Solo 2
GPS Lap Timer

User Manual 1.01

SOLO 2
SAT 21
11.7V
0:33.5 RunT
7 nLap
1:04.81 best
Brands Hatch
LOG

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Solo 2
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SOLO 2
SAT 21 11.7V
0:33.5 RunT
7 nLap 1:04.81 best
Brands Hatch LOG

1. Solo2 in a few words

What is Solo 2?

Solo 2 is the new AiM GPS Laptimer.

Why Solo 2?

Because it features:

- integrated GPS + Glonass receiver
- a huge tracks database that Solo 2 manages to automatically select the track where you are racing
- a powerful and comfortable Wi-Fi connection
- different type of races: speed and performance
- 10 RGB LEDs that clearly show you if you are improving or not
- a huge amount of internal memory (four gigabytes) capable of recording a lot of tests

SOLO 2
SAT 21
11.7V
0:33.5 RunT
1:04.81 best
LOG
7 nLap
Brands Hatch
AiM

2. What is in the kit?

Solo 2 kit includes:

- Solo 2
- Solo 2 power cable with car lighter socket
- Solo 2 power cable with AC adapter
- Solo 2 mounting bracket with screws
- Race Studio 3 software installation CD

3. Installation, powering and accessories

Thanks to its small dimensions and to the installation accessories, Solo 2 can be installed on almost any kind of motorsport vehicle.
The internal battery keeps Solo 2 alive for about 4/5 hours: please keep in mind that the power consumption depends on the activity of:

- WiFi (about 100 mA/hour when ON)
- Backlight
- Shift Light LEDs
- GPS tracking: at the power ON, Solo2 starts searching the satellites: this activity is rather power consuming and continues for about 40- 50 seconds; after this short period, the power consumption sensibly decreases.

Solo 2 can anyway be powered by a 12V, not stabilized, external power source.

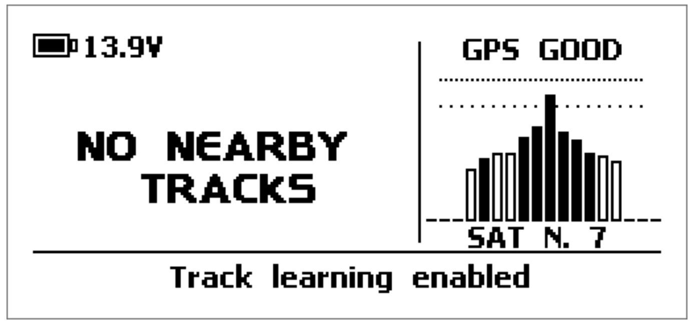
■ support for roll-bar: X46KSTG00

■ support for generic tube: X46KSTP00

■ support for suction cup: X46KSVS00

4. At power on

When switched on Solo 2 shows satellite page.

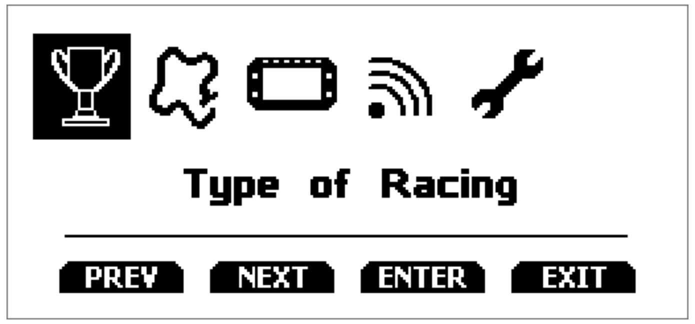


13.9V
GPS GOOD
NO NEARBY TRACKS
SAT N. 7
Track learning enabled

To optimize the display management, the keyboards disappears when not necessary. Please simply press one of the pushbuttons for making it show up again.

5. Configuration menu

Before using your Solo 2 you need to set some parameters as explained here below.
Press “MENU” and this page shows up.



Type of racing

Track management

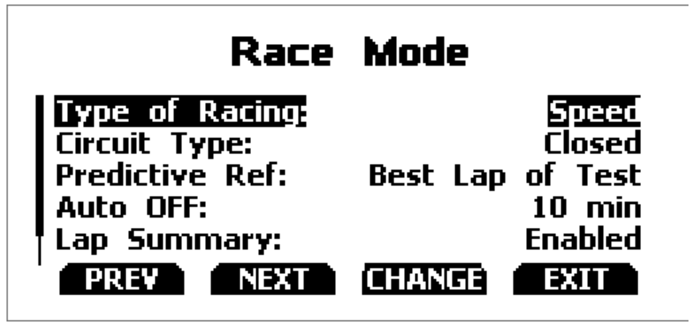
Display set up

Wi - Fi

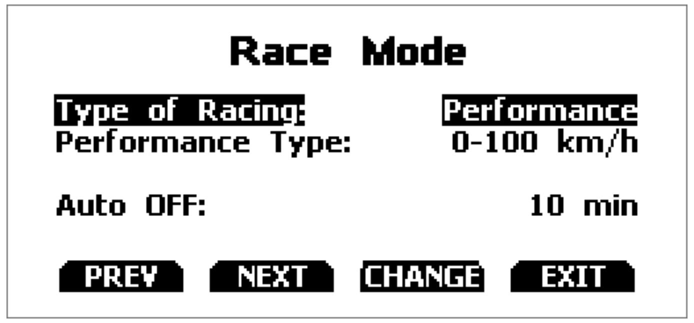
System settings

5.1 Type of racing

Solo 2 features two different type of races, each of them with different options:
- speed (left image below)
- performance (right image below)


Race Mode

Type of Racing: Speed
Circuit Type: Closed
Predictive Ref: Best Lap of Test
Auto OFF: 10 min
Lap Summary: Enabled


Race Mode

Type of Racing: Performance
Performance Type: 0-100 km/h

Auto OFF: 10 min

Speed racing

Solo 2 automatically selects the track in which you are performing: after having found the proper track, it may calculate, show and set:
- Circuit type: closed or open
- Predictive Reference lap: the time at the end of the current lap is computed looking at the actual speed, compared with a reference lap. The reference lap can be:
  - the best lap of the test or
  - the best lap of today

“Auto OFF”: a time time period of inactivity that switches your Solo 2 off. Available options are:
- 10 min
- 20 min
- 30 min

“Lap summary”: at the end of the test Solo 2 shows lap summary page. See chapter 7 “Data Recall” chapter for further information about it. Available options are
- enabled (default)
- disabled

Track width: can be set in a 5-100 m range

Performance racing:

This racing mode shows you different performance options according to the measure unit you set in “System settings” –> “Unit of measure”:
- using **imperial** unit of measure (mph) the available performance options are:
  - 0-60 mph
  - 60-0 mph
  - 1/8 miles
  - 1/4 miles
- using **decimal** unit of measure (km/h) the available options are:
  - 0-100 km/h
  - 0-160 km/h
  - 100 m
  - 150 m
  - 400 m
  - 1000 m

“Auto OFF” option sets the time period of inactivity that switches your Solo 2 off. Available options are:
- 10 min
- 20 min

5.2 Track management

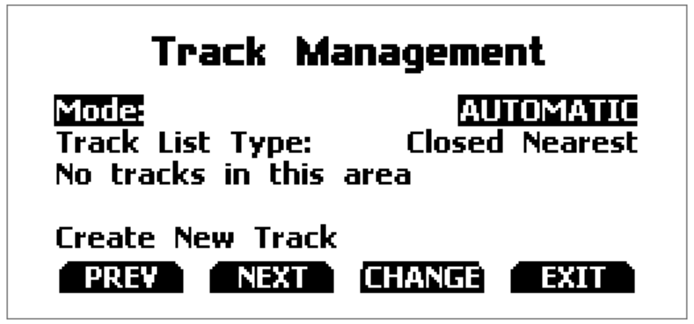
Solo 2 built in GPS receiver is used for:
- Lap time calculation
- Speed calculation
- Predictive lap time calculation
- Position on the track in Analysis.

To calculate these data the system needs to know the Start/Finish line coordinates.

Solo 2 comes with a long list of the world main tracks, list that is constantly updated by our technicians and is downloaded on your PC when you run our Analysis software and an Internet connection is available.

Solo 2 provides two track selection modes: automatic and manual.

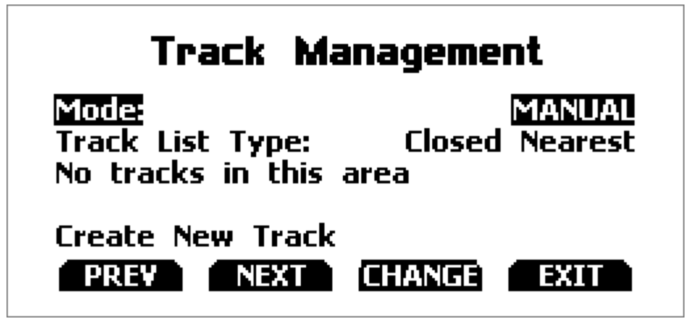
Automatic:
Solo 2 automatically recognizes the track you are running on, loads start/finish line and calculates lap times.
This is the best mode in most cases.


Track Management

Mode: AUTOMATIC
Track List Type: Closed Nearest
No tracks in this area

Create New Track

Manual:
allows you to manually select the track from the internal database.
This mode is to be preferred when multiple track configurations are available nearby. In this case Solo 2 would anyway recognize the track but would need at least one complete track lap.
To be ready from the first lap manual mode would be helpful.


Track Management

Mode: MANUAL
Track List Type: Closed Nearest
No tracks in this area

Create New Track

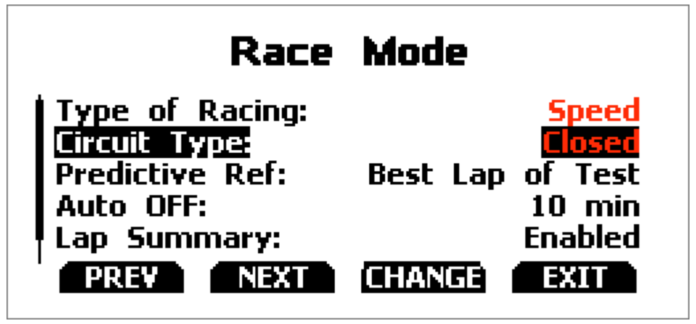
Both track modes provide three track list type:
- closed nearest: shows only tracks in a 10 km distance with max 50 tracks shown
- all tracks: shows all tracks stored in the system in alphabetical order
- custom: shows only the tracks you have previously created (learning mode)

5.2.1 Track creation with Solo 2

If you are running in a track NOT included in Solo 2 database you can create it. According to the circuit type you set in "Type of racing" (paragraph 5.1) you can create a closed (in automatic or in manual mode) or an open circuit (in manual mode only).

Creating a closed circuit automatically

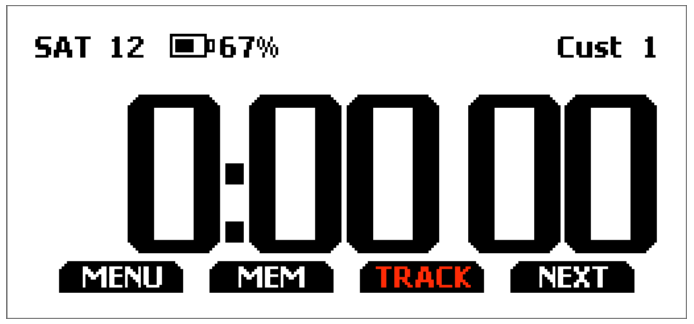
To create a closed circuit in automatic mode:
- ■ type of racing is to be "Speed" (paragraph 5.1)
- ■ circuit type is to be "Closed"


Race Mode

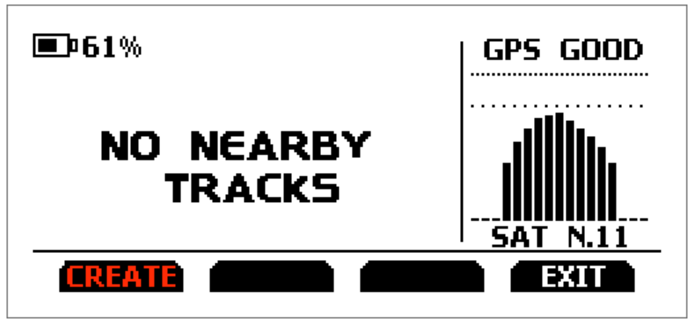
Type of Racing: Speed
Circuit Type: Closed
Predictive Ref: Best Lap of Test
Auto OFF: 10 min
Lap Summary: Enabled

PREV
NEXT
CHANGE
EXIT

From Solo 2 main page press any key and the bottom keyboard shows up: press "TRACK"

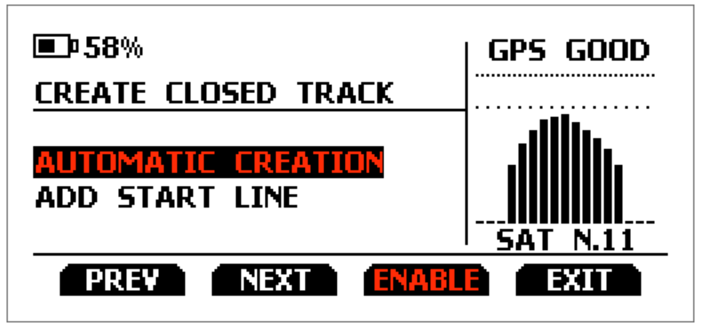

SAT 12
67%
Cust 1
0:00 00
MENU
MEM
TRACK
NEXT

Press "CREATE".


NO NEARBY TRACKS

61%
GPS GOOD
SAT N.11
CREATE
EXIT

Select "AUTOMATIC CREATION" and Press "ENABLE".
When GPS signal is good Solo 2 starts recording each track point.
When it detects it is crossing the same point for the second time it defines a temporary start/finish line in order to show lap times.
Solo 2 automatically creates a track.
As soon as the session is over the new track layout is displayed; start/finish line can be changed and a track name can be added using the device keyboard.

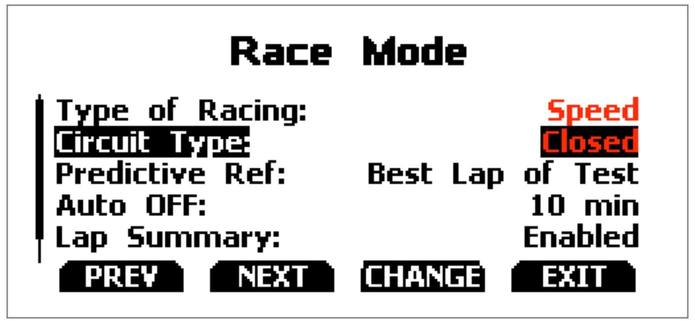

CREATE CLOSED TRACK

AUTOMATIC CREATION
ADD START LINE

58%
GPS GOOD
SAT N.11
PREV
NEXT
ENABLE
EXIT

Creating a closed circuit manually

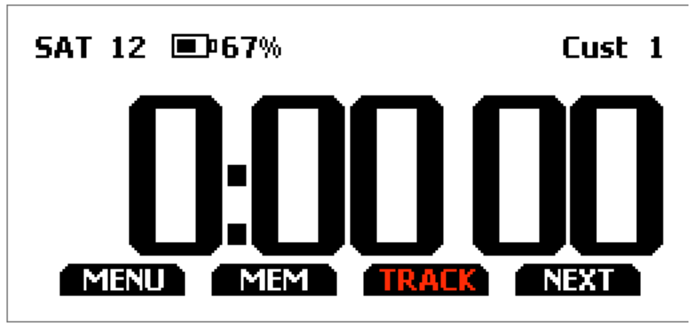
To create a closed circuit in manual mode:
- ■ type of racing is to be "Speed" (paragraph 5.1)
- ■ circuit type is to be "Closed"


Race Mode

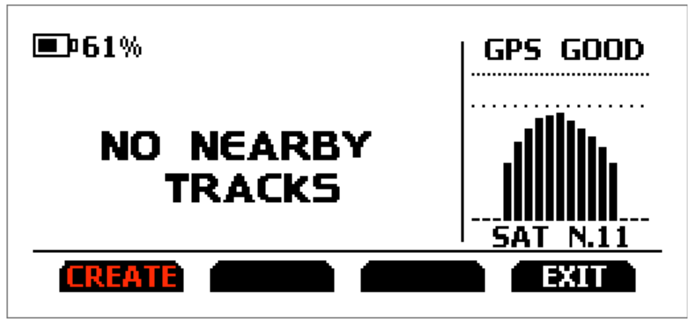
Type of Racing: Speed
Circuit Type: Closed
Predictive Ref: Best Lap of Test
Auto OFF: 10 min
Lap Summary: Enabled

PREV
NEXT
CHANGE
EXIT

From Solo 2 main page press any key and the bottom keyboard shows up: press "TRACK"

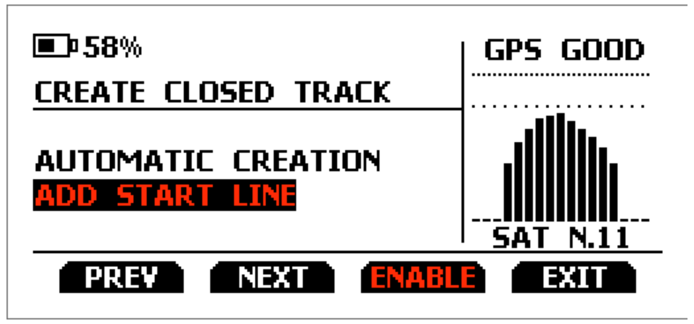

SAT 12
67%
Cust 1
0:00 00
MENU
MEM
TRACK
NEXT

Press "CREATE".


NO NEARBY TRACKS

61%
GPS GOOD
SAT N.11
CREATE
EXIT

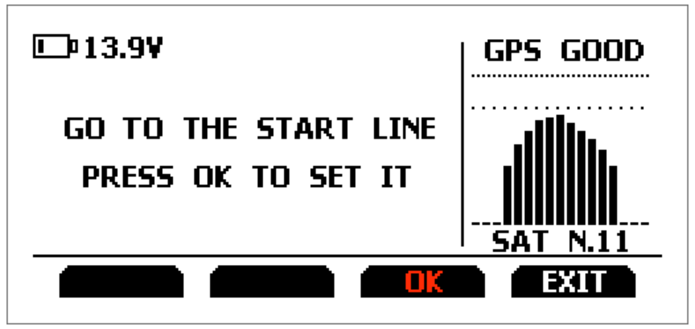
Select "ADD START LINE" and Press "ENABLE"


CREATE CLOSED TRACK

AUTOMATIC CREATION
ADD START LINE

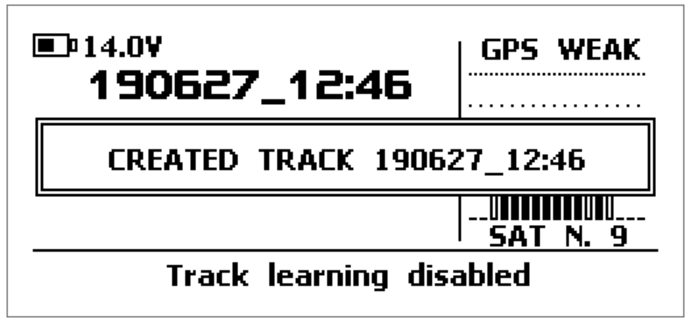
58%
GPS GOOD
SAT N.11
PREV
NEXT
ENABLE
EXIT

Go to the start/finish line and press "OK".


GO TO THE START LINE
PRESS OK TO SET IT

13.9V
GPS GOOD
SAT N.11
OK
EXIT

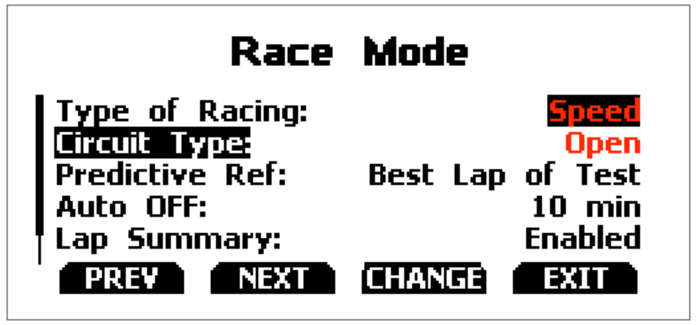
The track has been created.
Its name is track date and time


14.0V
190627_12:46
GPS WEAK
CREATED TRACK 190627_12:46
SAT N. 9
Track learning disabled

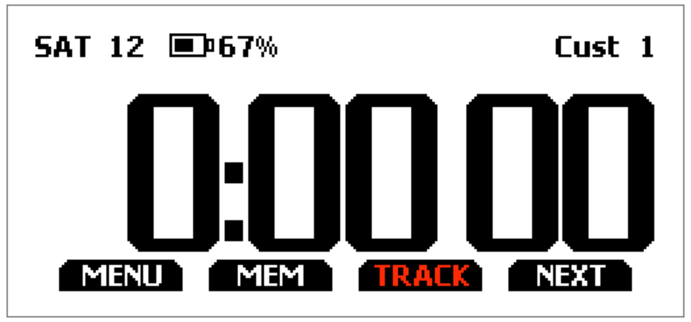
Creating an open circuit (only manually)

To create an open circuit:

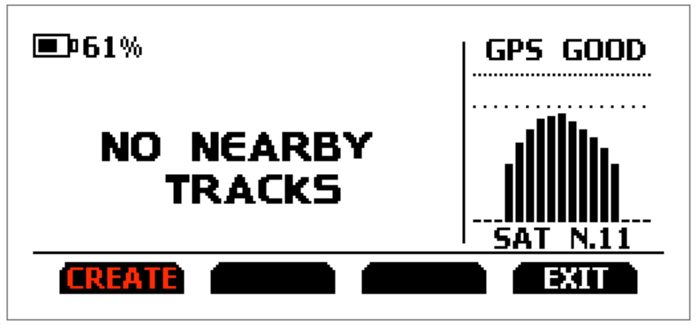
- type of racing is to be "Speed" (paragraph 5.1)
- circuit type is to be "Open"


Race Mode
Type of Racing: Speed
Circuit Type: Open
Predictive Ref: Best Lap of Test
Auto OFF: 10 min
Lap Summary: Enabled

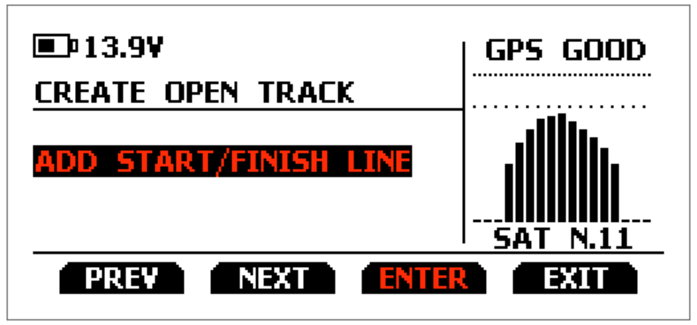
From Solo 2 main page press any key and the bottom keyboard shows up: press "TRACK"


SAT 12 67% Cust 1
0:00.00

Press "CREATE".

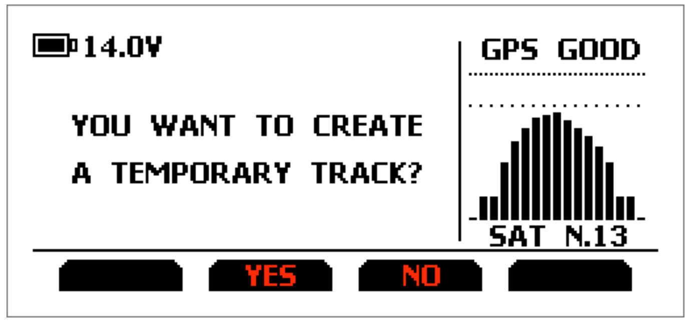

61%
GPS GOOD
NO NEARBY TRACKS
SAT N.11

Select "ADD START/FINISH LINE" and
Press "ENTER"

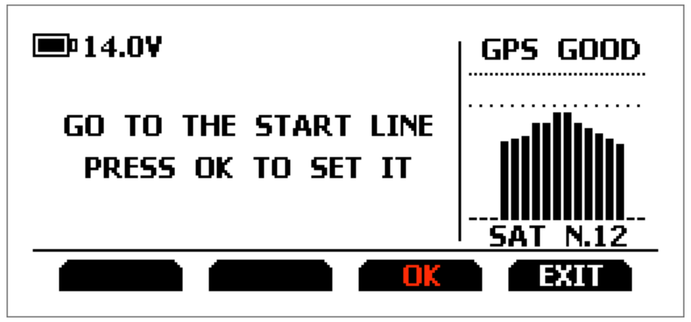

13.9V
GPS GOOD
CREATE OPEN TRACK
ADD START/FINISH LINE
SAT N.11

Solo 2 allows the user to create a temporary track::

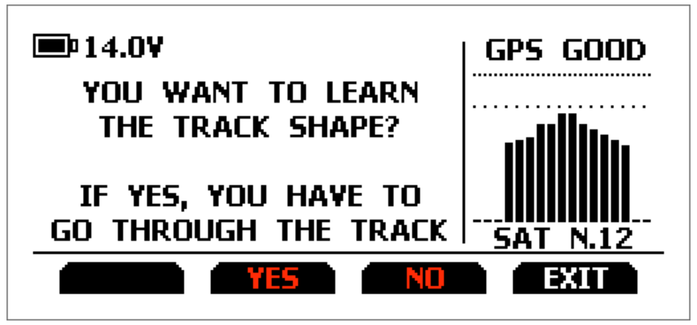
- "Yes": Solo 2 creates a track that will be available until the following Tuesday
- "No": Solo 2 creates a track that will be saved in the device memory permanently


14.0V
GPS GOOD
YOU WANT TO CREATE A TEMPORARY TRACK?
SAT N.13

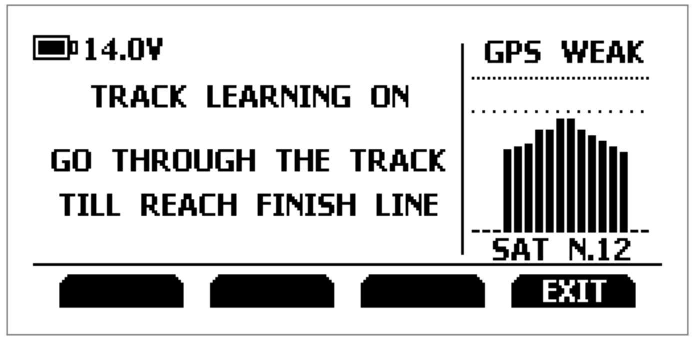
Ensure that GPS signal is "GOOD", go to the start line and press "OK"


14.0V
GPS GOOD
GO TO THE START LINE
PRESS OK TO SET IT
SAT N.12

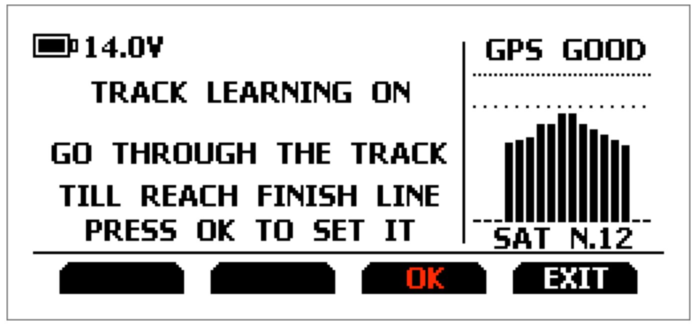
To acquire the track shape press "YES".


14.0V
GPS GOOD
YOU WANT TO LEARN THE TRACK SHAPE?
IF YES, YOU HAVE TO GO THROUGH THE TRACK
SAT N.12

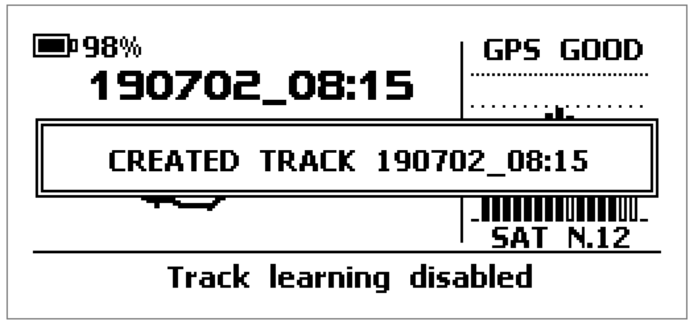
Go through the track towards the finish line to set it.


14.0V
GPS WEAK
TRACK LEARNING ON
GO THROUGH THE TRACK
TILL REACH FINISH LINE
SAT N.12

Please note:
Start and finish line distance has to be at least 10m.
Once this distance reached the display of Solo 2 shows an additional bottom line and "OK" button shows up: press it.


14.0V
GPS GOOD
TRACK LEARNING ON
GO THROUGH THE TRACK
TILL REACH FINISH LINE
PRESS OK TO SET IT
SAT N.12

The track is created named as date and time of the creation.



98%

190702_08:15

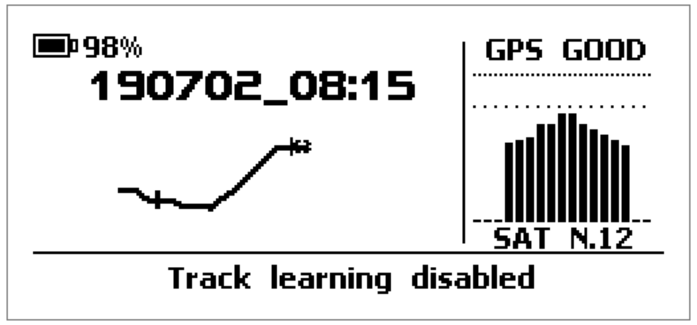
GPS GOOD

CREATED TRACK 190702_08:15

SAT N.12

Track learning disabled

The display shows its shape.



98%

190702_08:15

GPS GOOD

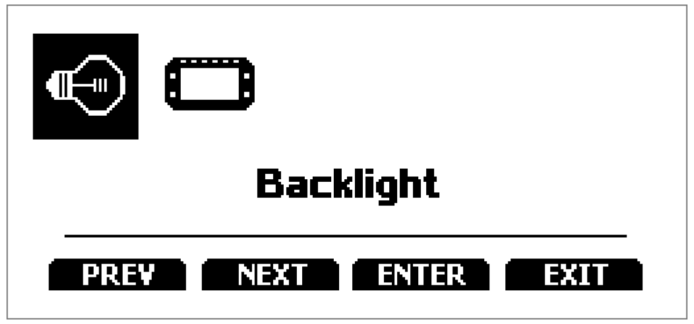
SAT N.12

Track learning disabled

For further information about track creation with Solo 2 refer to FAQ section, Solo 2, Lap Functions of www.aim-sportline.com.

5.3 Display setup

Selecting this icon the page shown below shows up.



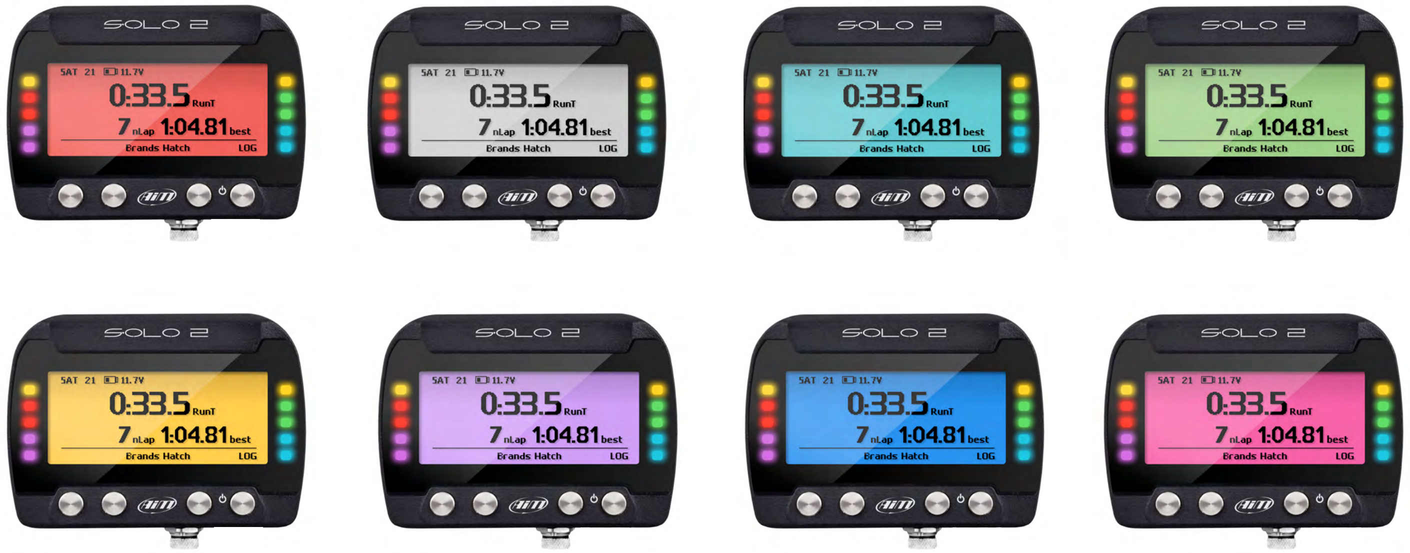
Backlight

PREV
NEXT
ENTER
EXIT

Here you can set the system backlight as well as its display pages.

5.3.1 Backlight

You can set Solo 2 backlight as “ON” (default setting) or “OFF” as well as choose among eight different colours:

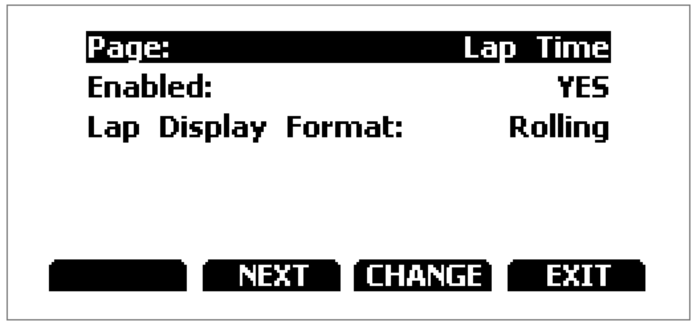


SOLO 2
SAT 21
11.7V
0:33.5 RunT
7 nLap 1:04.81 best
Brands Hatch
LOG

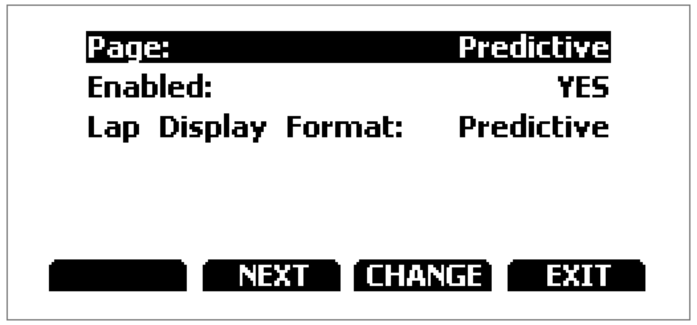
5.3.2 Pages Setup

Solo can show from two up to five pages according to the type of race you set.
Some pages are enabled by default and need to be set while other – custom, available only if you set type of race: "speed" – needs to be enabled before being set. The Pages enabled by default are:

- track page (see related paragraph)
- lap time page (left image below)
- predictive page (right image below – speed race only)



Page: Lap Time
Enabled: YES
Lap Display Format: Rolling



Page: Predictive
Enabled: YES
Lap Display Format: Predictive

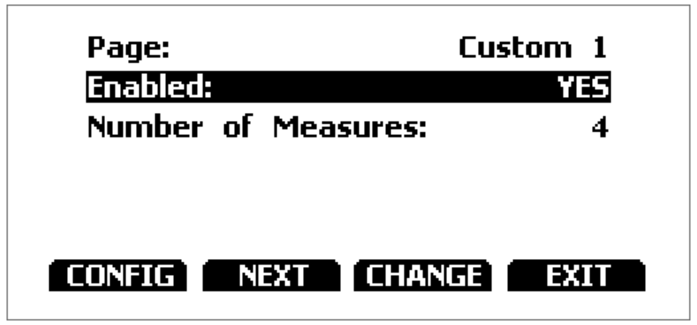
Lap time page: here you can set lap time format as:

- rolling: dynamic is shown for 5 seconds when you cross start/finish line and then starts rolling again
- static: shown steady for the entire lap; changes when crossing start/finish line

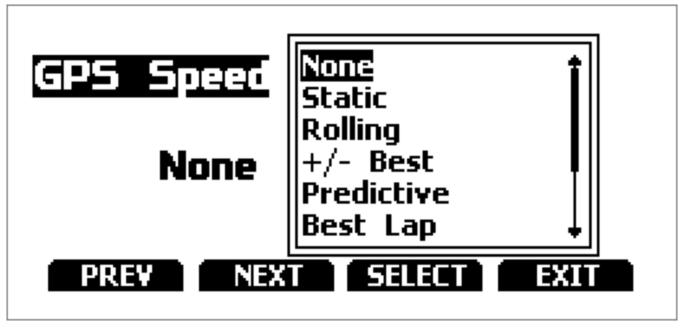
Predictive page ("Type of race: speed" only): here you can set lap time format as:

- predictive: shows the predicted time result
- +/- best: shows time gap between current lap and reference lap you set in "Type of race" menu

The two custom pages (speed race only) need to be enabled as shown here below. This way "CONFIG" button appears (right image below). Press it to configure the page. Each custom page can show up to four fields.
All fields can show all available options (left image below).



Page: Custom 1
Enabled: YES
Number of Measures: 4



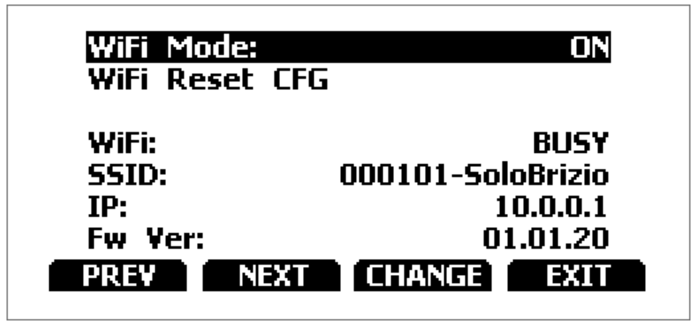
GPS Speed
None

5.4 Wi-Fi

Here you can manage Wi-Fi as well as reset its configuration. Wi-Fi modes are:

- ON
- Auto: switches Wi-Fi on when the vehicle is stopped and automatically switches it off when Solo 2 starts recording (speed higher than 10 km/h for 3 seconds with a good GPS signal)
- OFF

"Wi-Fi Reset CFG" allows you to reset Wi-Fi configuration and is very useful if you do not remember Wi-Fi password.

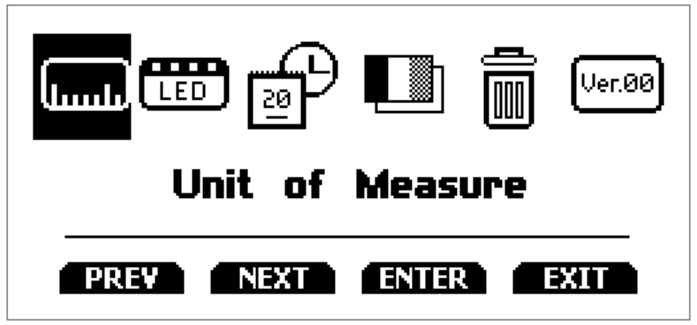


WiFi Mode: ON
WiFi Reset CFG

WiFi: BUSY
SSID: 000101-SoloBrizio
IP: 10.0.0.1
Fw Ver: 01.01.20

5.5 System settings

Selecting this icon you enter this page:



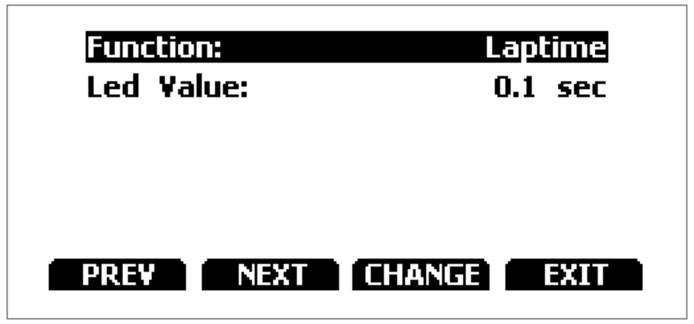
Unit of Measure

5.5.1 Unit of measure

You can set the measure unit of speed: km/h or mph.
Please remember that according to the measure unit you set here you will see different options in "Type of Race" menu if selecting "Performance" type (refer to the related paragraph for further information)

5.5.2 Led Bar (Type of race: speed only)

Selecting this icon you enter this page:


Function: Laptime
Led Value: 0.1 sec

Here you can set the 10 lateral LEDs of Solo 2 function and working mode (value).
Function can be:

- Laptime
- OFF

Led Value can be:

- 0.1 sec
- 0.2 sec
- 0.05 sec

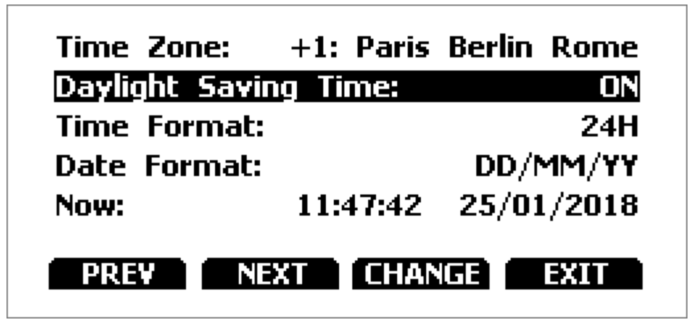
Working mode:
Setting Laptime mode the lateral LED switches on green or red indicating if your lap time is improving (green) or getting worse (red). The LED values indicate the time gap to be assigned to each LED. Assuming your lap time is improving of 0.3 sec toward the reference lap:

- if you selected 0.1 sec LED Value your Solo 2 will switch on 3 LEDs green;
- if you selected 0.2 sec LED value the green led will be 1;
- if you selected 0.05 LED value all your Solo 2 LED will switch on green.

SOLO 2
SAT 8
RPM
10752
KMH
196
AiM

5.5.3 Date Time

Here you can set the time zone of your Solo 2 as well as enable/disable "Daylight Saving time" option. Time zone is always set manually. Date and time can be shown in different format.
Time is automatically synchronized as Solo 2 receives the GPS signal.


Time Zone: +1: Paris Berlin Rome
Daylight Saving Time: ON
Time Format: 24H
Date Format: DD/MM/YY
Now: 11:47:42 25/01/2018

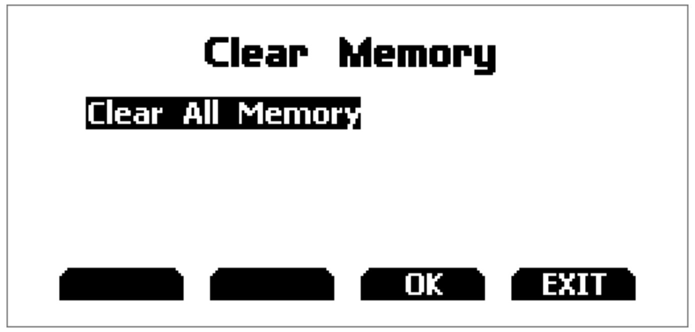
5.5.4 Language

You can set Solo 2 language. Default setting is English.
At present available languages are (in this order):

- English
- Italian
- Deutsch
- Spanish
- French
- Dutch
- Danish
- Portuguese
- Japanese
- Czech

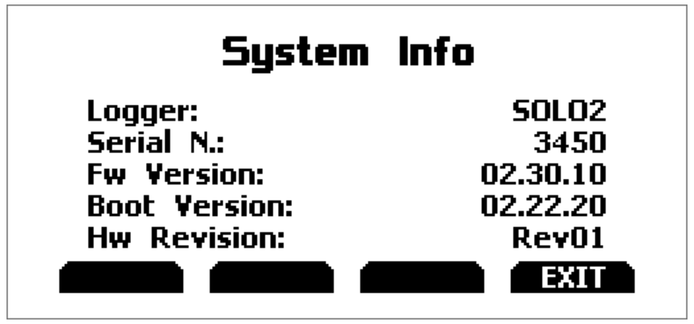
5.5.5 Clear Memory

To clear the memory of Solo 2 press "OK".


Clear Memory
Clear All Memory

5.5.6 System info

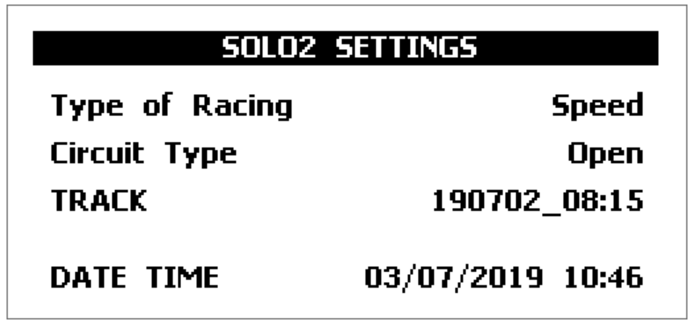
This page shows serial number as well as firmware and boot version and hardware revision of your Solo 2.


System Info
Logger: SOLO2
Serial N.: 3450
Fw Version: 02.30.10
Boot Version: 02.22.20
Hw Revision: Rev01

6 On the track

At switch on Solo 2 shows the device main settings:

- Type of racing
- circuit type
- track name: only if the track is in a 10km area
- date time: current date and time



SOLO2 SETTINGS

Type of Racing Speed

Circuit Type Open

TRACK 190702_08:15

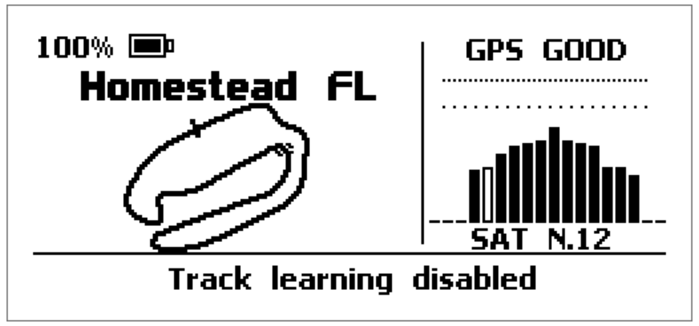
DATE TIME 03/07/2019 10:46

Some Solo 2 pages are available for online visualization.
To scroll them press "NEXT" ("Type of Race: Speed" only).
Pages can change according to the device configuration.

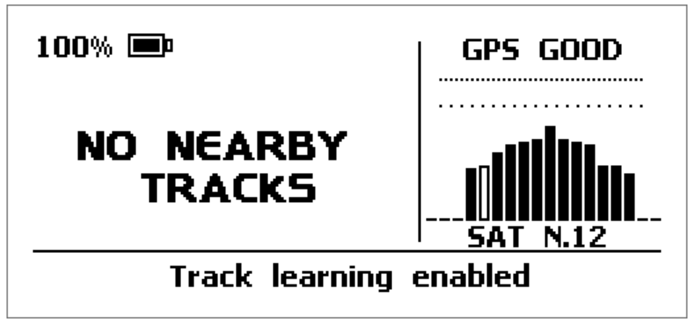
6.1 Track page

This page can be recalled pressing "TRACK" button.
It shows:

- on the left the selected track; you can select a new one manually or automatically ("MENU"/ Track Management); in case of "Automatic" selection the track is selected according to the coordinates of your vehicle; in case the track you are running on is not included in your Solo 2 database the laptimer switches to "learning mode" as shown in the bottom image here on the right
- on the right the satellite bar (visible satellites and signal level of each one) useful for evaluating the status of the GPS signal.



Track learning disabled



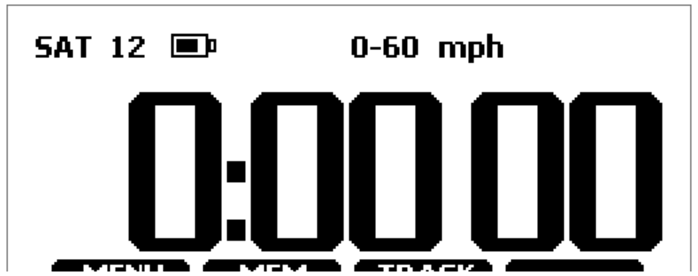
NO NEARBY TRACKS

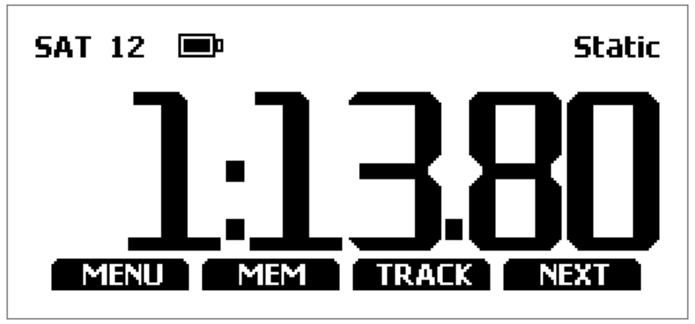
Track learning enabled

6.2 Other pages

Other available pages are: Laptime Page, predictive Page and two custom Pages.
Use "NEXT" button to scroll them.

Laptime page is shown no matter which type of race you set your Solo 2 on. It shows the lap time.





Predictive page shows the predicted current lap time in the format you set:

- +/- in relation to the Reference Lap
- Predicted lap time

Custom pages you may freely customize up to two pages for showing all the information you wish. The pages needs to be created and enabled as explained in Pages setup paragraph.

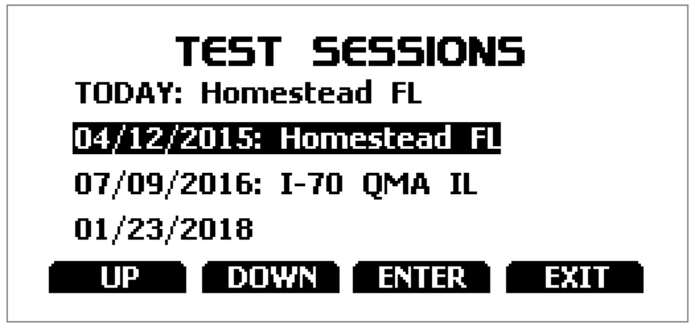
7 Data Recall

At the end of the test you can recall sampled data pressing "MEM". Data Recall is different according to the type of race you set your Solo 2 on.

7.1 Data Recall "Speed" mode

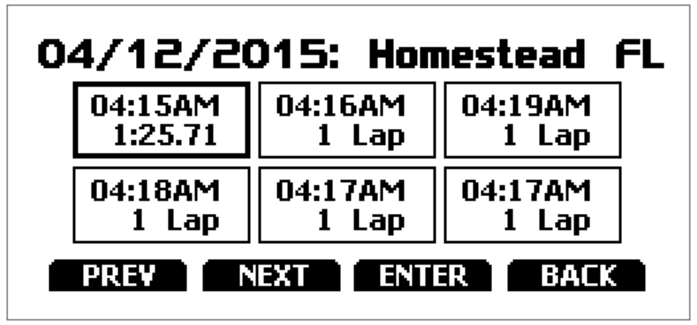
If you set "Type of Race – Speed" data recall shows these pages.

The first is "Summary page". Select the session you want to see and press "ENTER"



TEST SESSIONS
TODAY: Homestead FL
04/12/2015: Homestead FL
07/09/2016: I-70 QMA IL
01/23/2018

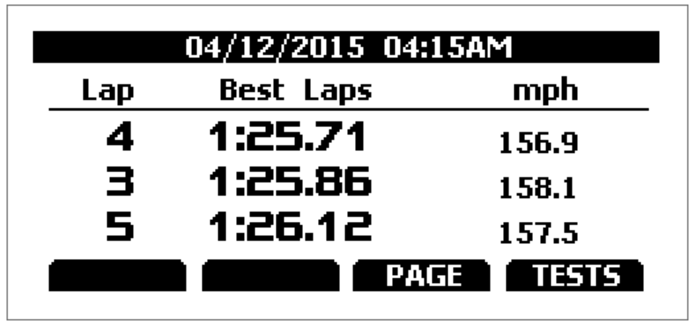
Once the session selected you see all tests in a box showing time of the test and best lap of the test.
Select the test you want to see and press "ENTER".



04/12/2015: Homestead FL

04:15AM 1:25.71	04:16AM 1 Lap	04:19AM 1 Lap
04:18AM 1 Lap	04:17AM 1 Lap	04:17AM 1 Lap

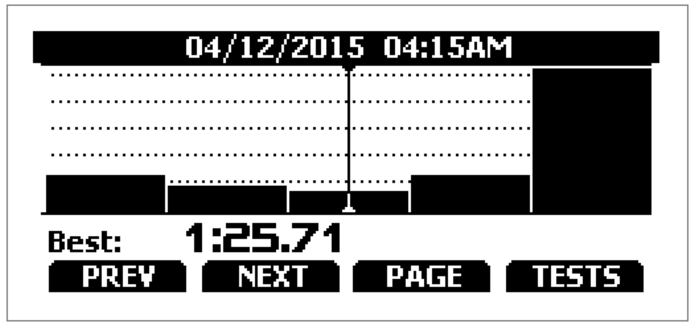
"Lap Summary" is to be enabled as explained in paragraph 5.1. This page shows the three best lap of the test with max speed value per every lap.
Press "PAGE"



04/12/2015 04:15AM

Lap	Best Laps	mph
4	1:25.71	156.9
3	1:25.86	158.1
5	1:26.12	157.5

This page is a histogram test summary. Moving the cursor left and right you can see all laps.

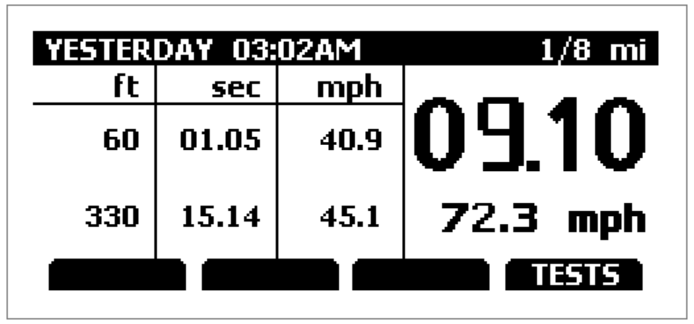


7.2 Data Recall "Performance" mode

If you set "Type of Race – Performance" data recall shows these pages.

If your test is max two hours old you are automatically forwarded to "Lap Summary" page. This page shows:

- the selected performance top right (1/8 mile in the example)
- the lap time and the speed in the right box (9.10 and 72.3 mph)
- a table showing length, time and speed at the of the performance and in a set split on the left
- press "TESTS"



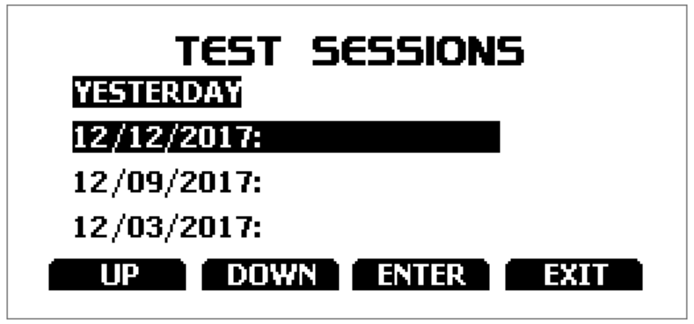
YESTERDAY 03:02AM 1/8 mi

ft	sec	mph
60	01.05	40.9
330	15.14	45.1

09.10
72.3 mph

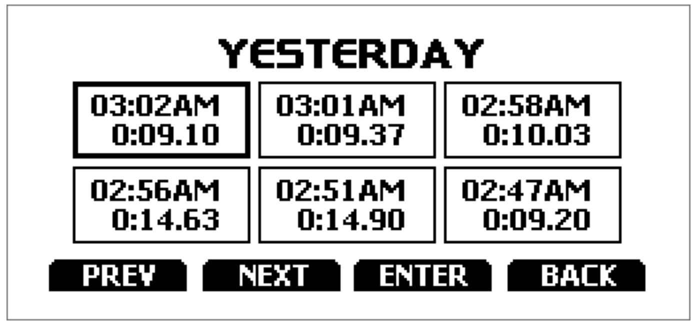
You come to "Test sessions summary" page, that is the first one you see if your last test is more than 2 hours old.

It shows all the sessions from the most recent backwards. Select the session you want to see and press "ENTER".



TEST SESSIONS
YESTERDAY
12/12/2017:
12/09/2017:
12/03/2017:

"Session page" shows you all the laps of the session from the most recent backwards.
Press "ENTER" to enter "TEST" page.



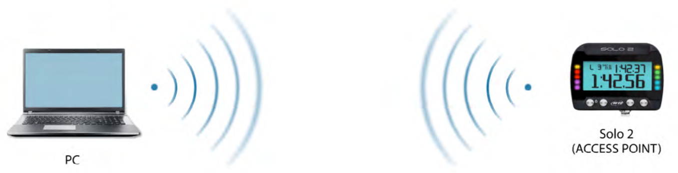
YESTERDAY

03:02AM 0:09.10	03:01AM 0:09.37	02:58AM 0:10.03
02:56AM 0:14.63	02:51AM 0:14.90	02:47AM 0:09.20

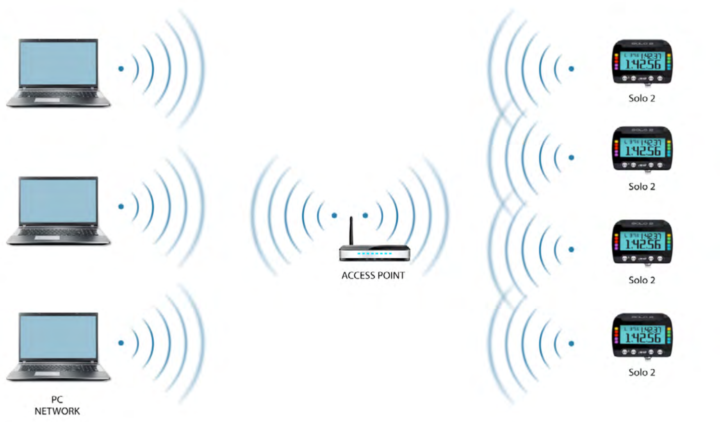
8 Wi-Fi configuration

Solo 2 configuration can be made only using Race Studio 3 software. Two possible Wi-Fi modes are available.

1 – As an access point (AP – default)
This is the ideal configuration if you have one only device and one only computer. In this situation your Solo 2 creates a Wi-Fi network and works as an Access Point you can connect your PC to.



2 – Existing network (to connect to an existing Wi-Fi network – WLAN)
This mode is complex and implies an external access point (AP) but it is also more flexible and powerful because allows you to communicate with more than one device and with more than one computer in the same network. Solo 2 and the PC must connect to an existing Wi-Fi network made by a device that works as an external access point.



When working in WLAN mode Solo 2 has two available security levels:

- network authentication: network password
- device authentication: Solo 2 password

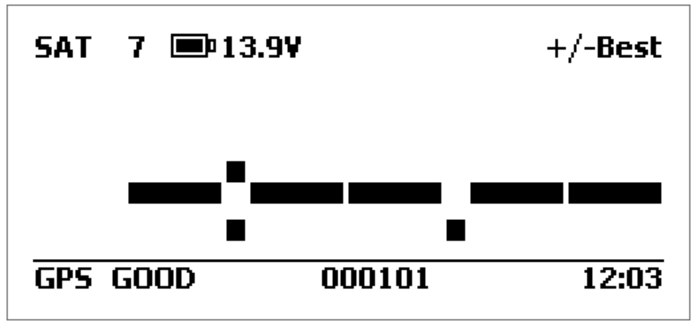
Both levels allow you to use different strategies. A PC in WLAN, for example, can see several AiM devices but can communicate only with those he knows the password of.
If you forget the password you can reset Wi-Fi configuration from Solo 2 menu as explained before.

8.1 Configuring Solo 2 as an access point (AP)

This is Solo 2 default configuration and is the easiest and most direct connection mode, ideal if you want to communicate with one Solo 2 using one PC. It is free and so completely accessible by anyone.

Please set an access password as soon as possible.
To establish a Wi-Fi connection:

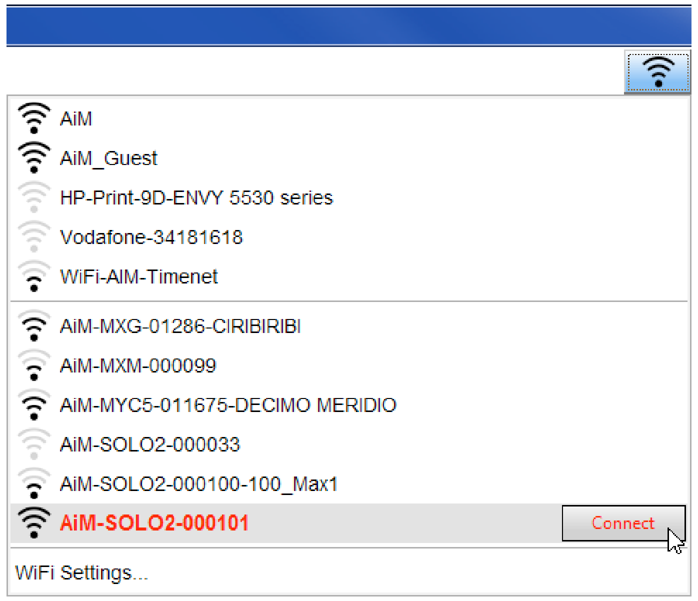
- ensure that the Wi-Fi is enabled
- read your Solo 2 Name



SAT 7 13.9V +/-Best

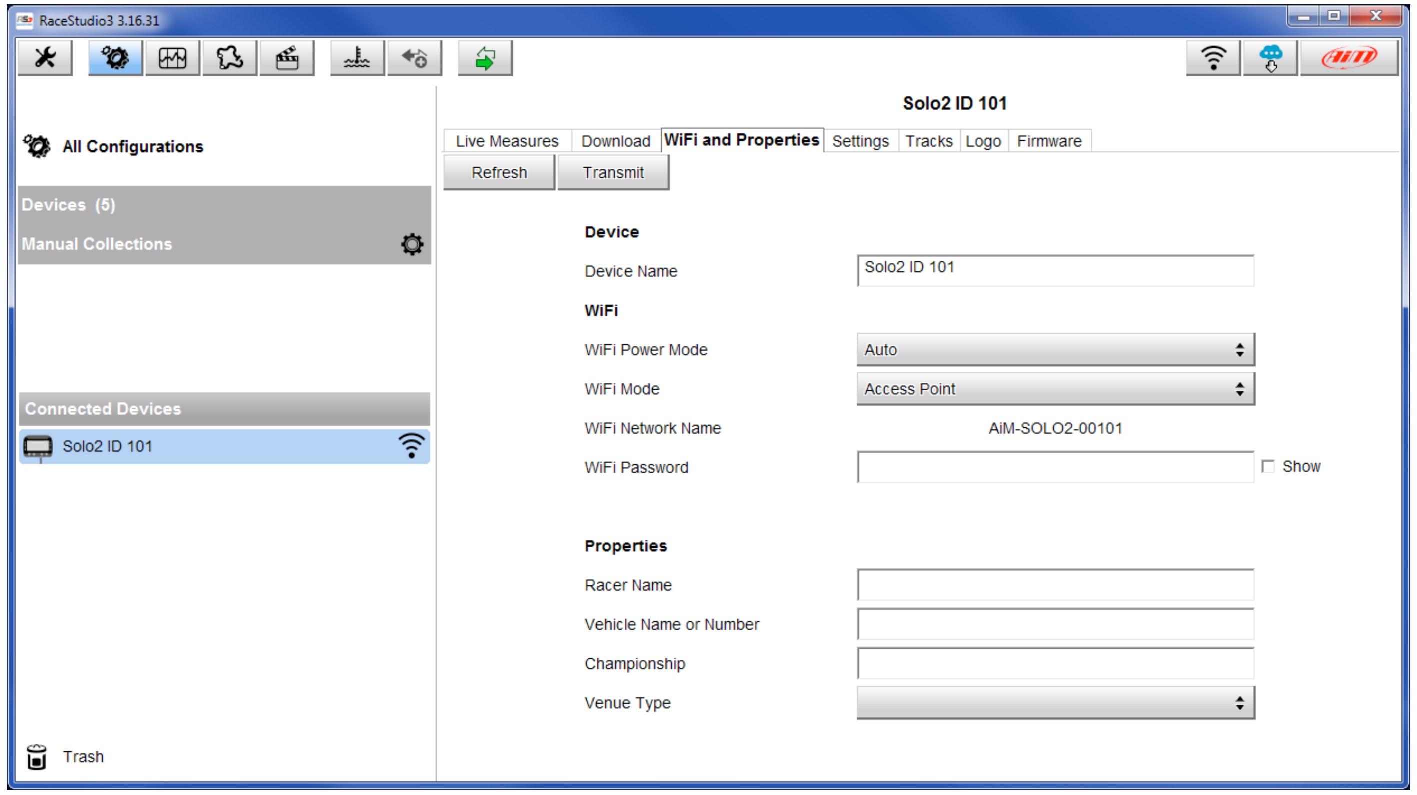
GPS GOOD 000101 12:03

- run Race Studio 3
- click Wi-Fi icon and select your device
- in a few seconds the connection is established



AiM
AiM_Guest
HP-Print-9D-ENVY 5530 series
Vodafone-34181618
WiFi-AIM-Timenet
AiM-MXG-01286-CIRIBIRIBI
AiM-MXM-000099
AiM-MYC5-011675-DECIMO MERIDIO
AiM-SOLO2-000033
AiM-SOLO2-000100-100_Max1
AiM-SOLO2-000101 Connect
WiFi Settings...

To set other parameters create a unique password to protect your device/your network. With a password, the communication is safe and encrypted using WPA2-PSK standard. Characters allowed in the password are all letters, capital too, all digits and these characters: ‘+-_()[]{}$£!?^#@*\\\”=~.:;/%”;
“Space” type can be used but not as first one not to cause incomprehension in some Windows™ versions.


RaceStudio3 3.16.31
All Configurations
Devices (5)
Manual Collections
Connected Devices
Solo2 ID 101
Trash
Live Measures
Download
WiFi and Properties
Settings
Tracks
Logo
Firmware
Refresh
Transmit
Show

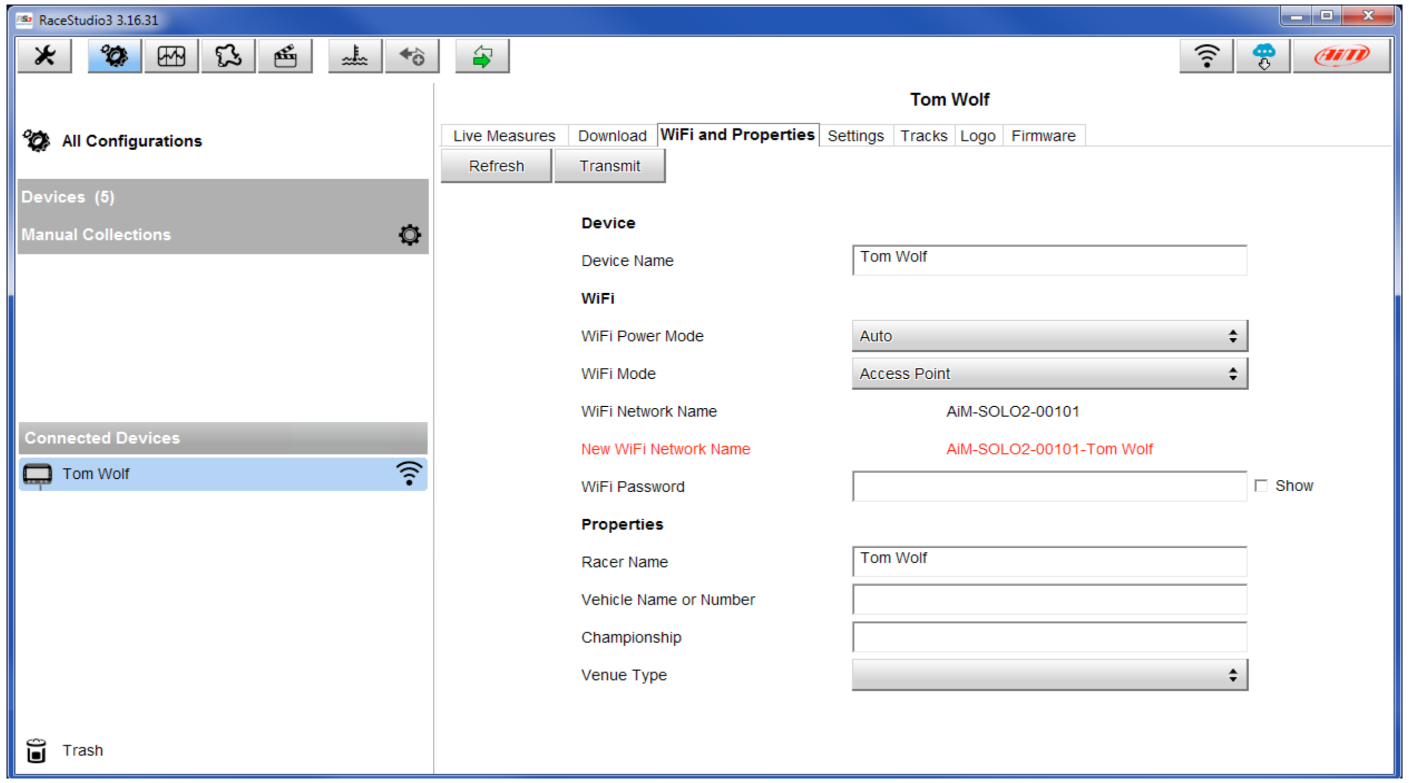
Solo2 ID 101

Device
Device Name: Solo2 ID 101
WiFi
WiFi Power Mode: Auto
WiFi Mode: Access Point
WiFi Network Name: AiM-SOLO2-00101
WiFi Password:
Properties
Racer Name:
Vehicle Name or Number:
Championship:
Venue Type:

This AP or SSID name is unique for your device.
An example of name is:” AiM-Solo2-00101” where:

- “AiM” is the prefix of all AiM devices
- “Solo 2” is the device identifier
- “00101” is your device serial number assigned by the factory.

To make your device more recognizable you can add a name to the SSID. The limit is of eight characters. Allowed characters are all letters, capital too, all digits and these characters: ‘+ - _ () [] {}!;
“Space” type can be used provided that it is not the first one because it can cause incomprehension in some Windows™ versions.
If, for example you add the driver’s name, Tom Wolf, the network name (SSID) becomes:
”AiM-Solo2-00101-TomWolf”
Once all parameters set click “Transmit”. Solo 2 reboots and is configured with the new parameters. If Solo 2 is protected by a password, as recommended, Race Studio3 will ask that password to authenticate


RaceStudio3 3.16.31
All Configurations
Devices (5)
Manual Collections
Connected Devices
Tom Wolf
Trash
Live Measures
Download
WiFi and Properties
Settings
Tracks
Logo
Firmware
Refresh
Transmit
Show

Tom Wolf

Device
Device Name: Tom Wolf
WiFi
WiFi Power Mode: Auto
WiFi Mode: Access Point
WiFi Network Name: AiM-SOLO2-00101
New WiFi Network Name: AiM-SOLO2-00101-Tom Wolf
WiFi Password:
Properties
Racer Name: Tom Wolf
Vehicle Name or Number:
Championship:
Venue Type:

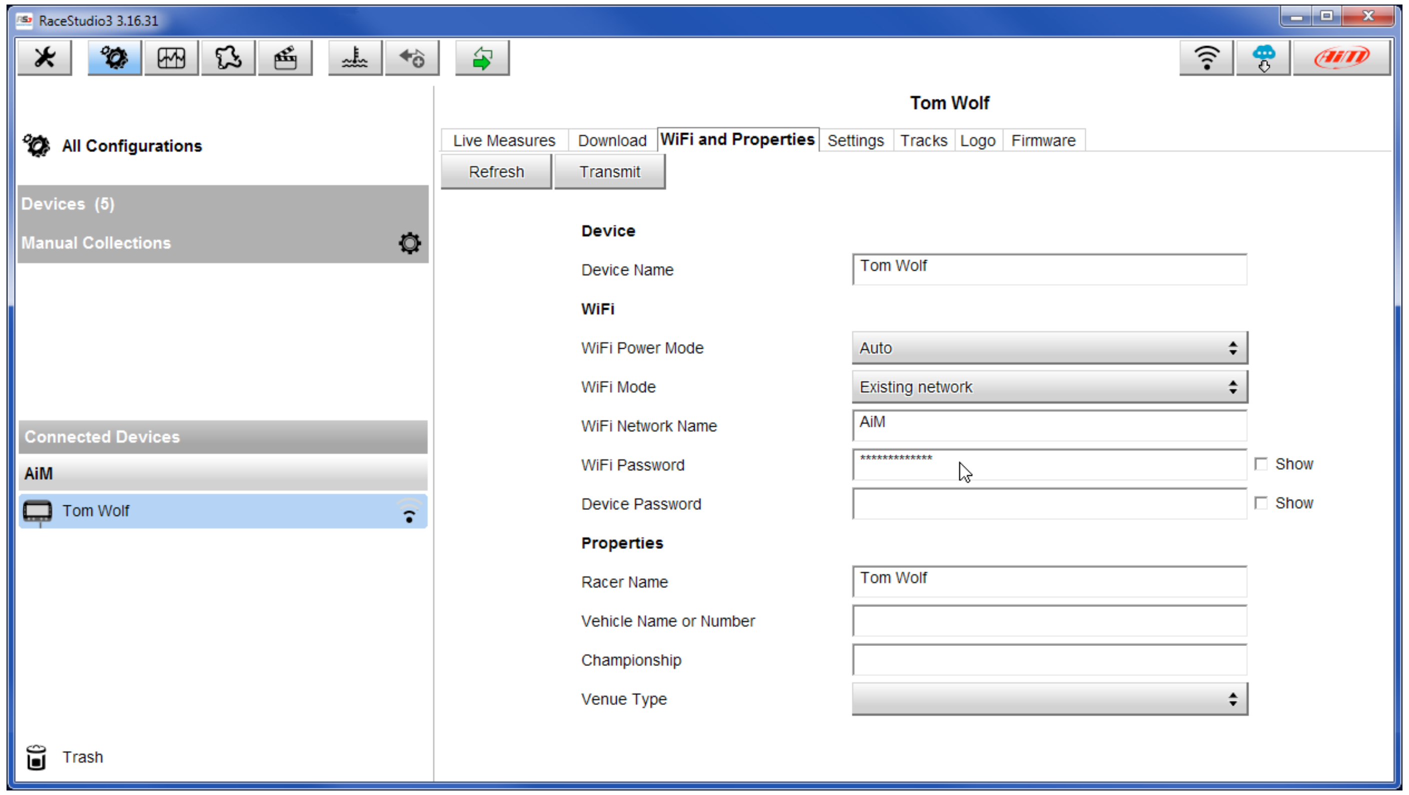
Please Note: the same Wi-Fi connection can be created with the operative system tool.
Once the device has been authenticated in the Wi-Fi network you can communicate with it using Race Studio 3.

8.2 Adding Solo 2 to an existing network

”This situation is ideal for a team with multiple drivers and staff members and is desired to communicate with one or more AiM devices using the same PC network. Each Solo 2 can have its password that adds another security and privacy level to the network.
Race Studio 3 will show all Solo 2 connected to the same network under “Connected devices” label, bottom left of the software page: click your device.
Enter “Wi-Fi and properties” tab and set it on “Existing Network”; fill in network name, network password and device password.
Transmit the network settings to your device clicking “Transmit”: your device reboots and joins that network.

Please note: the only admitted password are those following WPA2-PSK standard.

To complete this procedure use Race Studio 3 software as here explained.


RaceStudio3 3.16.31
All Configurations
Devices (5)
Manual Collections
Connected Devices
AiM
Tom Wolf
Trash
Live Measures
Download
WiFi and Properties
Settings
Tracks
Logo
Firmware
Refresh
Transmit
Show
Show

Tom Wolf

Device

Device Name: Tom Wolf

WiFi

WiFi Power Mode: Auto

WiFi Mode: Existing network

WiFi Network Name: AiM

WiFi Password: ************

Device Password:

Properties

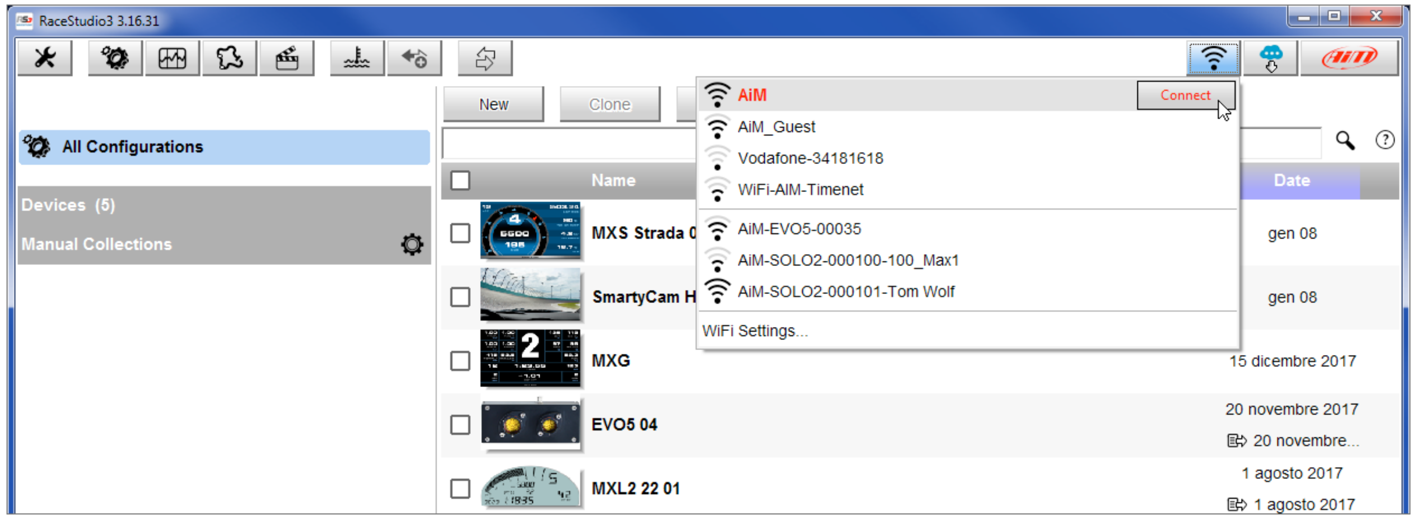
Racer Name: Tom Wolf

Vehicle Name or Number:

Championship:

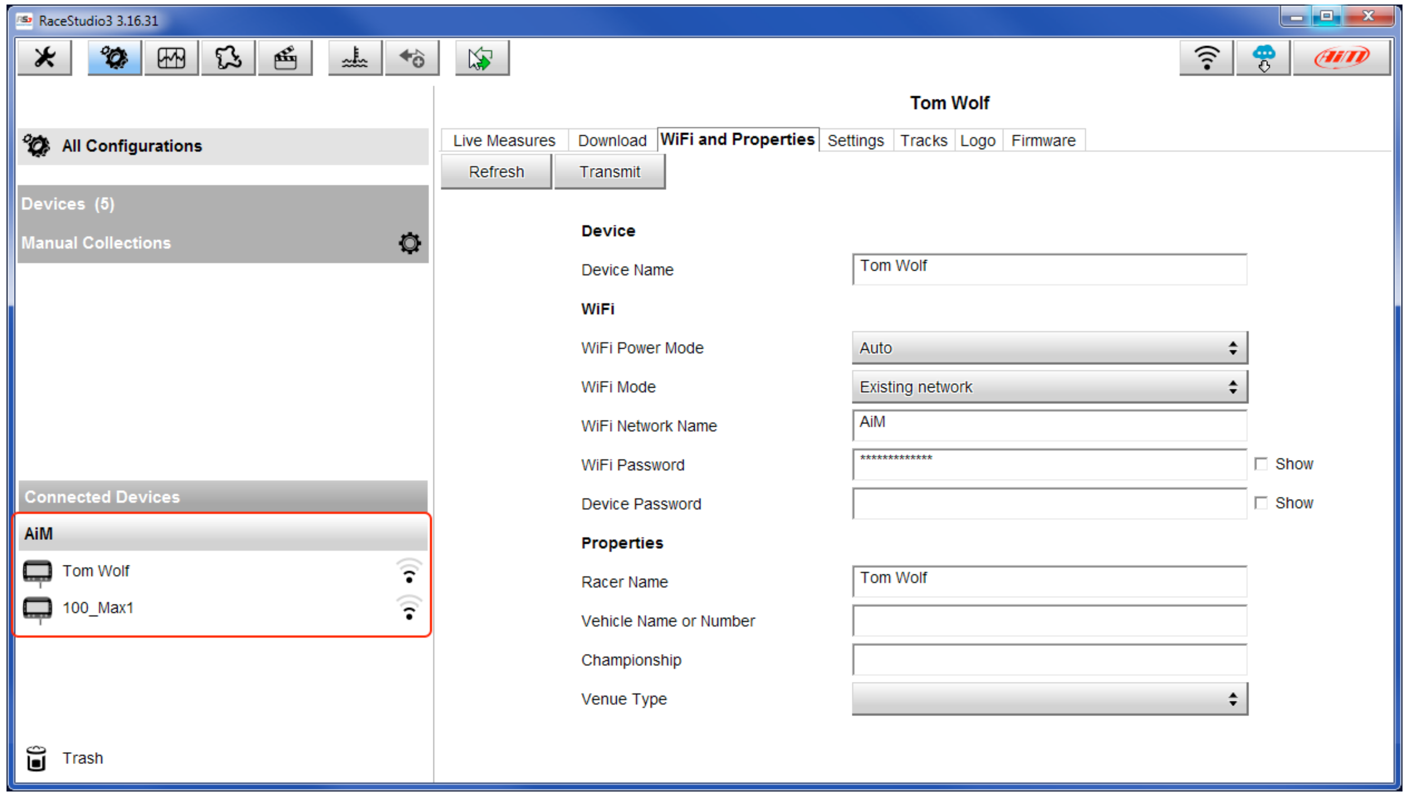
Venue Type:

Here above you see a device "Solo2-00101" that switched from AP to WLAN mode (Existing Network). Network name is "AiM" and does not work with free access because is protected by a password. To obtain connectivity on the device the PC has to be authenticated to the same network as shown here below.


RaceStudio3 3.16.31
All Configurations
Devices (5)
Manual Collections
New
Clone
AiM
Connect
AiM_Guest
Vodafone-34181618
WiFi-AIM-Timenet
AiM-EVO5-00035
AiM-SOLO2-000100-100_Max1
AiM-SOLO2-000101-Tom Wolf
WiFi Settings...

Name	Date
MXS Strada 0	gen 08
SmartyCam H	gen 08
MXG	15 dicembre 2017
EVO5 04	20 novembre 2017 20 novembre...
MXL2 22 01	1 agosto 2017 1 agosto 2017

When the PC is authenticated to the network called "AiM" it can see all devices you configured to access the same network. In the image below two AiM devices are connected to the same "AiM" WLAN.


RaceStudio3 3.16.31
All Configurations
Devices (5)
Manual Collections
Connected Devices
AiM
Tom Wolf
100_Max1
Trash
Live Measures
Download
WiFi and Properties
Settings
Tracks
Logo
Firmware
Refresh
Transmit
Show
Show

Tom Wolf

Device

Device Name: Tom Wolf

WiFi

WiFi Power Mode: Auto

WiFi Mode: Existing network

WiFi Network Name: AiM

WiFi Password: ************

Device Password:

Properties

Racer Name: Tom Wolf

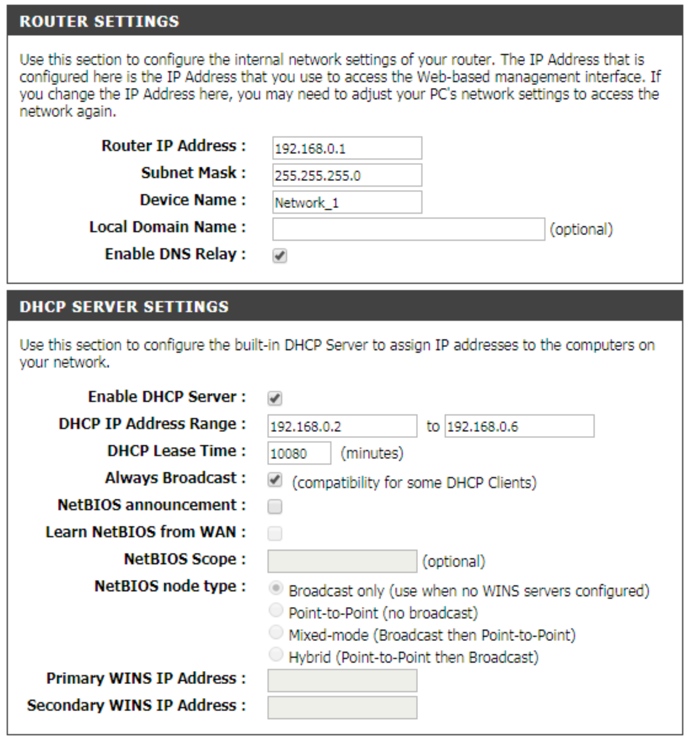
Vehicle Name or Number:

Championship:

Venue Type:

8.3 Wi-Fi network settings

In this chapter you find a short description of how to configure a WLAN including AiM devices and a PC. Here on the right is an example of configuration.



ROUTER SETTINGS

Use this section to configure the internal network settings of your router. The IP Address that is configured here is the IP Address that you use to access the Web-based management interface. If you change the IP Address here, you may need to adjust your PC's network settings to access the network again.

Router IP Address : 192.168.0.1
Subnet Mask : 255.255.255.0
Device Name : Network_1
Local Domain Name : (optional)
Enable DNS Relay : ☑

DHCP SERVER SETTINGS

Use this section to configure the built-in DHCP Server to assign IP addresses to the computers on your network.

Enable DHCP Server : ☑
DHCP IP Address Range : 192.168.0.2 to 192.168.0.6
DHCP Lease Time : 10080 (minutes)
Always Broadcast : ☑ (compatibility for some DHCP Clients)
NetBIOS announcement : ☐
Learn NetBIOS from WAN : ☐
NetBIOS Scope : (optional)
NetBIOS node type : ● Broadcast only (use when no WINS servers configured)
○ Point-to-Point (no broadcast)
○ Mixed-mode (Broadcast then Point-to-Point)
○ Hybrid (Point-to-Point then Broadcast)
Primary WINS IP Address :
Secondary WINS IP Address :

For better network performances, we suggest the use of a network device equipped with a DHCP server and using 3x3 MIMO technology like, for example a Linksys AS3200. To maximize the bandwidth, you should not allow the Internet on this WLAN; this means the DHCP server should be configured without any DNS address nor gateway by default.

The parameters for the device network configuration in this example are:

■ **Wireless network name: network_1**
It means that the WLAN network name is "network_1." A PC has to be authenticated in this network to interact with any AiM device of this network.

■ **Gateway address: 192.168.0.1**
primary DNS server: 0.0.0.0
secondary DNS server: 0.0.0.0
(These settings prevent Internet connectivity on this WLAN.)

■ **Subnet mask: 255.255.255.248**
Enable DHCP server: yes
DHCP IP address range: 192.168.0.2 to 192.168.0.6

These settings enable a DHCP server running on this WLAN and provide an IP address in a 2-6 range. This means that this network allows 5 network hosts. The number of devices on a WLAN network depends on the subnet mask. Here below you see typical examples of network masks and IP addresses range.

The configuration in bold is the one we suggest (if a greater number of devices is not needed), being the one that makes it easier and quicker for Race Studio 3 the identification of the devices in the network.

Subnet mask:	IP address range:	Number of devices:
255.255.255.0	192.168.0.1 – 254	254
255.255.255.128	192.168.0.1 – 126	126
255.255.255.192	192.168.0.1 – 62	62
255.255.255.224	192.168.0.1 – 30	30
255.255.255.240	192.168.0.1 – 14	14
255.255.255.248	**192.168.0.1 – 6**	**6**

8.4 The Internet connectivity

For an optimal speed of your AiM device(s) we recommend not to allow the Internet on the same network and to set the WLAN in the same way.
You can of course allow the Internet access on your network but this would degrade the communication.
This slightly slower speed can be suitable for your needs but you can also have a second Wi-Fi connection using an additional hardware (NIC).
This configuration would provide an optimal speed of the data network of your AiM device(s) and at the same time would provide an internet connectivity with the second NIC.

8.5 Connection issues

It can occur that Solo 2 is correctly connected to Race Studio 3 via Wi-Fi but the user interface does not show it. This may be because Wi-Fi port setting is set with a static IP. To switch it to dynamic (DHCP):

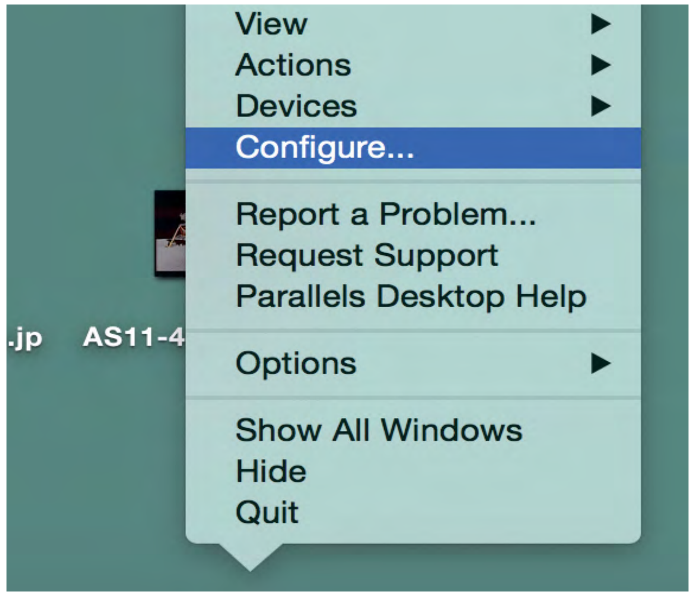
- open "Network and sharing centre" in the WindowsTM research engine
- right click on the Wi-Fi connection and a panel shows up
- select "Properties" option
- double click on "Internet Protocol version 4 (TCP/IPv4)"
- verify that option "Obtain an IP address" is active

For further information refer to FAQ section, Wi-Fi of www.aim-sportline.com.

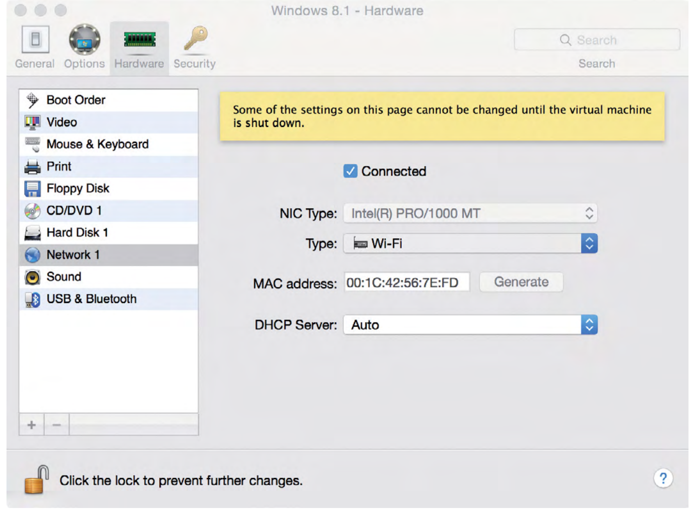
8.6 Working on Mac™ with virtualized Windows™

Race Studio 3 only works on Windows™ operative systems; Mac users can eventually use a virtualized Windows™ machine.
The main problem is that the host OS (Mac) must share its Wi-Fi interface with the virtualized operative system (Windows) as Ethernet interface and not as Wi-Fi interface.

Configuring Parallels(™)
Select "Configure… in Parallels "Menu".


View
Actions
Devices
Configure...
Report a Problem...
Request Support
Parallels Desktop Help
Options
Show All Windows
Hide
Quit
.jp
AS11-4

Press "Hardware" – top on the page that shows up – and select "Network" in the drop-down menu on the left. Right on the configuration panel set "Type" field on "Wi-Fi". Then select the device you want to communicate with.


Windows 8.1 - Hardware
General
Options
Hardware
Security
Search
Boot Order
Video
Mouse & Keyboard
Print
Floppy Disk
CD/DVD 1
Hard Disk 1
Network 1
Sound
USB & Bluetooth
Generate

Some of the settings on this page cannot be changed until the virtual machine is shut down.

☑ Connected

NIC Type: Intel(R) PRO/1000 MT

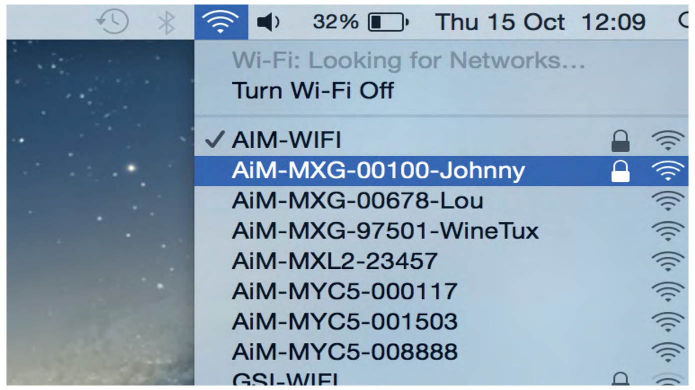
Type: Wi-Fi

MAC address: 00:1C:42:56:7E:FD

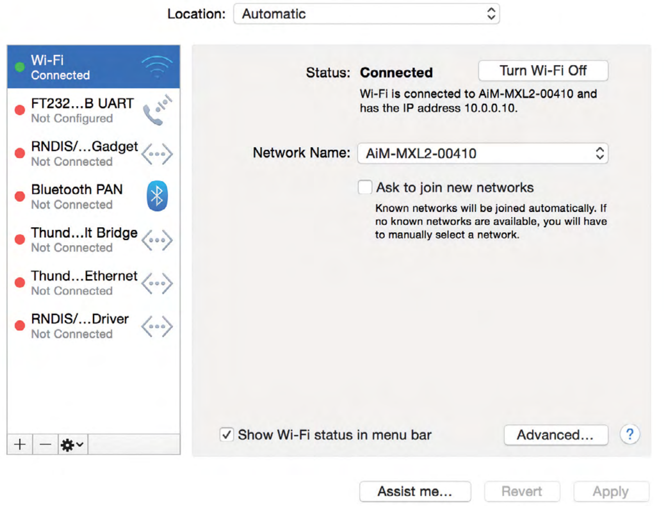
DHCP Server: Auto

Click the lock to prevent further changes.

To ensure that the communication works select "Open Network preferences…" menu.


32%
Thu 15 Oct 12:09
Wi-Fi: Looking for Networks…
Turn Wi-Fi Off
✓ AIM-WIFI
AiM-MXG-00100-Johnny
AiM-MXG-00678-Lou
AiM-MXG-97501-WineTux
AiM-MXL2-23457
AiM-MYC5-000117
AiM-MYC5-001503
AiM-MYC5-008888
GSI-WIFI

Verify that the status in the window that shows up is "Connected" and that the IP address associated is, for example, 10.0.0.10 (could be 10.0.0.11, 10.0.0.12, or generically 10.0.0.x).


Location: Automatic
Wi-Fi
Connected
FT232…B UART
Not Configured
RNDIS/…Gadget
Not Connected
Bluetooth PAN
Not Connected
Thund…lt Bridge
Not Connected
Thund…Ethernet
Not Connected
RNDIS/…Driver
Not Connected
Turn Wi-Fi Off
Advanced…
Assist me…
Revert
Apply

Status: Connected

Wi-Fi is connected to AiM-MXL2-00410 and has the IP address 10.0.0.10.

Network Name: AiM-MXL2-00410

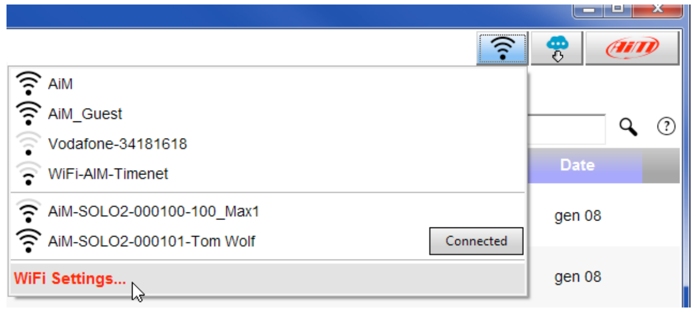
☐ Ask to join new networks

Known networks will be joined automatically. If no known networks are available, you will have to manually select a network.

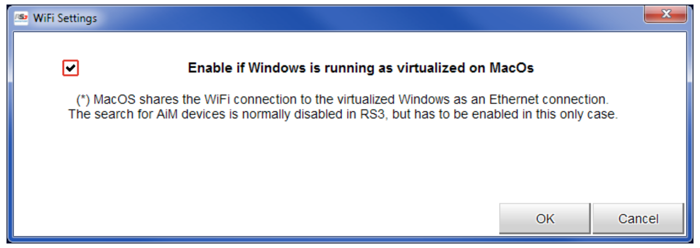
☑ Show Wi-Fi status in menu bar

To enable Race Studio 3 correctly working on a Mac with virtualized Windows™.

- press Wi-Fi icon
- select "Wi-Fi Settings" icon


AiM
AiM_Guest
Vodafone-34181618
WiFi-AIM-Timenet
AiM-SOLO2-000100-100_Max1
AiM-SOLO2-000101-Tom Wolf
Connected
WiFi Settings...
Date
gen 08
gen 08

- enable the checkbox shown here on the right.


WiFi Settings
OK
Cancel

☑ Enable if Windows is running as virtualized on MacOs

(*) MacOS shares the WiFi connection to the virtualized Windows as an Ethernet connection.
The search for AiM devices is normally disabled in RS3, but has to be enabled in this only case.

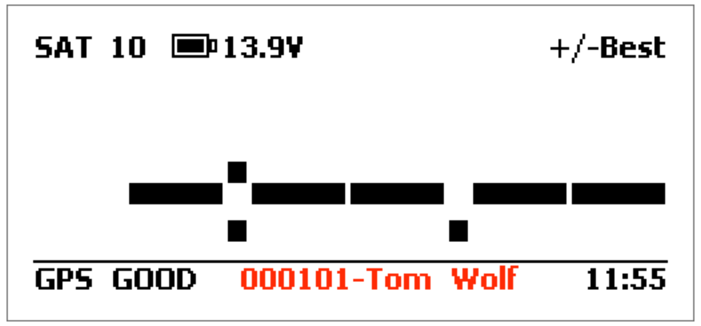
8.7 Connected device visualization issues

It may occur that using Race Studio 3 on an iMac with virtualized Windows the device connected via Wi-Fi takes some time to be shown in the network or is not shown at all. This is why we always suggests using an Wi-Fi (WLAN) router. This router work as an Access Point allowing more external devices to connect to its network. Solo 2 Wi-Fi configuration is to be set on Existing Network as explained in the related paragraph.

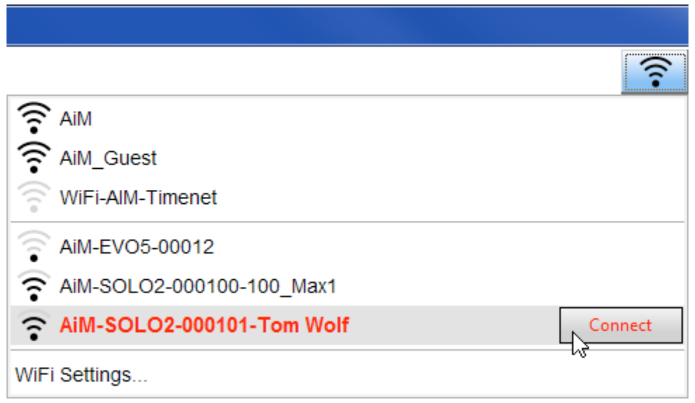
9. PC connection

Solo 2 can be connected to the PC only via Wi-Fi. To do it:

- check that Solo 2 Wi-Fi is set on "AUTO" or on "ON"
- read your Solo 2 name – mid of Solo 2 home page bottom line – or look for it in "System Information" page.

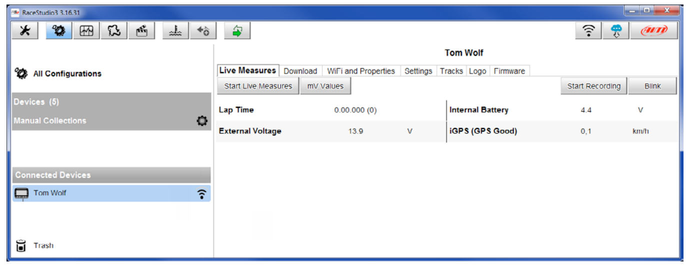

SAT 10
13.9V
+/-Best
GPS GOOD
000101-Tom Wolf
11:55

- click Race Studio 3 Wi-Fi icon and select your Solo 2.


AiM
AiM_Guest
WiFi-AIM-Timenet
AiM-EVO5-00012
AiM-SOLO2-000100-100_Max1
AiM-SOLO2-000101-Tom Wolf
Connect
WiFi Settings...

Once the connection is established you have these options:

- Live Measures: to check all Solo 2 channels;
- Download: to download data, see the related chapter;
- Wi-Fi and Properties: to manage the Wi-Fi configuration – see the related chapter;
- Settings to:
  - set date format
  - enable/disable daylight time
  - set time format and time zone
  - set backlight colour
  - enable/disable night vision
- Tracks: to manage the tracks stored in the device memory
- Logo: transmit/receive the logo that shows up when switching Solo 2 on; supported image format are JPEG or BMP; always use the most recent WindowsTM versions (Windows8 or Windows10) whose graphic libraries are more updated
- Firmware: to check or update your Solo 2 firmware version.


RaceStudio3 3.16.31
Tom Wolf
All Configurations
Devices (5)
Manual Collections
Connected Devices
Tom Wolf
Trash
Live Measures
Download
WiFi and Properties
Settings
Tracks
Logo
Firmware
Start Live Measures
mV Values
Start Recording
Blink

Lap Time 0.00.000 (0)
External Voltage 13.9 V
Internal Battery 4.4 V
iGPS (GPS Good) 0,1 km/h

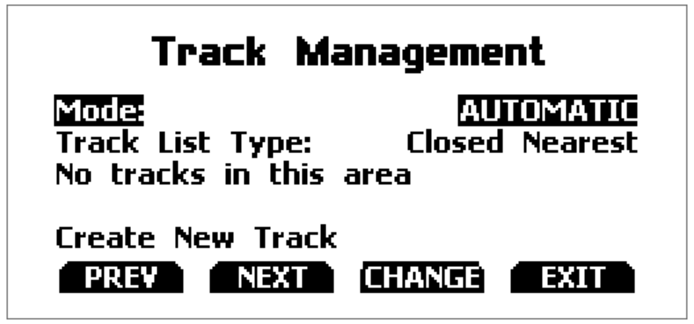
10. Track Management

Solo 2 built in GPS receiver is used for:

- Lap Time calculation
- Speed calculation
- Predictive Lap Time calculation
- Position on the track in analysis

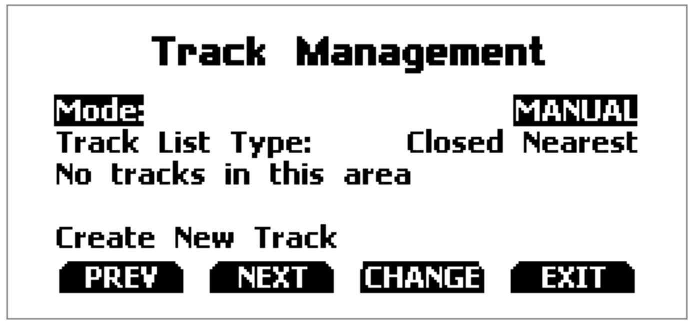
To calculate these data the system must know the start/finish line coordinates.
Solo 2 comes with a long list of the world main tracks. The tracks are constantly updated by our technicians and are automatically loaded on your PC when you run our software Race Studio 3.
Solo 2 provides two track selection modes: automatic and manual.

Automatic:
Solo 2 automatically recognizes the track you are running on, loads the start/finish line and calculates lap times.
This is the best mode in most cases.


Track Management
Create New Track
PREV
NEXT
CHANGE
EXIT

Mode: AUTOMATIC
Track List Type: Closed Nearest
No tracks in this area

Manual:
allows to manually select the track from the internal database.
This mode is to prefer when multiple track configurations are available nearby. In this case Solo 2 would recognize the track anyway but would need at least one complete track lap.
To be ready from the first lap manual mode would be helpful.


Track Management
Create New Track
PREV
NEXT
CHANGE
EXIT

Mode: MANUAL
Track List Type: Closed Nearest
No tracks in this area

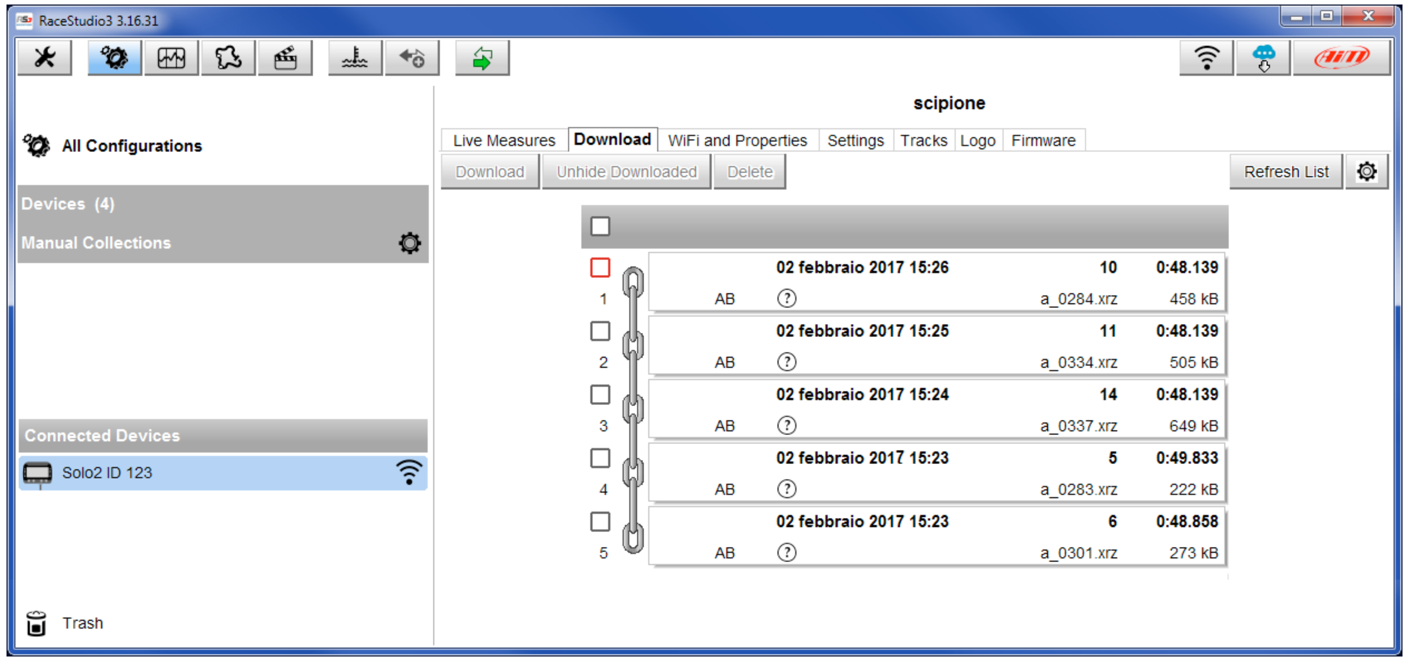
You can scroll the list of available tracks choosing among these options:

- nearest: shows only tracks in a 10 km distance
- all: shows all tracks stored in the system in alphabetical order
- custom: shows only the tracks you have previously created (learning mode)

If you are running in a track NOT included in Solo 2 database it is possible to create a new track as explained in paragraph 5.2.1 and load it in Race Studio3 database.
You can add this new map to Solo 2 database, modify start/finish line coordinates, name the track and transmit it to the PC at first PC-Solo 2 connection.
For further information about track management with Race Studio 3 refer to "Track Manager" user manual you find in download area /software/Race Studio 3/documentation of www.aim-sportline.com.

11. Data download

Once Solo 2-PC connection is established activate "Download" tab to download sampled data.

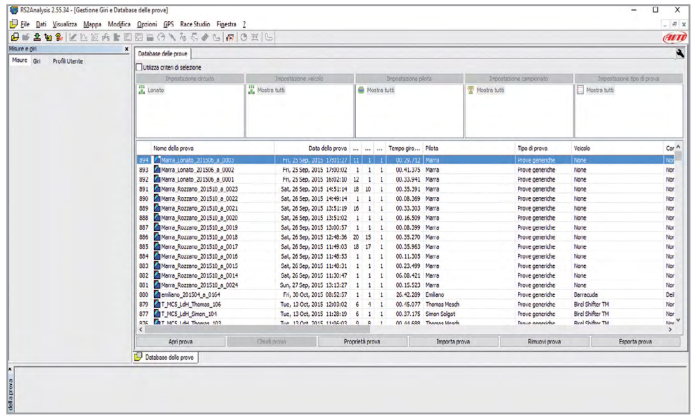

RaceStudio3 3.16.31
scipione
All Configurations
Devices (4)
Manual Collections
Connected Devices
Solo2 ID 123
Trash
Live Measures
Download
WiFi and Properties
Settings
Tracks
Logo
Firmware
Download
Unhide Downloaded
Delete
Refresh List

	Date	Laps	Best lap		File	Size
☐ 1	02 febbraio 2017 15:26	10	0:48.139	AB	a_0284.xrz	458 kB
☐ 2	02 febbraio 2017 15:25	11	0:48.139	AB	a_0334.xrz	505 kB
☐ 3	02 febbraio 2017 15:24	14	0:48.139	AB	a_0337.xrz	649 kB
☐ 4	02 febbraio 2017 15:23	5	0:49.833	AB	a_0283.xrz	222 kB
☐ 5	02 febbraio 2017 15:23	6	0:48.858	AB	a_0301.xrz	273 kB

This page shows all information about the files stored in the system: number of laps, best lap, date/time and file dimensions.
Select one or more files and press "Download" to download and analyse them.

12. Data Analysis

When data have been downloaded press Analysis icon and Race Studio Analysis software will open showing this page.

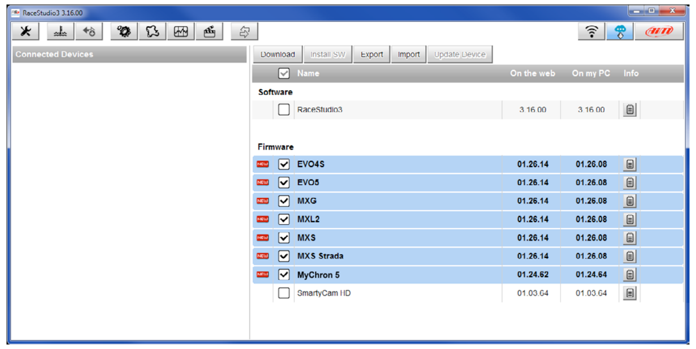


Select your file double clicking on it and start analysing it. A lot of pages, graphs and images will help you analysing your data in the best way.

13. New firmware upgrade

Our technicians and engineers are constantly working to improve both the firmware (the application that manages your device) and the software (the application you install on your PC).
Each time a new firmware and/or software version is available the icon here above appears with an arrow indicating that something is available for download (otherwise the icon only shows the cloud).

Click it and freely download the new applications.

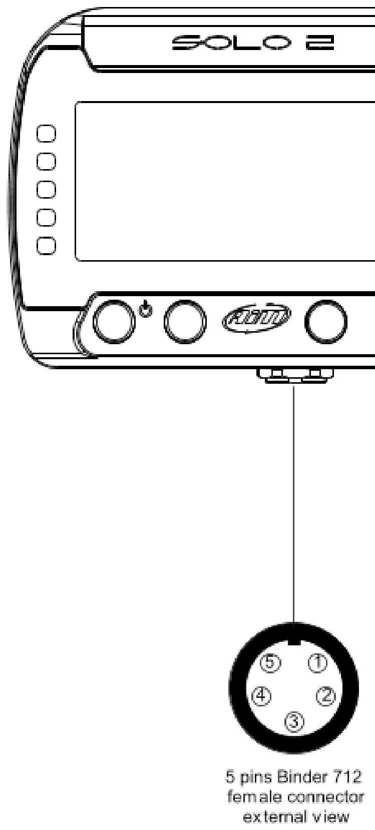

RaceStudio3 3.16.00
Connected Devices
Download
Install SW
Export
Import
Update Device

	☑ Name	On the web	On my PC	Info
	Software			
	☐ RaceStudio3	3.16.00	3.16.00	
	Firmware			
NEW	☑ EVO4S	01.26.14	01.26.08	
NEW	☑ EVO5	01.26.14	01.26.08	
NEW	☑ MXG	01.26.14	01.26.08	
NEW	☑ MXL2	01.26.14	01.26.08	
NEW	☑ MXS	01.26.14	01.26.08	
NEW	☑ MXS Strada	01.26.14	01.26.08	
NEW	☑ MyChron 5	01.24.62	01.24.64	
	☐ SmartyCam HD	01.03.64	01.03.64	

Once the new firmware has been downloaded, connect your device to the PC via Wi-Fi to perform a firmware upgrade. In a few seconds, the device is ready.

14. Technical specifications and drawings

■ Display	Graphical
■ Display resolution	128x64 pixels
■ Display pages	Up to 5 freely configurable
■ Backlight	7 configurable RGB colour
■ Shifl lights/alarm LEDs	10 configurable RGB LEDs
■ Integrated track database	Yes
■ Inertial platform	Internal 3 axis ±5g accelerometer + 3 axis gyro+ 3 axis magnetometer
■ Wi-Fi connection	Yes
■ Integrated GPS	10Hz GPS+Glonass
■ External power	12V
■ Memory	4GB
■ Battery type	Rechargeable Lithium
■ Pushbuttons	Metallic
■ Weight	240g battery included
■ Waterproof	IP65
■ Analysis software	Race Studio Analysis freely downloadable from www.aim-sportline.com



EXP connector	
1	nc
2	GND
3	nc
4	nc
5	+Vb ext