



NS-START.Pro

Operating Manual

Contents

Introduction	3
Installation	4
Controls and display description	5
Operations	6
• Screens and modes.....	6
• Switching power on and off.....	7
• Switching backlight on and off.....	8
• Run screen.....	9
• Start screen.....	9
• Timer.....	9
• Start line distance.....	10
• GPS data logger.....	12
• Waypoint screen.....	12
• Current GPS coordinates.....	14
• Max speed and average speed.....	14
Advanced operations	15
• SET mode.....	15
• PC mode.....	19
Limited Warranty	22
Disclaimer	23

Welcome to the **NS-START.Pro**

The **NS-START.Pro** has been designed to provide essential information with a very simple and user friendly interface. Speed, heading, timer, start line distance and GPS coordinates functions are all accessible at the push of a button and clearly displayed on the backlit LCD, ideal for night sailing and enhanced safety.

The new **NS-START.Pro** features a Bluetooth communication transceiver offering a wide range of functions and applications:

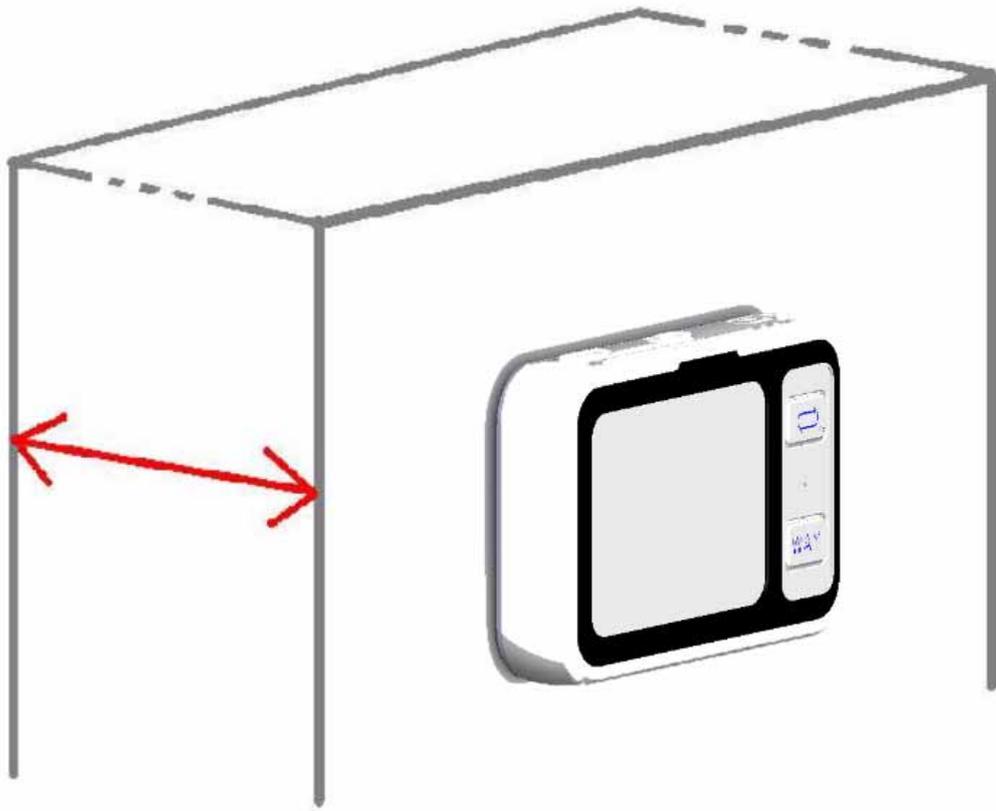
- Record up to 1248 hours of racing (1 point / 30 seconds)
- Replay on Google Earth and other navigational software
- Computer management of 10 waypoints, including their coordinates and descriptions
- Updates with new features

The usage of the **NS-START.Pro** is greatly simplified with large and dedicated buttons for starting the timer and defining the start line points at your finger tips.

Powered by only one AA battery, the **NS-START.Pro** gives sailors accurate information for over 30 hours. It can be installed in minutes and there is no need to drill a hole in the hull or use a wired connection.

We hope you enjoy sailing with the **NS-START.Pro**. We encourage you to read this manual thoroughly to learn about the many features of your exciting new NOVASAIL product.

Installation



Wherever you mount the **NS-START.Pro**, it shouldn't be flush to any thick surface such as the hull, so that the sensitivity of the embedded GPS receiver is not affected. Also a direct mount on a metal surface will reduce the receiver sensitivity.

Controls and display description

Buttons & display



Operations

Screens and modes

The **NS-START.Pro** has 2 main modes of operation : the RUN screen and the START screen. Switching screens is made by pressing the button .

RUN Screen

Course Over Ground- GPS Compass:
Speed Over Ground:

COG
SPE

START Screen

Timer:
Start Line Distance:

TIM
SLD

The **NS-START.Pro** has 1 Waypoint screen : it is displayed by by pressing the button .

Waypoint Screen

Course Over Ground:
Waypoint information:

COG
WAY

The **NS-START.Pro** has 1 information screen. The GPS coordinates and the average/max instant speed recorded during the current trip can be displayed by a holding  and  simultaneously (and another press on  or  to select the desired information)

Information screen

Current GPS coordinates

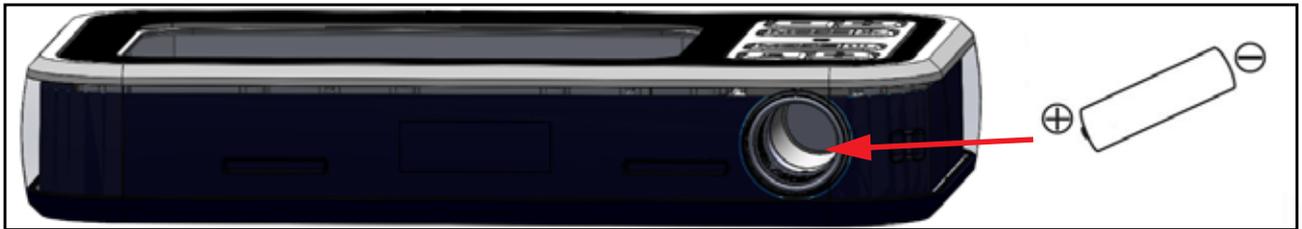
Latitude
Longitude

Max instant speed recorded
Average speed recorded

SPE MAX
SPE AVG

Switching power on and off

- Make sure the battery is installed with the correct polarity and has enough remaining power (positive pole inserted first)



- Press **WAY** to start the device. A beep will be emitted
- Press and hold **WAY** for more than 4 seconds until the screen displays OFF and the sequence “3”, “2”, “1” is finished. A beep will be emitted when the device turns off

The device will turn off automatically when it cannot receive any GPS signal for 20 minutes. A beep will be emitted 3 seconds before it turns off.

During the power up, the remaining time for the data logger is displayed for 5 seconds. This time, called GPS LOG, is given in hours as shown below.



Note : If the device does not turn on, check that the battery is fully charged, that the battery compartment is clean, dry and the polarity is correct. **No liquid should get into the battery compartment** otherwise this may cause internal damage. The 2 springs for the +/- battery contacts can be removed/cleaned as well as the bottom of the battery compartment with a small piece of cloth moistened with rubbing alcohol.

Operations

Note: Rinse with fresh water, do not use corrosive products. Especially any petroleum/mineral based product will damage permanently the plastics and rubber parts (the warranty will be void). For example never use (non exhaustive list): white spirit, acetone, any spray or liquid contact cleaner, grease remover, do never spray any product into the battery compartment.

Note : Until enough satellites are locked, the **NS-START.Pro** is not ready to use. For all modes requiring the GPS data, the screen will display "---" until it is ready. If the number of satellites is low, the display will blink.

Note : Disposable alkaline batteries are not recommended, but can be used to reach the maximum 40-hour battery life of the **NS-START.Pro** . It is **mandatory** to remove disposable batteries if the device is not going to be used for a prolonged period of time (a week or more) to avoid **battery leakage**, as this will **irreversibly damage the battery compartment**. Therefore we recommend that rechargeable batteries with a low self discharge rate should be used (normal rechargeable batteries lose their stored energy quickly even when they are not being used), and will last for 30 hours or more. Recommended batteries are SANYO ENELoop, GP RECYKO+, UNIROSS HYBRIO (2000mA or more typical capacity).

Switching backlight on and off

- After the **NS-START.Pro** is turned on, the backlight is automatically switched ON/OFF by the internal light sensor detector.
- The backlight can be manually switched ON or OFF: press and hold the upper  for more than 1 second until the icon  is displayed on the screen.
- To turn off the backlight, press and hold the upper  for more than 1 second until the icon  disappears from the screen.

Note : Once the backlight has been switched ON or OFF manually, the automatic light sensor detector will no longer be used and will resume upon the next power cycle.

Note : In PC mode (see Advanced Operations, page 22), the backlight can be only switched ON or OFF manually.

Run Screen

This screen provides the heading and the speed of the vessel.

COG (compass), upper line : The course over ground (heading in degrees) as measured by the GPS receiver is displayed. The value displayed can be averaged, see the SET mode.

SPE (speed), lower Line : The speed over ground is displayed with a resolution of 0.1 knots (kts). The minimum speed is 0.5 knot, the maximum speed is 99.9 knots. The value displayed can be averaged, see the SET mode.

Start Screen

TIMER, upper Line : This mode offers a 5 minutes countdown timer, which can be synchronized to 5, 4 and 1 minutes.

When counting down, a short beep sounds:

- each minute until the last minute
- each ten seconds until 10 seconds
- each second until the start time '0:00'

At the start time:

- a long beep sounds
- the timer starts counting the race duration in minutes and hours

To synchronize the TIMER when it is stopped:

- Long press  to synchronize to 5, 4 or 1 minutes (starting time).

To start the TIMER:

- Short press  to start the timer from the value previously set.

Operations

To synchronize the TIMER when it is running:

- Short press  to synchronize to 5, 4 or 1 minutes. If the timer value is greater than 2:45, the timer will synchronize to 4 minutes. If lower than 2:45, it will synchronize to 1 minute. The timer continues counting down.

To stop the TIMER:

- Press and hold .

Note : With the GPS logger synchronized to the upcounting of the timer, the GPS logger stops when the timer is stopped or restarted in order to log the end of the current sail.

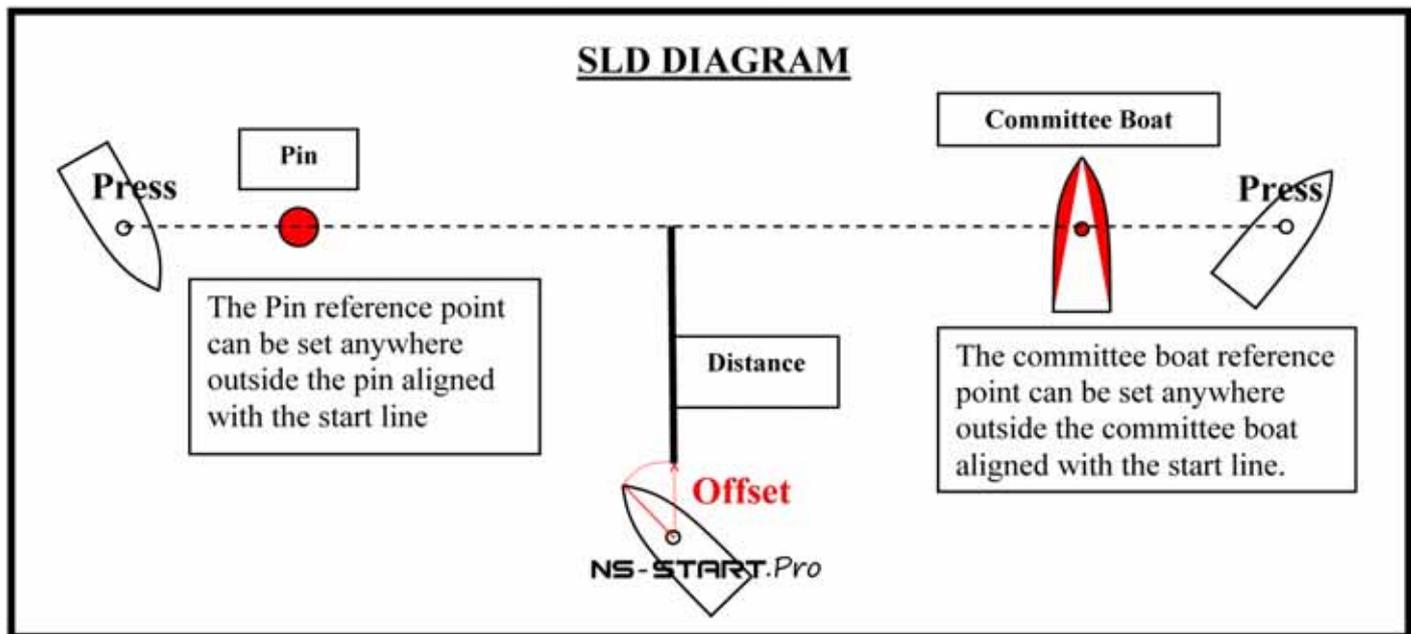
Note : When the countdown timer reaches '0:00', the timer and the start line distance will switch automatically to the 'RUN' screen (compass and speed).

Start Line Distance (SLD), lower line : knowing the exact distance in meters to the start line gives a huge advantage in helping you start ahead of the fleet and win the race. The boat offset parameter allows you to set the distance from the bow to the line.

The resolution of the distance to the line is 1 meter. The maximum distance is 999 meters.

The start line consists of 2 points which have to be aligned with the start line:

-  : Committee boat
-  : Pin



To memorize the start line points

- Press  when you reach the committee boat reference point.
- Press  when you reach the pin reference point.
- The distance in meters is now displayed on the data line.

Note : *If the start line is modified by the committee, you may be required to re-enter one or both reference points.*

Note : *The distance from the front of the boat to the **NS-START.Pro** can be defined in the SET mode.*

Note : *if the pin and the boat references are recorded with  and  (instead of  and ) the **NS-START.Pro** will show a sign '-' instead of a '+' for the distance to the line (only the sign is changed, the overall distance calculation is not impacted)*

Operations

GPS Data Logger

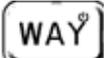
A GPS data logger is embedded in the **NS-START.Pro** allowing you to download all your sailing data to your computer using the

NS-START.Pro Wireless Manager PC app companion software.

Upon setting the GPS data logger start parameter, the logger will start recording as soon as enough satellites are locked and/or when the timer reaches '0:00'.

The recording interval can be set using the parameter GPS Logger Timing (see the SET mode, page 18 for details).

Waypoint screen mode: Wxx

The Waypoint screen is entered by pressing . This mode displays information such as the direction, angle difference, projected speed and distance to reach the selected pre-defined waypoint. Up to 10 waypoints can be memorized: W00 to W09. For each waypoint selected: the direction, the heading difference between the boat and the direction to the waypoint, the projected speed and the distance needed to reach it are displayed sequentially.

Note: The display timings of the directions, angle, speed and distance are defined by the parameters Waypoint Heading, Waypoint Speed, Heading Difference and Waypoint Distance in the SET mode (also settable in the "NS-START.Pro Novasail Wireles Manager" PC software). Please refer to the installed online documentation for more details.

Note: If all the display durations are set to 'OFF' the Waypoint screen mode will be disabled.

To use a waypoint

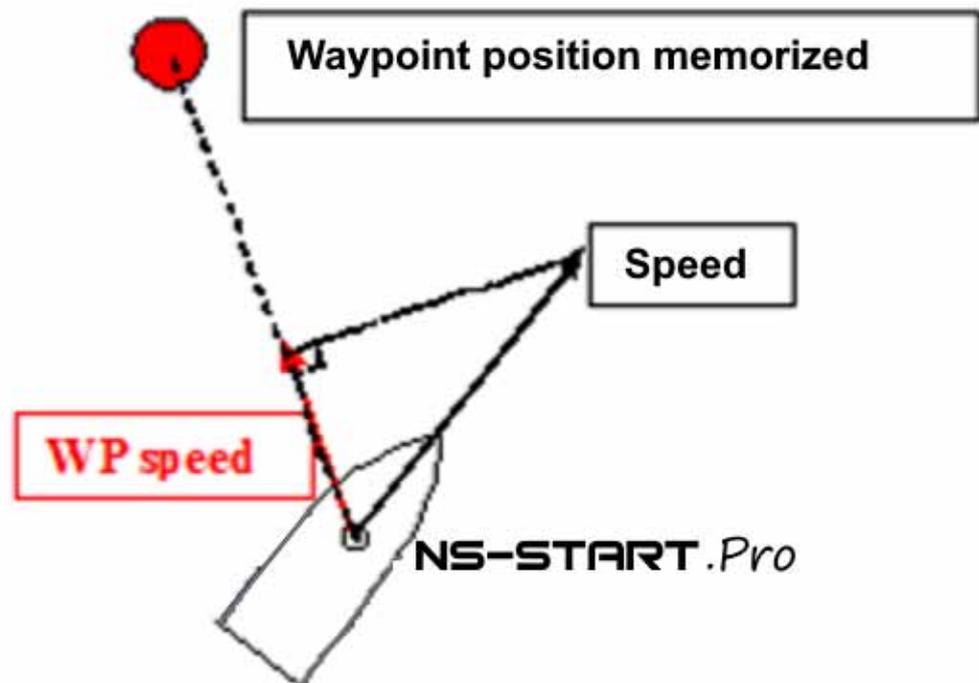
- By default, W00 is displayed on the mode line.
- Press the button  to select the required waypoint, from W00 to W09.
- The direction, speed, distance and heading difference are displayed sequentially.

To Memorize a waypoint while sailing

- The waypoint screen must be displayed. Press **WAY** to select the waypoint (from W00 to W09) that you want to overwrite.
- Press and hold the button **WAY** to memorize the current boat position into the selected waypoint. The screen will display “WAY SAVE”, release the button **WAY** to confirm the memorization.
- The direction, speed and distance to reach it are displayed sequentially.

Note: If the **WAY** button is pressed for a prolonged period of time the **NS-START.Pro** will enter the shutdown sequence: the memorization will be skipped and no position will be recorded.

Note: The waypoint speed displayed in knots is calculated using the waypoint position, the boat position, the boat speed and the heading.



Operations

Information screen : current GPS coordinates

This mode allows the latitude and longitude of the current position to display (in degrees and decimal minutes). To activate this mode, press the arrows  and  simultaneously (if needed select this screen by a subsequent press on  **OR** ). The latitude is displayed on the upper line and the longitude on the lower line. Press  or  to exit this mode.

Information screen : max speed and average speed

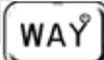
This mode allows the display of the max instant speed on the upper line and the max average speed on the lower line. To enter this mode, press the arrows  and  simultaneously (if needed select this screen by a subsequent press on  **OR** ). The average speed (lower line, 'AVG x', x=3 to 10) is computed on a 3 to 10 seconds time interval, based on the parameter entered in the setup menu (*see the SET mode, page 11 for details*). Press  or  to exit this mode.

SET mode

The **SET** mode allows the adjustment of your **NS-START.Pro** parameters sequentially as follows :

- Speed sensitivity
- GPS heading sensitivity
- Boat offset
- GPS logger interval
- GPS logger start condition
- Average speed timing in seconds
- Current embedded firmware version

To enter the SET mode :

- Your device must be switched OFF.
- Press first  then  simultaneously. The device will enter the setup menu: **SET** will be displayed on the upper line
- Each parameter is displayed on the lower line. The required value is adjusted by the button  or .
- The parameter is memorized when you press the button .
- The **SET** mode is exited by switching off the device (the current setting is memorized when switching off).

Name	Display	Description
Speed sensitivity	SPE	<ul style="list-style-type: none">• Hi: High sensitivity• Med: Medium sensitivity• Low: Low sensitivity
GPS heading sensitivity	COG	<ul style="list-style-type: none">• Hi: High sensitivity• Med: Medium sensitivity• Low: Low sensitivity

Advanced operations

Boat offset	BOA OFS	This is the length between the front of the boat and the NS-START.Pro . Default value 0, can be adjusted in 0.1 meter increments.
GPS logger Interval	LOG TIM	Timing interval between 2 data (GPS coordinates). Default is 3 seconds, can be adjusted in 1 second increments up to 30 seconds.
GPS logger start	LOG STA	<ul style="list-style-type: none"> • On (starts as soon as enough satellites are locked) • Off • Tim (starts when timer reaches 0:00)
Waypoint screen, display time for the heading to waypoint	WAY HEAD	0 (OFF) to 10 seconds display time
Waypoint screen, display time for the speed to waypoint	WAY SPE	0 (OFF) to 10 seconds display time
Waypoint screen, display time for the distance to waypoint	WAY DIS	0 (OFF) to 10 seconds display time
Waypoint screen, display time for the heading difference to waypoint	WAY DIFF	0 (OFF) to 10 seconds display time
Average time for the max speed	SPE AVG	3 to 10 seconds average time
Firmware version	VER	Firmware version number

Note: You can exit the SET mode any time by restarting the device.

Speed Over Ground sensitivity : SPE

- **Hi:** High sensitivity

The high sensitivity setting allows a very sensitive reading of any speed variation.

- **Med:** Medium sensitivity

This sub-mode provides an average speed of the boat over a short period of time. This is particularly useful when sailing with big waves upwind or downwind.

- **Lo:** Low sensitivity

This sub-mode provides an average speed of the boat over a longer period of time. This is particularly useful in rough conditions with lots of speed changes.

GPS Heading sensitivity : COG

- **Hi:** High sensitivity

When sailing with light winds and flat seas, high sensitivity allows you to appreciate very small wind variations.

- **Med:** Medium sensitivity

Medium sensitivity is more suitable for race boats under medium wind and sea conditions. Dinghy racers will appreciate this mode.

- **Lo:** Low sensitivity

Under low sensitivity more subtle variations due to big waves and sudden gusts are filtered.

Boat offset: BOA OFS

The boat offset corresponds to the distance from the front of the boat to the **NS-START.Pro**. The remaining distance to the start line is calculated by taking the boat offset into account. The default value is 0, the maximum value is 20.0 meters and the increment is 0.1 meter.

Example: The actual distance between the front of the boat to the **NS-START.Pro** is 3.2 meters. You need to enter a boat offset of 3.2 meters. Then, considering that the **NS-START.Pro** is 10 meters from

Advanced operations

the line, when you face the start line, the displayed remaining distance is equal to 10-3.2 meters, 6.8 meters rounded down to 6 meters.

GPS Logger interval: LOG TIM

The GPS Logger recording interval can be set between 1 to 30 seconds with a default value of 3 seconds. For example if set to 3, then every 3 seconds GPS data is recorded. Once downloaded on your computer, the lower the value of the interval the more accurate the trace and the post race analysis will be.

GPS Logger Start: LOG STA

- **OFF:** GPS Logger is turned off
- **ON:** The GPS Logger records the data when the **NS-START.Pro** is ON and as soon as enough satellites are locked
- **TIM:** The GPS Logger starts to record the data when the timer reaches 0 and continues until the timer is reset

Waypoint screen mode: data to waypoint display time

WAY HDG: display time for the heading to waypoint

WAY SPE: display time for the projected speed to waypoint

WAY DIS: display time for the distance to waypoint

WAY DIFF: display time for the heading difference to waypoint

Set the display time from 0 (OFF) to 10 seconds for the display of the data to WAYPOINT: the values are shown consecutively on the lower line

Average time for the recorded max speed: SPE AVG

The max speed displayed in the information screen mode (see “Information screen : max speed and average speed”, page 14) is averaged based on the time entered, from 3 to 10 seconds.

Firmware version: VER

The firmware version is displayed (for example: 1.3).

PC Mode

The **PC** mode is activated to exchange data between the

NS-START.Pro Bluetooth wireless transceiver and the computer. The "NS-START Pocket V2 Wireless Manager" software allows you to check the communication status, upgrade the embedded firmware & setup the device. Please refer to the Novasail Wireless Manager documentation for more details; the online manual can be open with a right click on the "NS-START.Pro Wireless Manager" main window.

To enter in PC connectivity mode

- With the product switched off, press first  then  simultaneously. "PC" is displayed on the data line of the upper screen (blinking) (blinking) with "blu" (bluetooth) shown
- To exit the PC mode, shutdown by pressing and holding the button .

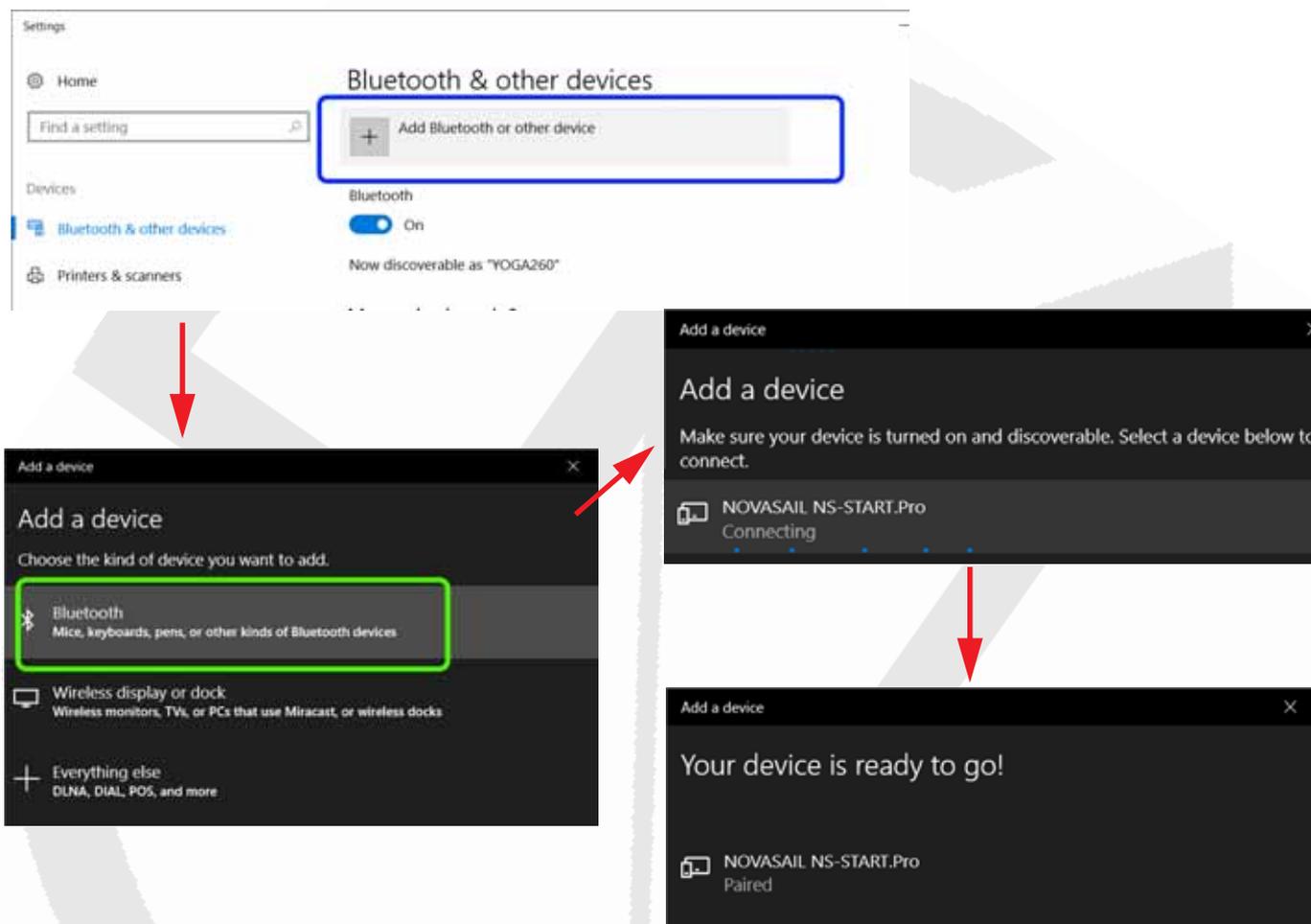
Troubleshooting

- Make sure the Bluetooth connectivity is activated on the PC
- Make sure to allow any Bluetooth device to find the PC in the operating system
- Close/re-open the "NS-START.Pro Wireless Manager" app. Remove the **NS-START.Pro** from the previously paired bluetooth devices and launch a new pairing process
- Make sure the PC mode on the **NS-START.Pro** is turned on: "PC" **must** be blinking on the main display and "blu" (Bluetooth) must be shown on the lower line
- Confirm the **NS-START.Pro** is indicated on the available Bluetooth devices on the PC
- The message 'connected' should appear in green at the bottom of the "NS-START.Pro Wireless Manager" window within a minute (the delay is PC hardware dependant)

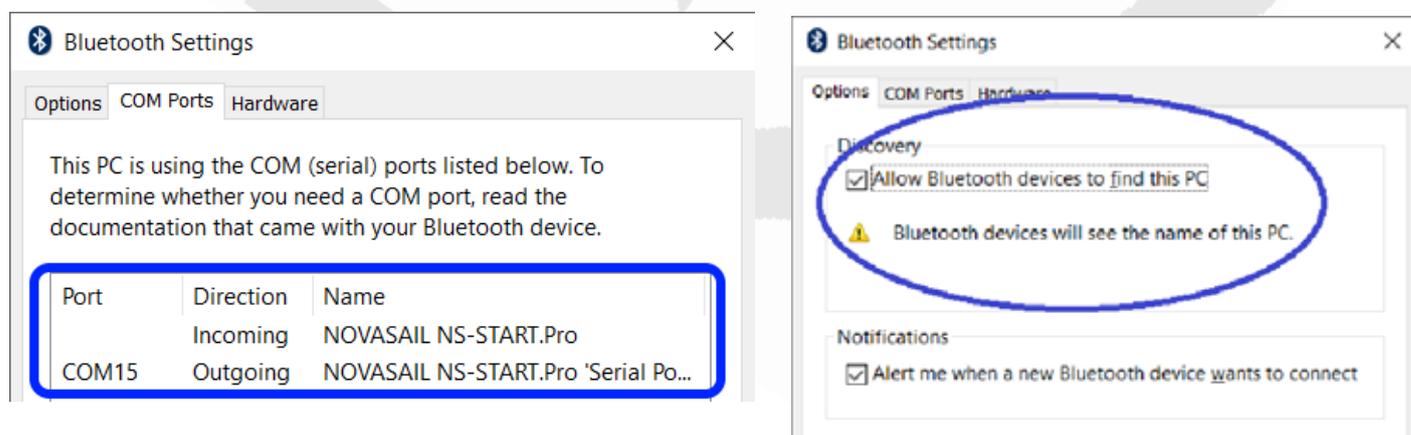
Note: *to save batteries the **NS-START.Pro** will shut down automatically if no PC connectivity is detected for 10 minutes.*

Advanced operations

Screen capture example, Windows 10 (version 1703/build 15063.413) Bluetooth settings. Once the **NS-START.Pro** is paired the device appears as followed:



In the Bluetooth options (Windows 10 screen capture), additional information should be displayed as followed (the COM port numbers may be different):



Version 1.0: First version

Version 1.1: Updated PC and SET mode entry

Version 1.2: Modified 'Switching power ON/OFF' chapter: corrosive products

Please visit www.nova-sail.com for the latest user manuals and updates.

Limited warranty

This product meets or exceeds all of Novasail's rigorous quality controls and inspection standards. Complete services will be provided in accordance with the statement of warranty set forth below if any manufacturing defect or natural failure occurs within the warranty period.

Warranty Terms and Conditions

- If any defect arises under normal conditions of use within the warranty period, our customer service center or specified partner will provide the required repair services at no charge, or legally applicable services according to the appropriate consumer protection laws and regulations of the country in which the product was purchased by the warranty holder.
- The product has to be registered using the online service available on the Novasail web site: www.nova-sail.com
- Please submit the proof of purchase (Invoice) when requesting service.
- The actual cost of repair may be charged to the customer or the performance of warranty service may be rendered impossible, even within the warranty period, under the following circumstances:
 - Product failure caused by accident or carelessness
 - Disassembly or modification for purposes other than it was originally intended for
 - Failure caused by a fire, earthquake or flood
 - Damage/failure caused by an impact
 - Failure caused by inappropriate services performed by anyone other than Novasail's customer service center or one of Novasail's service specified partners
- For assistance in obtaining service, please contact Novasail service center:

E-mail: contact@nova-sail.com
www.nova-sail.com

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