of the server
Port	it is the port to access to the server
User name/Password	keys to do authentication
Mount point	value required to calculate corrections from base station

NOTE: NTRIP account shall be provided by your NTRIP provider.

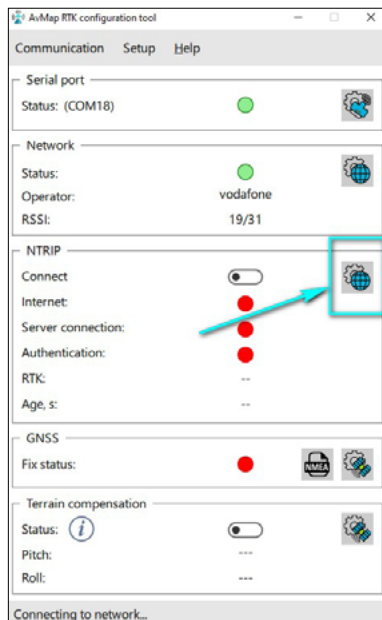


Figure 4.a

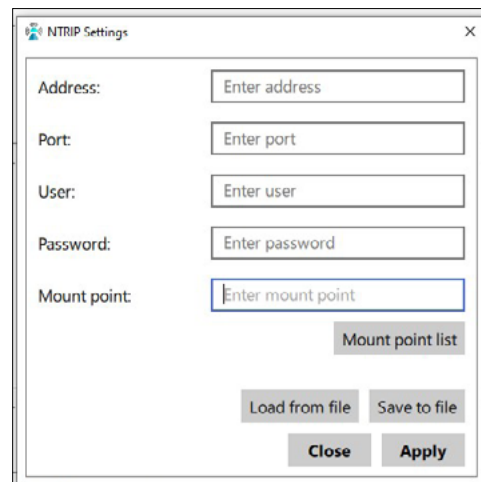


Figure 4.b

2. Fill all the data and press "Apply", then "Close" (Figure 4.c) to quit NTRIP settings page;

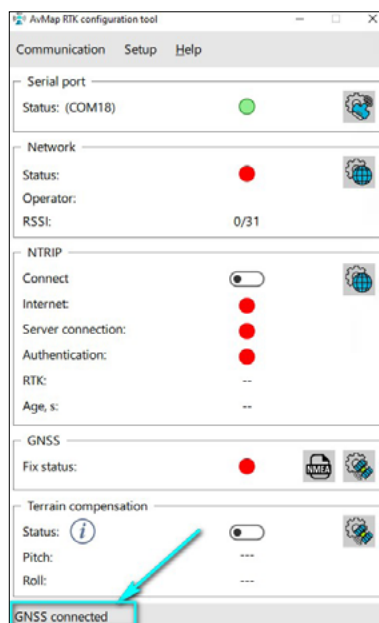


Figure 4.c

NOTE: "Mount point" can be filled also choosing it into a dedicated list.

Mount point list (Figure 4.d, Figure 4.e)

Pressing "Mount point list" button opens a window with a list of selectable results (contact NTRIP provider to know which are best options to be used).

NOTE: "Mount point" can be filled also choosing it into a dedicated list.

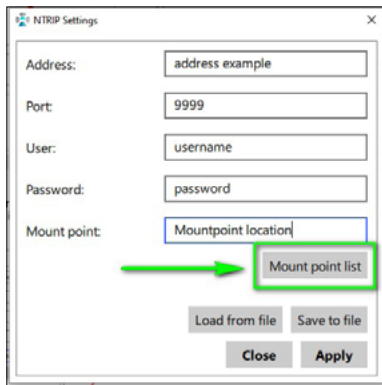


Figure 4.d

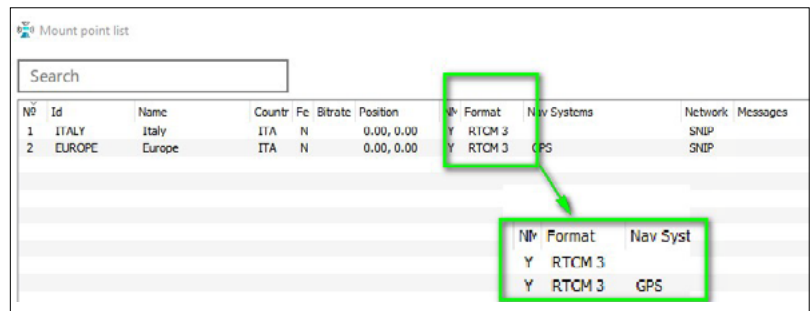


Figure 4.e

- Select “Update” in case you need to refresh the page and find possible new results (Figure 4.f);

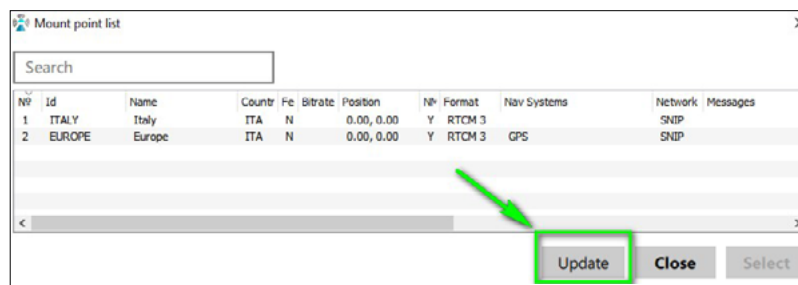


Figure 4.f

- Click on one of the mountpoints listed and press “Select” button” (Figure 4.g); window shall close and Mount point shall be automatically updated (Figure 4.h);

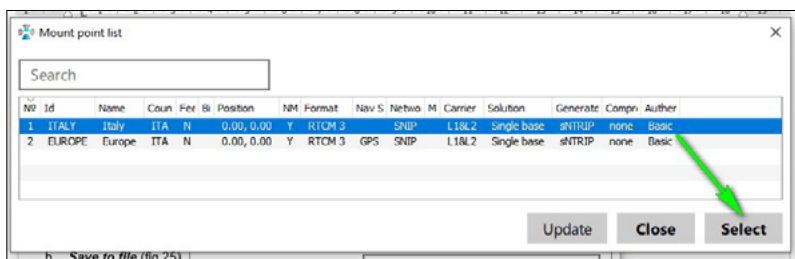


Figure 4.g

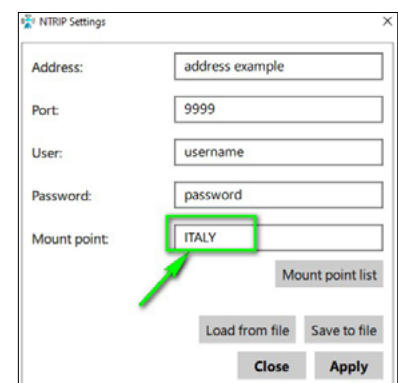


Figure 4.h

3. Move All in One RTK antenna outside;
4. Wait that the dots related to Network status, GNSS fix status and Internet become green as shown in Figure 4.i;

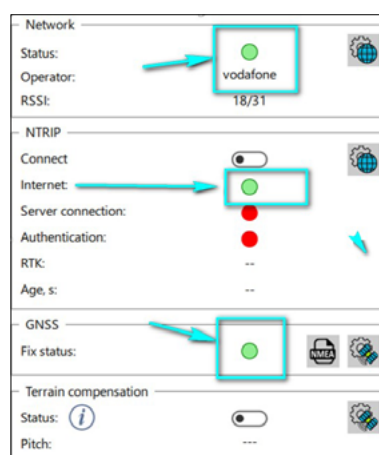


Figure 4.i

- Click on the button into the red rectangle to switch on NTRIP connection and wait about 1 minute; dots in the row of Server connection and authentication shall become green (Figure 4.j) to confirm that NTRIP connection has been completed successfully (Figure 4.k).

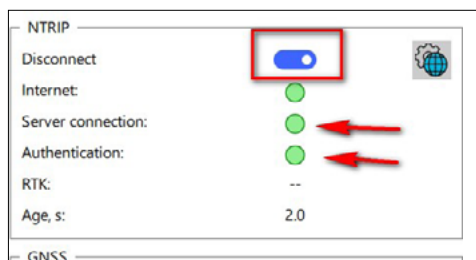


Figure 4.j

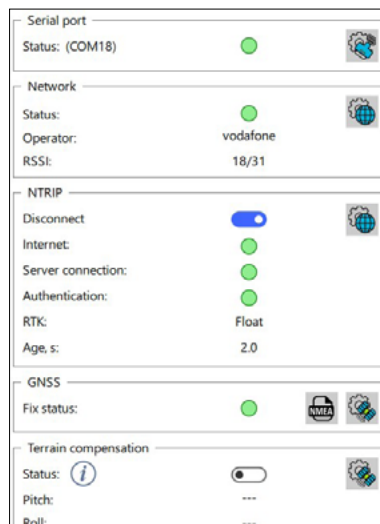


Figure 4.k

5. NTRIP Settings page additional functions (only for All in One RTK and 1Minute RTK-S)

5.1 Save to file

- Click “Save to file” button to create a NTRIP configuration file (Figure 5.1.a);
- On “Save NTRIP Settings” page select a folder, input the file name and click “Save”; file shall be created (Figure 5.1.b).

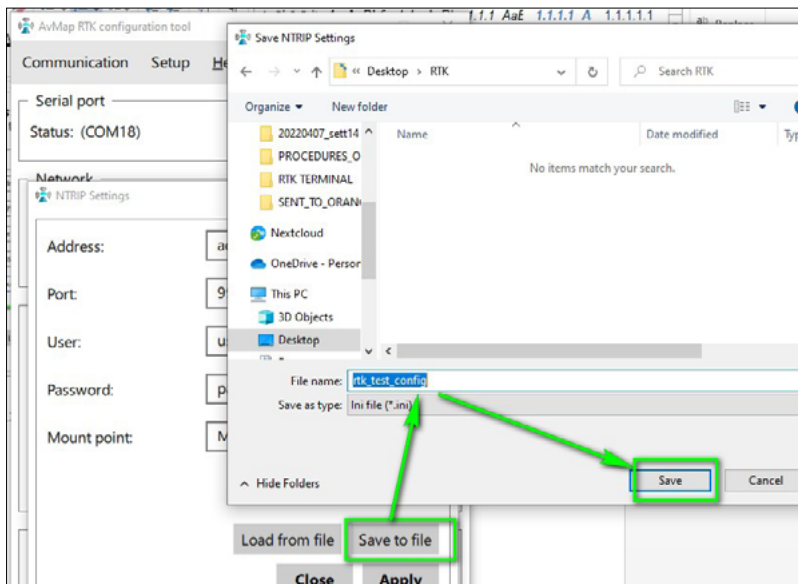


Figure 5.1.a

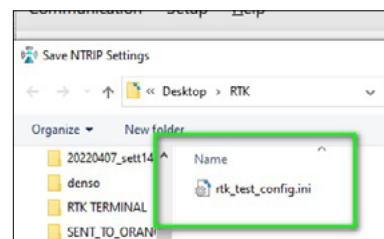


Figure 5.1.b

5.2 Load from file (compatible configuration file with “.ini” extension shall be available)

- Click “Load from file” button;
- Select folder where file is located;
- Select file with extension “.ini” and click “Open” (Figure 5.2.a); NTRIP parameters shall be automatically updated (Figure 5.2.b);
- Select “Apply” and then “Close”.

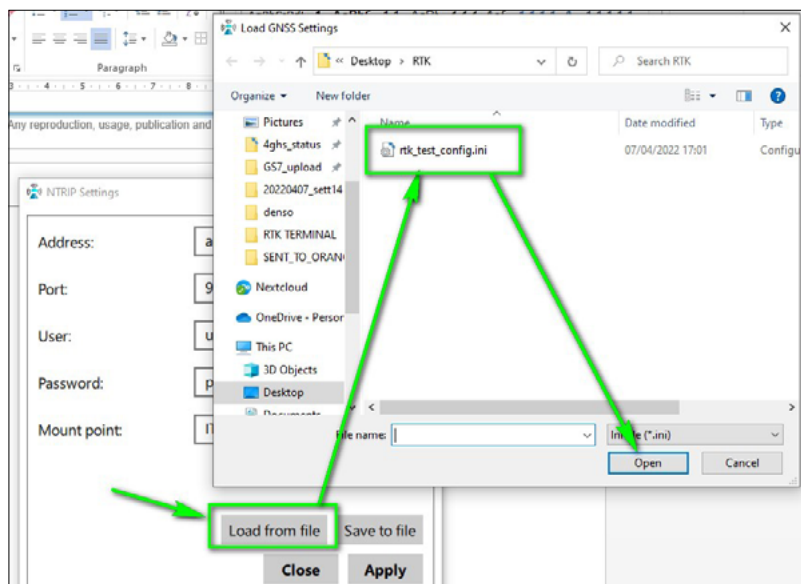


Figure 5.2.a

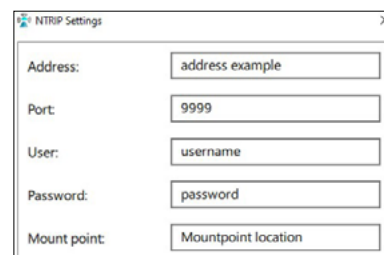


Figure 5.2.b

6. Network Settings (only for All in One RTK and 1Minute RTK-S antennas)

1. Tap on Network settings icon (Figure 6.a) to open “Network settings” page (Figure 6.b);

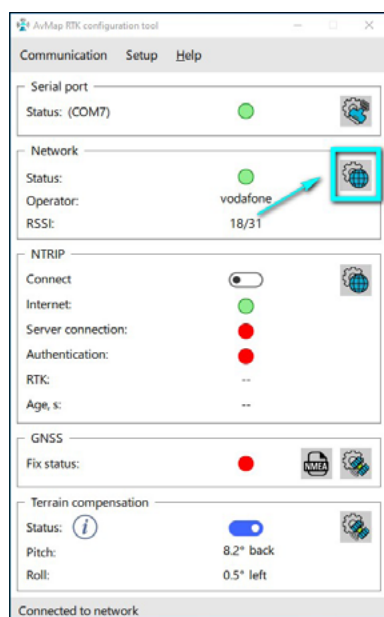


Figure 6.a

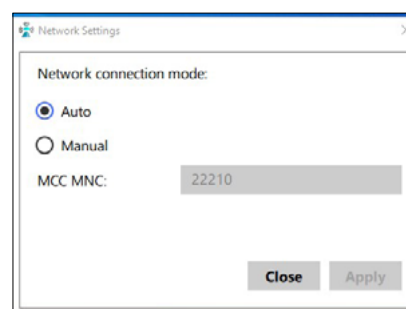


Figure 6.b

2. Choose the Network connection mode:
 - Auto: the Network connection is automatic;
 - Manual: the Network connection is not automatic and the MCC/MNC code, corresponding to your GSM provider, shall be filled.

NOTE: the MCC/MNC code shall be composed of at least 5 digits, no space between MCC and MNC codes shall be added. Refer to the list available here <https://www.mcc-mnc.com>, see example in Figure 6.c.

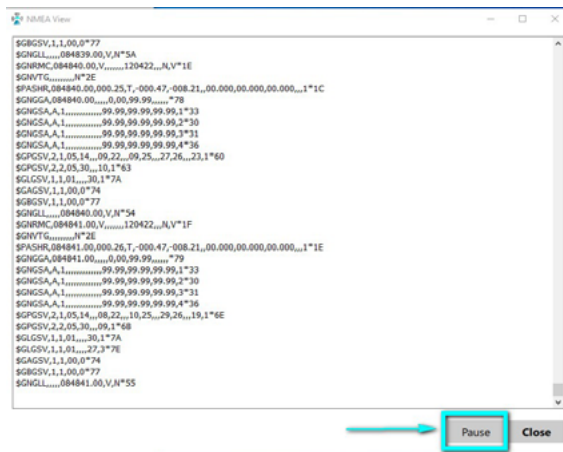


Figure 7.c

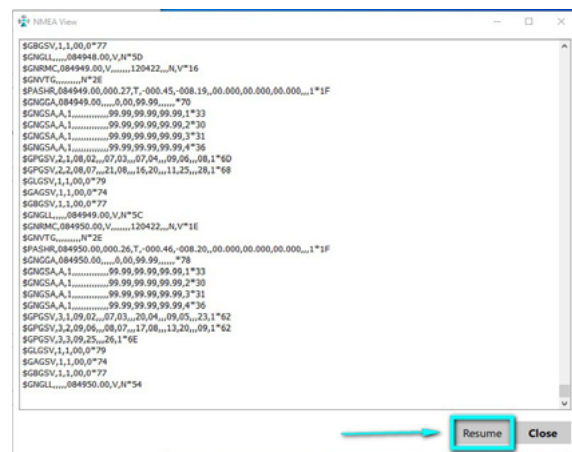


Figure 7.d

3. Tap on "Close" button; NMEA View page shall dismiss (Figure 7.e);

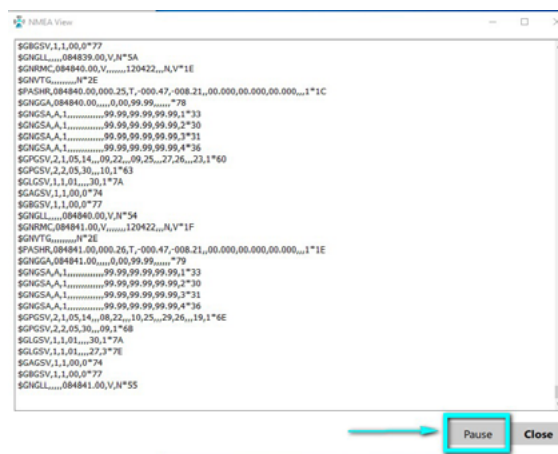


Figure 7.e

4. Tap on GNSS settings icon (Figure 7.f) to open "GNSS settings" page (Figure 7.g). In this window RTK antenna parameters can be changed.



Figure 7.f

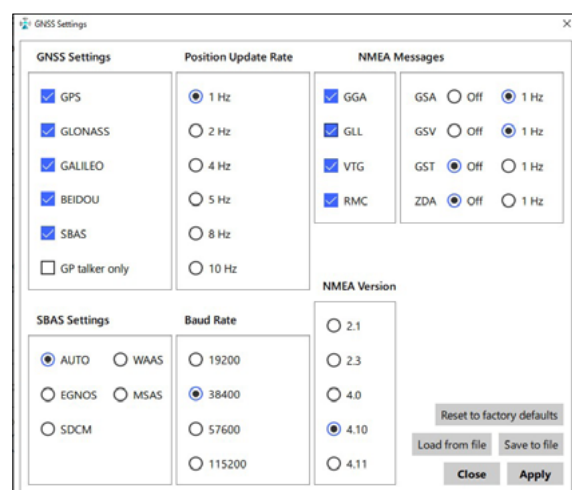


Figure 7.g

5. Here follows description of the buttons:

- Reset to factory defaults: this button restores to factory defaults settings of the RTK antenna;
- Load from file (par 5.2);
- Save to file (par 5.1);
- Apply: click on it to apply changes done;
- Close: click on it to close the GNSS Settings window.

8. Terrain compensation settings

Purpose of this setting is to allow to the RTK antenna to have a good performance on not flat fields. In case of not flat fields, the scenario corresponds to the one shown in Figure 8.a.

The fix point calculated is always point “A” (GPS signal “comes” perpendicularly from sky to terrain surface), but in case of not-flat surface the exact GPS fix point that shall be used is point “B”.

Terrain Compensation setting allows to calculate and compensate the angle “A-B” and to give point “B” as GPS fix position. In order to setup Terrain compensation feature the tractor shall be not in movement and over a flat surface (Figure 8.b) then:

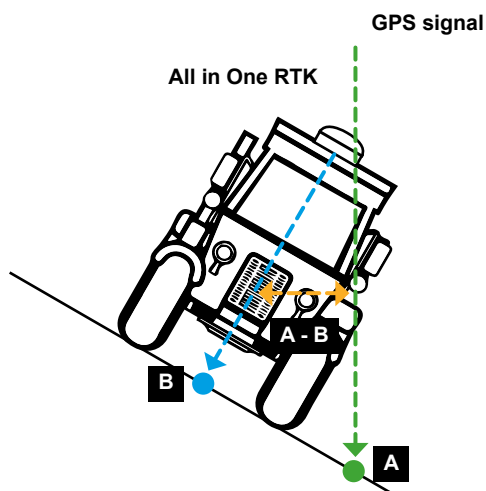


Figure 8.a

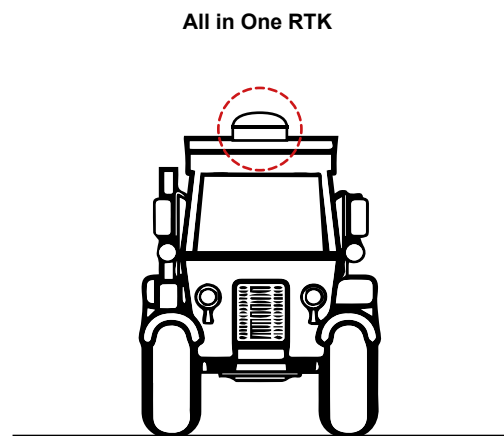


Figure 8.b

1. Tap on Settings button (Figure 8.c) to open Terrain Compensation Settings page;
2. Set “Antenna height” (see tractor draw in Figure 8.d to know the correct value to type);



Figure 8.c

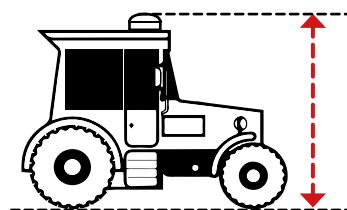
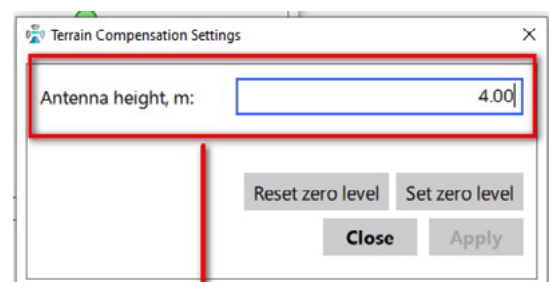


Figure 8.d

3. Tap on Set zero level button to calibrate the RTK antenna, then tap on “Apply” button and then “Close” (Figure 8.e); The page shall close automatically;

NOTE: it is possible to tap on “Reset zero level” button to undo previous “Set zero level” action.

4. On Terrain compensation page tap the switch button; after about 5 sec “Pitch” and “Roll” values shall be 0.0° (RTK antenna is calibrated) (Figure 8.f);

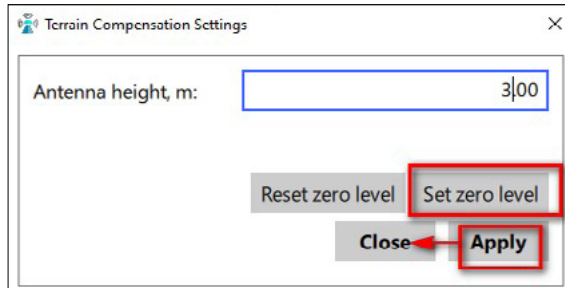


Figure 8.e



Figure 8.f

9. Other functions

In the high edge of the main page of the AvMap RTK configuration tool (Figure 9.a) you will find the buttons shown into blue square on Figure 9.a (Communication, Setup, Help).

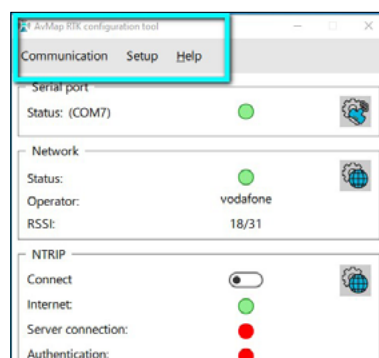


Figure 9.a

- A. Tapping on Communication and Setup buttons, related dropdown menu shall appear; each sub-button on that menu is a shortcut of other “features” on the same window (see Figure 9.b and Figure 9.c). These shortcuts open the same page that is opened clicking the buttons indicated by the red arrows;

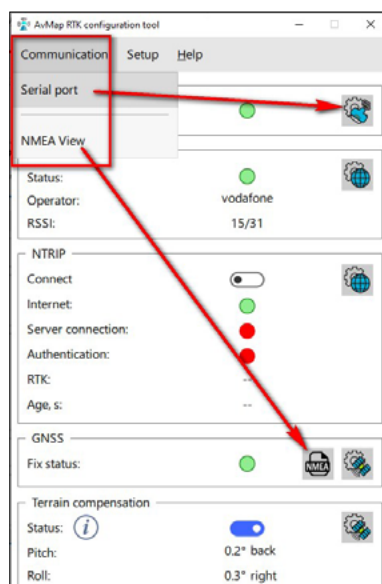


Figure 9.b

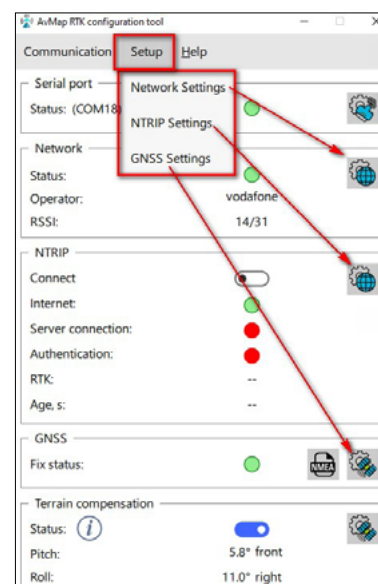


Figure 9.c

- B. Tap on “Help” button and then on “About” (Figure 9.d). The page with all the details related to AvMap RTK configuration tool and the RTK antenna is shown (Figure 9.e);

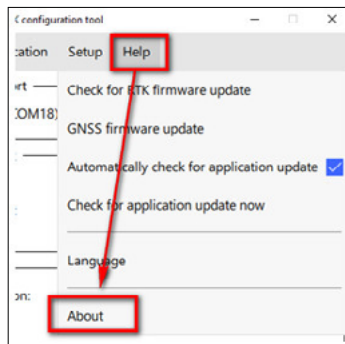


Figure 9.d

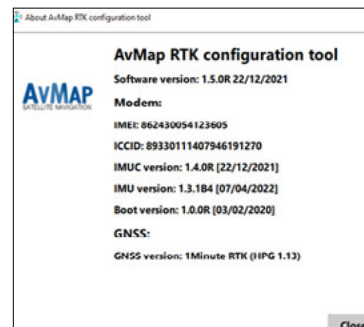


Figure 9.e

- C. Tap on “Help” button and then on “Check for RTK firmware update” (only for All in One RTK and 1Minute RTK-S antennas) (Figure 9.f); popup of Figure 9.g shall be shown. Tap on “OK” to close it. Wait 10 minutes and check in the “About” page if Firmware versions have been updated;

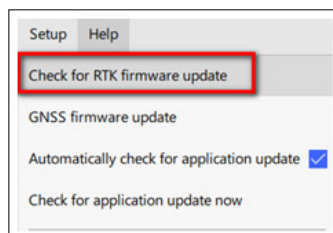


figure 9.f

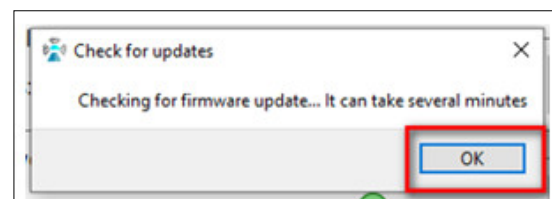


Figure 9.g

- D. Tap on “Help” button and then on “Check for application update now” (Figure 9.h) to update automatically the AvMap RTK configuration tool. In case a new version is not available, a popup (Figure 9.i) appears. Press OK to close it.

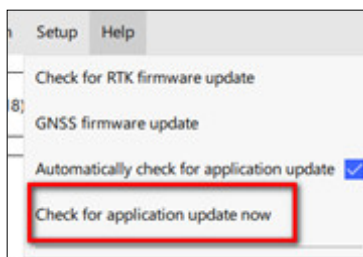


Figure 9.h

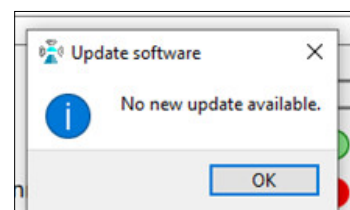


Figure 9.i

- E. Flag the checkbox on the “Automatically check for application update” (Figure 9.j) to leave the AvMap RTK configuration tool checking automatically for updates;

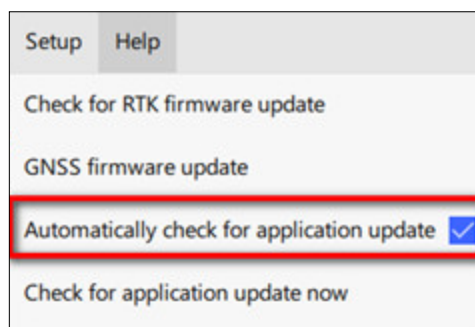


Figure 9.j

- F. Tap on “Help” button and then on “GNSS firmware update” (Figure 9.k). If new firmware is available popup shown in Figure 9.l shall appear (GNSS firmware version indicated is for illustrative purpose, version may vary).

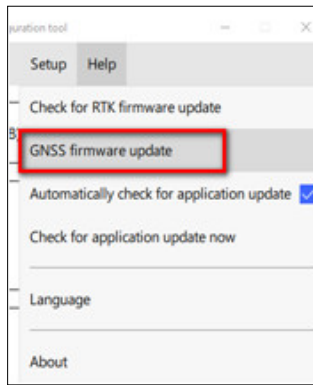


Figure 9.k

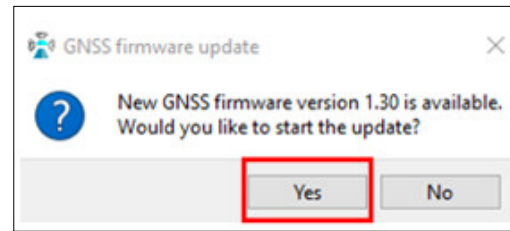


Figure 9.l

ATTENTION: The update will delete the actual GNSS configuration (NMEA messages, baudrate, etc.). Please save the configuration before starting the update process.

Press “YES” to start the update, window shown on Figure 9.m shall appear; updating firmware process is in progress.

Once update is finished a confirm message will appear as in Figure 9.n. Click on “Close” button, then power off the RTK antenna.

ATTENTION: Keep the RTK antenna powered on during the update process.

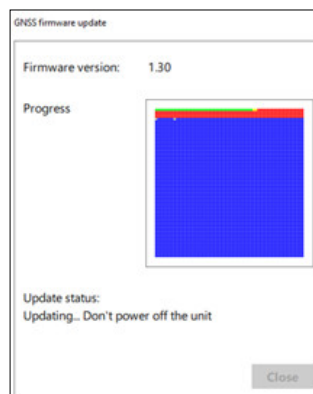


Figure 9.m

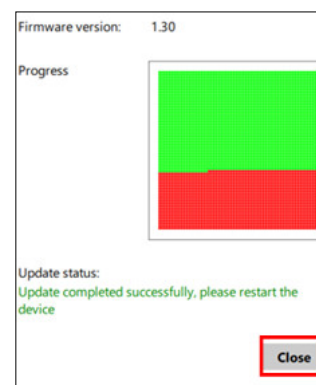


Figure 9.n

ATTENTION: the RTK antenna shall be powered on again to complete the update process. To restore completely the functionalities and output, is necessary to load the GNSS configuration file, if previously saved.

- G. Tap on “Help” button and then on “Language” (Figure 9.o) to open the window with languages list. Select language and click on “Apply” (Figure 9.p). New language shall be automatically applied.

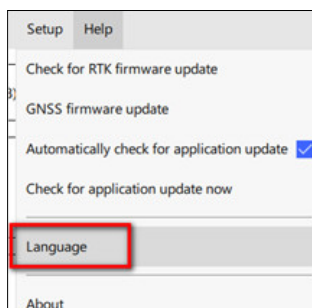


Figure 9.o



Figure 9.p

Annex 1

In case of 1Minute RTK-S antenna which is equipped with SIM slot, it is mandatory to fill “APN” , “User name” and “Password” fields (Figure 9.q).

The APN and, if needed, the related User name and Password are specific for each mobile network operator, you should search for them in the website of the mobile operator that has provided to you the SIM card.

NOTE: usually, only the APN is required to enable Internet connectivity.

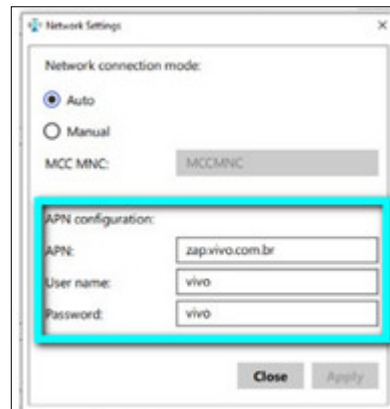


Figure 9.q

FTDI Drivers installation quick guide

1. Open “FTDI_DRIVERS” folder you can find into “RTKTerminal_vx.x.xR” package previously downloaded;
2. Copy and paste on your PC the whole “FTDI_DRIVERS_xxBIT” (Figure A.1) folder (“xx” stand for 32/64 bit version, choose the folder in according with PC features);

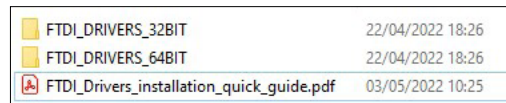


Figure A.1

3. Connect the Configuration cable USB plug to the PC (Figure A.2);
4. On your PC access to “This PC” section, move cursor over an empty space and click right button of the mouse, then click on “Properties” (Figure A.3);

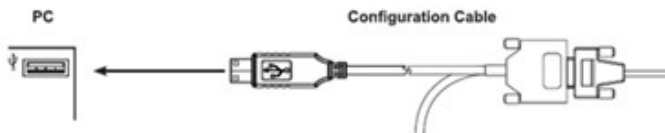


Figure A.2

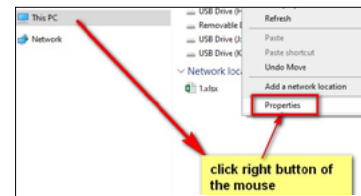


Figure A.3

5. Click on “Device Manager” and, on Device Manager list, click the arrow near to “Ports (COM&LPT)” to open drop-down menu (Figure A.4);
6. Click on “USB Serial Port (COMx)” (where “x” is the number of COM port) and click right button of the mouse; on next popup click on “Update Driver Software” (Figure A.5);

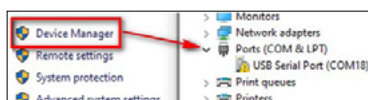


Figure A.4

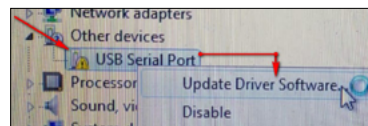


Figure A.5

7. New window shall appear, click on “Browse my computer for driver software” option (Figure A.6), new window shall appear, then click on “Browse” button (Figure A.7);

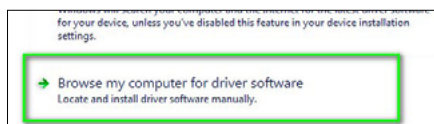


Figure A.6

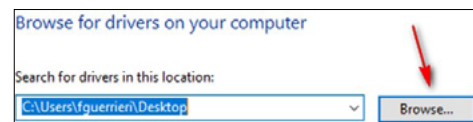


Figure A.7

8. New window shall appear, select the path of your PC where the “FTDI_DRIVERS_xxBIT” folder has been stored before, then press “OK” (Figure A.8); the window shall close, then select “Next” button to proceed (Figure A.9);

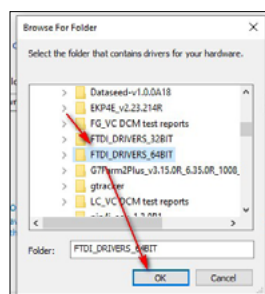


Figure A.8

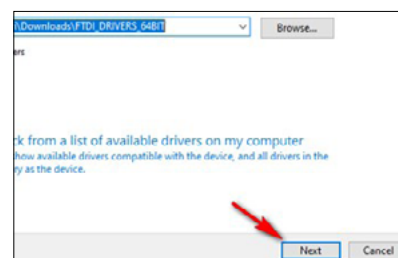


Figure A.9

9. “Installing driver software” popup shall appear (Figure A.10); at the end of the installation, new popup will show confirm message (Figure A.11);

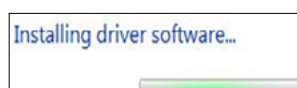


Figure A.10

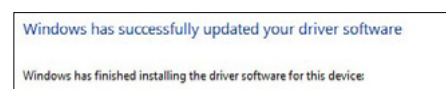


Figure A.11

You are now ready to connect your Receiver to the PC through the All in One RTK Configuration cable.



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