

User Manual

SmartyCam 4 Corsa Release 100





INDEX

- 1 – SmartyCam 4 preliminary notes 2
- 2 – What is in the kit 3
- 3 – SmartyCam 4 Corsa topics 5
- 4 – SmartyCam 4 Corsa connections 7
- 5 – SmartyCam 4 buttons, ON/OFF, powering and LEDs 9
 - 5.1 – LEDS meanings and working mode 9
 - 5.2 – Pushbutton Functions 10
 - 5.3 – Power ON 10
- 6 – USB-C Memory Card 11
- 7 – How to manage SmartyCam 4 Corsa through RaceStudio 3 App 12
 - 7.1 – How to connect RaceStudio 3 App to SmartyCam 4 Corsa 12
 - 7.2 – Managing RaceStudio 3 App with iOS and Android operative systems 13
 - 7.2.1 RaceStudio 3 app working mode 13
 - 7.2.2 – Status and Commands 14
 - 7.2.3 – Settings 15
 - 7.2.4 – How to transmit the track maps to SmartyCam 4 17
 - 7.3 – Tracks 18
- 8 – SmartyCam 4 and the PC 19
 - 8.1 – Creating SmartyCam 4 configuration 19
 - 8.1.1 – Configuring SmartyCam 4 overlay 21
 - 8.1.2 – Map & Logos and extras 23
 - 8.1.3 – Configuring SmartyCam 4 parameters for start recording 24
 - 8.1.4 – Configuring CAN Protocol (SmartyCam 4 connected to a master only) 26
 - 8.1.5 – ECU Stream 29
 - 8.2 – Loading the configuration to SmartyCam 4 30
 - 8.3 – Track Management 30
 - 8.4 – Video Management 34
- 9 – Technical specifications and drawings 37

1 – SmartyCam 4 preliminary notes

This manual explains how to configure and use the new SmartyCam 4 Corsa.





2 – What is in the kit

Available SmartyCam 4 Corsa kits are listed below. In addition to SmartyCam 4 Corsa they include:

- | | |
|--|--------------------------|
| Kit 1: | XS4CRFHD08500□* |
| <ul style="list-style-type: none">• 200cm CAN cable• 200cm USB 2.0 Type A-Type C cable• Battery charger with AC adapter• 64GB USB-C memory card | |
| Kit 2: | XS4CRFHD08501□* |
| <ul style="list-style-type: none">• 400cm CAN cable• 200cm USB 2.0 Type A-Type C cable• Battery charger with AC adapter• 64GB USB-C memory card | |
| Kit 3: | XS4CRFHD08593□* |
| <ul style="list-style-type: none">• 200cm ECU CAN cable + external power• 200cm USB 2.0 Type A-Type C cable• Battery charger with AC adapter• 64GB USB-C memory card | |
| Kit 4: | XS4CRFHD08594□* |
| <ul style="list-style-type: none">• 400cm ECU CAN cable + external power• 200cm USB 2.0 Type A-Type C cable• Battery charger with AC adapter• 64GB USB-C memory card | |
| Kit 5: | XS4CRFHD08500□H2* |
| <ul style="list-style-type: none">• 2 CAN inputsData Hub• 200cm ECU CAN cable + external power• 200cm USB 2.0 Type A-Type C cable• Battery charger with AC adapter• 64GB USB-C memory card | |
| Kit 6: | XS4CRFHD08501□H2* |
| <ul style="list-style-type: none">• 400cm ECU CAN cable + external power• 200cm USB 2.0 Type A-Type C cable• Battery charger with AC adapter• 64GB USB-C memory card | |

***Please note: according to the AC adapter you need substitute □ with:**

- E for Europe
- G for UK
- U for USA
- A for Australia



Accessories and spare parts part numbers are:

- 200cm 5CM712+5CM712 CAN cable **V02554820**
- 400cm 5CM712+5CM712 CAN cable **V02554830**
- 200cm ECU CAN cable + external power **V02566930**
- 400cm ECU CAN cable + external power **V02566940**
- 200cm USB Type A-Type C cable **X90TMPC101010**
- 200cm ECU CAN cable with Jack **V02584140**
- 400cm ECU CAN cable with Jack **V02584150**
- 100cm cable with Jack **V02584040**
- 200 cm ECU CAN cable + microphone **V02584120**
- 400 cm ECU CAN cable + microphone **V02584130**
- 100 cm microphone cable **V02584030**
- Battery charger with AC adapter **X06A12VBM**
- 64 GB USB-C Memory card **3IRUSBD64GB**

***Please note: according to the AC adapter you need substitute with:**

- E for Europe
- G for UK
- U for USA
- A for Australia

Suction cup kit:

X90KSSMC1

- Suction cup
- Clamp base with ball
- 60mm single ball arm
- Ball head
- 17.7mm diameter, 1.5mm thickness, 6mm hole washer

Kit for from 1 to 2.1 inches diameter bar:

X90KSSMC0

- Handlebar bracket
- Straps
- 60mm single ball arm
- Ball head
- 17.7mm diameter, 1.5mm thickness, 6mm hole washer

Kit for from 0.5 to 1.2 inches diameter bar:

X90KSSTP00

- U-bolt
- Straps
- 60mm single ball arm
- Ball head
- 17.7mm diameter, 1.5mm thickness, 6mm hole washer



3 – SmartyCam 4 Corsa topics

Wide 12 Mp CMOS sensor with stabilizer.
Vibrations and vehicle movements are no longer an issue. Image quality has also been significantly improved thanks to the outstanding Sony 12 MP CMOS sensor.

Full HD image

1920 x 1080 resolution with four different levels of video quality.
The framerate is configurable at 30 or 60 fps.

As all AiM cameras, SmartyCam 4 Corsa manages H.264 files but, starting from firmware version 01.00.11, it supports H.265 format too.

Completely waterproof

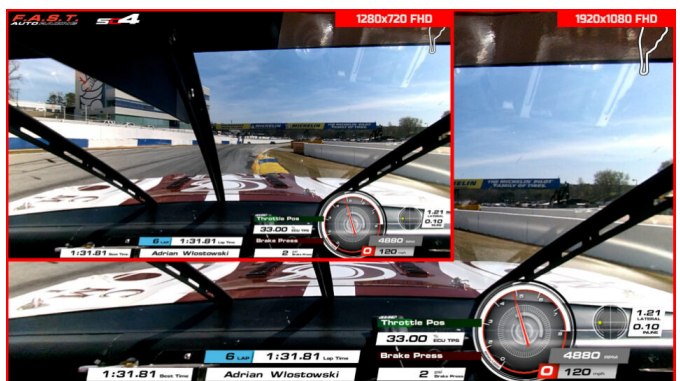
Designed to be used in the harshest environments: water, dust and extreme temperatures are not a problem.

Sapphire frontal glass

The strongest glass available, designed to withstand high-speed impacts with pebbles, insects and dust that typically occur during a race.

A lot of graphic controls

Choose your preferred layout to keep your data under control.





Auto start/stop recording

No need to think about the camera while you are ready at the start/finish line.

Automatic track selection

SmartyCam 4 can be used either connected to an AiM logger or in a standalone installation. In the first case, it receives the track selected by the logger; in the second case, it automatically selects the correct track using information from the GPS Module. This allows it to draw the map and calculate lap number, lap times and rolling times.

Video and data in the same file

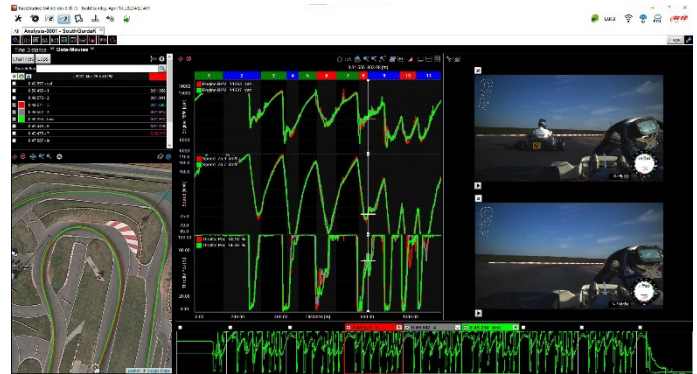
Your video and the most relevant data are stored in the same MP4 file.

Video Output

Through Wi-Fi, your video can be streamed online to an external video streamer.

Automatic data and video synchronization

MP4 file stores the data SmartyCam 4 receives. If this data is not sufficient for your analysis, simply import both the video file and the data from your AiM logger into RaceStudio 3 Analysis; the software will automatically synchronize them so that track position, video frame and data on the graph are perfectly correlated.



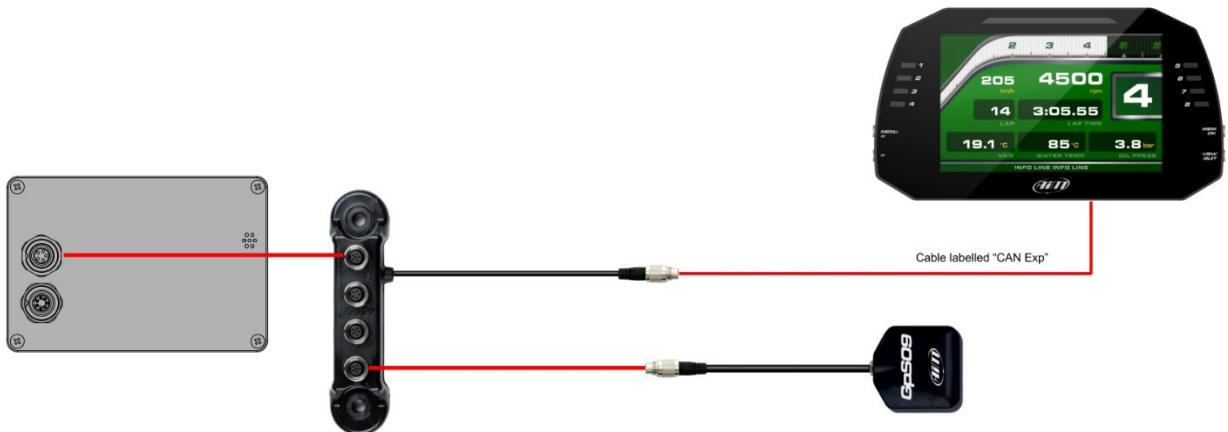
4 – SmartyCam 4 Corsa connections

SmartyCam 4 Corsa has an internal battery that can keep the system running for around 45 min; it is therefore important to power it through an external 12 V battery. Some examples of SmartyCam 4 Corsa and AiM devices connections are shown below.

To connect SmartyCam 4 Corsa to the GPS Module, use the 5-pin Binder 712 female connector placed back of the camera.



SmartyCam 4 Corsa can also be connected to AiM dashes and loggers using AiM CAN network on the 7 pins Binder 712 female connector placed back of the camera. The images below show some connection examples.



5 – SmartyCam 4 buttons, ON/OFF, powering and LEDs

SmartyCam 4 Corsa features a pushbutton and 2 LEDs on its front. In the following paragraph their function(s) and working mode are described.



5.1 – LEDS meanings and working mode

STS LED:

- **OFF:** Power OFF
- **GREEN:** Power ON
- **PURPLE:** The system is on and the battery is charging
- **BLINKING RED:** The system is off and the battery is charging

REC LED:

- **OFF with STS LED ON:**, the software is starting up.
- **GREEN:** SmartyCam 4 Corsa is ready to start recording; user **CAN remove the USB-C memory**
- **BLUE:** SmartyCam 4 Corsa is recording; user **CANNOT remove the USB-C memory**
- **BLINKING GREEN:** SmartyCam 4 Corsa is ending the recording.; user **CANNOT remove the USB-C memory**
- **RED:** no recording request has been received (from a master via CAN or from the user via pushbutton) and SmartyCam 4 Corsa **CANNOT record**.
- **BLINKING RED:** a recording request has been received (from a master via CAN or from the user via pushbutton) but SmartyCam 4 Corsa **CANNOT record**.
- **WHITE:** the user has held down the button long enough to turn off SmartyCam 4 Corsa; the shutdown procedure has started and the button can be released.

Please note: if the pushbutton is held down further, SmartyCam 4 Corsa will shut down through hardware control. This operation should only be performed in case of a serious problem that has caused SmartyCam 4 Corsa to freeze.



5.2 – Pushbutton Functions

According to SmartyCam 4 Corsa status the front pushbutton allows the user to perform these operations:

If SmartyCam Corsa 4 is OFF:

- **Short pressure:** POWER ON
- **Long pressure until REC LED turns red with USB-C memory card containing SmartyCam 4 firmware:** the firmware is updated. The operation is to be considered complete when REC LED turns green.

If SmartyCam 4 Corsa is ON but is not recording (REC LED green):

- **Short pressure:** SmartyCam 4 starts recording
- **Long pressure until REC LED turns white:** POWER OFF
- **Long pressure until all LEDs are off:** POWER OFF (hardware shutdown); as said before this operation should only be performed in case of a serious problem that caused SmartyCam 4 to freeze.

If SmartyCam 4 Corsa is recording (REC LED blue):

- **Short pressure:** STOP recording

5.3 – Power ON

SmartyCam 4 Corsa has an internal battery that can keep the system running for about 45 minutes. AiM recommends to connect the camera to an external power source.

SmartyCam 4 Corsa powers ON when:

- the button is pressed
- an external power source is turned ON

SmartyCam 4 Corsa turns automatically OFF when no power input is present and the camera remains idle for the time period set Race Studio 3 App or in the configuration Race Studio 3 desktop software. To set it in Race Studio 3 desktop clicking on SmartyCam 4 Corsa connected and switched on and enter Settings tab to set auto power-off.

The camera is considered idle when:

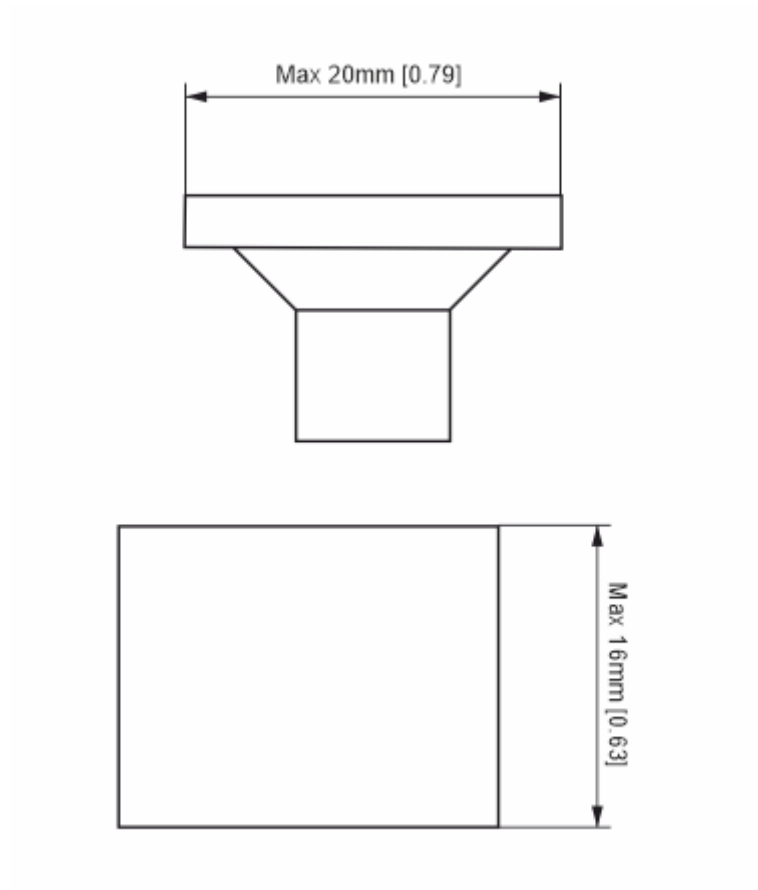
- it is NOT recording;
- there is NO active USB connection;
- no USB-C memory is being inserted or removed.

Any change to the above conditions cancels or restarts the auto-power-off countdown. If power input is restored, the camera will NOT complete the auto-power-off procedure.

To **manually** power off SmartyCam 4 Corsa, press the button.

6 – USB-C Memory Card

SmartyCam 4 supports a USB-C Memory Card of the following dimensions in mm [inches]:

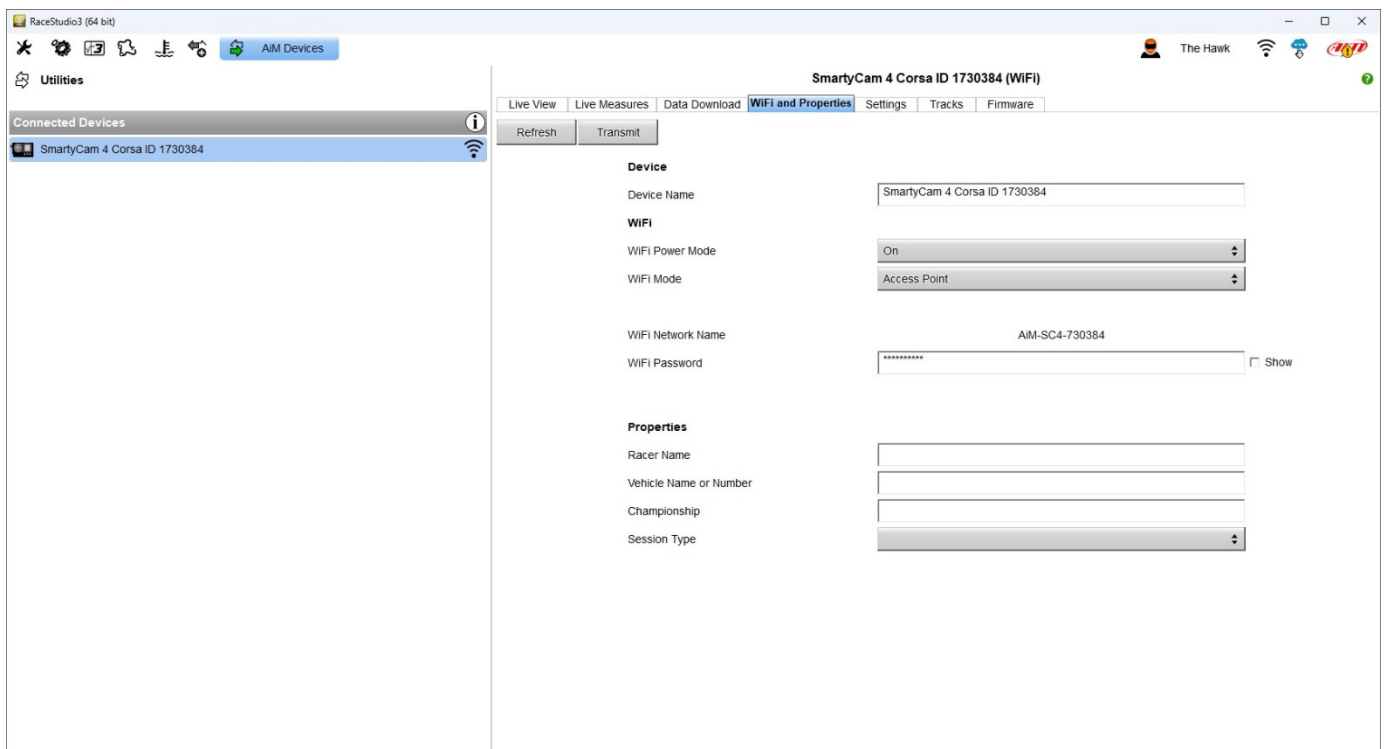


7 – How to manage SmartyCam 4 Corsa through RaceStudio 3 App

AiM RaceStudio 3 App is available for both iOS and Android mobile operative systems.

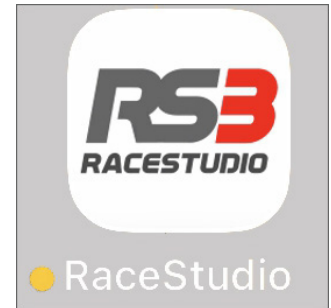
7.1 – How to connect RaceStudio 3 App to SmartyCam 4 Corsa

SmartyCam 4 is connected to RaceStudio 3 App through both BLE (Bluetooth Low Energy) and Wi-Fi. To use the Wi-Fi you must enter the Wi-Fi password defined in “Wi-Fi and properties” page of Race Studio 3 software desktop during the camera configuration. Default password is: **aimsmarty4**.



7.2 – Managing RaceStudio 3 App with iOS and Android operative systems

First of all please download AiM Race Studio App from App Store/Google Play Store.



RaceStudio3 App allows you to perform the following functions:

- Status display
- Status reporting and command transmission
- Parameter settings
- Track map management
- Live view
- Firmware update

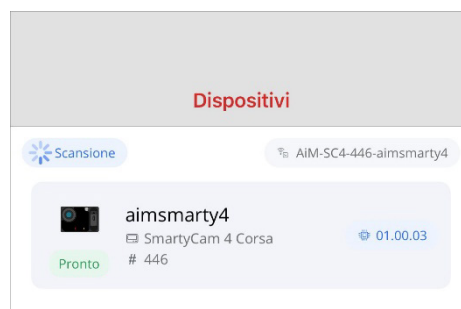
7.2.1 RaceStudio 3 app working mode

As said before the connection between RaceStudio3 App and SmartyCam 4 Corsa is established via both BLE (Bluetooth Low Energy) and Wi-Fi. To establish the connection follow these steps:

- Open RaceStudio3 App and enter “Devices” menu



- Select your SmartyCam 4.



RaceStudio3 App and SmartyCam 4 are now connected. The status page of SmartyCam 4 appears and is described in paragraph 7.2.2.

7.2.2 – Status and Commands

This page shows information about the status of SmartyCam 4. The most relevant items are:



- Recording status (1); available options are:
 - Waiting
 - Recording
- Battery level (2): when the battery drops to 10%, if no external power supply is connected SmartyCam 4 shuts automatically down.
- GPS (3): SmartyCam 4 can receive GPS coordinates in three ways:
 - through an AiM GPS Module, such as GPS09-C; available options are connected/not connected
 - through an AiM master such as AiM MyChron6, Solo 2 DL, MX series, SW4, PDMs and EVOs connected to SmartyCam through an AiM CAN Expansion that uses AiM CAN network
 - through the ECU CAN bus of a non-AiM system
- Track (4): shows the currently selected track. If SmartyCam 4 is connected to an AiM master device, it automatically uses the track currently selected on the master. Otherwise, SmartyCam 4 automatically selects the closest track map.

The commands you can send through RaceStudio 3 App are:

- Power off (5)
- Start/Stop Rec (6 and 7)
- Export Logs (these files are useful for AiM technicians in case of any issue 8).
- Export configuration (9)

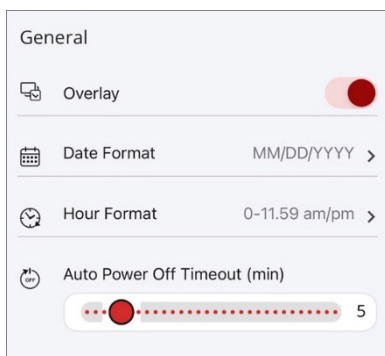
7.2.3 – Settings

Tapping Settings option, you can configure all the parameters needed to make SmartyCam 4 work the way you prefer.



First, a preview shows what SmartyCam 4 is framing, helping you find the best position for the camera.

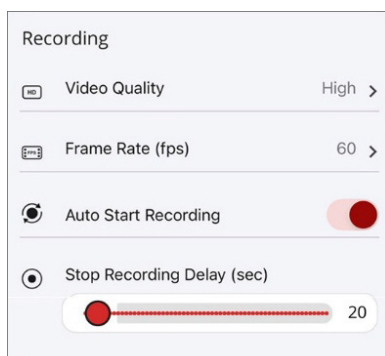
General settings



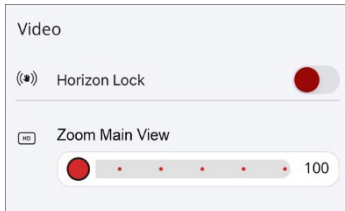
Menu options are:

- **Overlay:** enabled/disabled
- **Date format;** available options are:
 - MM/DD/YYYY
 - DD/MM/YYYY
 - YYYY/MM/DD
 - YYYY/DD/MM
- **Hour format;** available options are:
 - 1-12:59 am/pm
 - 0-24
 - 0-11:59 am/pm
- **Auto-power-off timeout** can be set between 2 and 30 minutes.
- **The video quality** can be set:
 - Low: 10 Mbps
 - Normal: 15 Mbps
 - High: 20 Mbps
 - Best: 40 Mbps
- **Frame Rate:** 60 fps or 30 fps
- **Auto start recording:** SmartyCam 4 can start recording according to the conditions set in the RaceStudio 3 desktop software configuration or to ignore them and start recording manually from the App.
- **Stop Recording Delay (sec):** to set the delay time the camera waits before stopping the recording once the conditions are no longer met.

Recording



Video



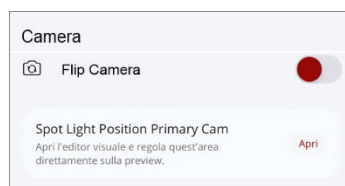
- Horizon lock: when enabled, the horizon line remains stable regardless the vehicle's roll
- Zoom Main View to zoom the image. **Please note:** this zoom is electronic not optical so zooming will reduce video resolution.

Audio



- SmartyCam 4 has two microphones: internal and external that can be connected through pins 6 and 7 of the 7 pins Binder 712 female connector placed rear on the camera. Both microphone gains can be set according to your needs.

Camera



Nascondi griglia

Applica

- Flip Camera: if Horizon Lock in Video settings is enabled this option is not needed since SmartyCam 4 always keeps the horizon line in the correct position regardless how it is mounted. Otherwise, if you need to install the camera upside down, this setting flips the image accordingly.
- Spot Light Position Primary Cam: default, exposure is by default calculated on the entire image. To base it on a specific area of the screen follow this procedure:
 - Tap the upper-left corner of the desired area.
 - Drag your finger to the lower-right corner of the area.
 - The selected area will be highlighted.
 - Tap Apply.



Session

Session

Racer Name

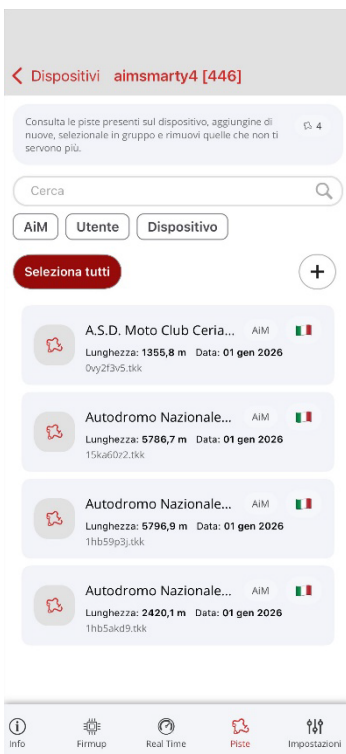
Vehicle Name

Championship Name

Session Type

- You can enter information to help identify your video.

7.2.4 – How to transmit the track maps to SmartyCam 4



RaceStudio 3 App includes all RaceStudio 3 desktop software available track maps. The database is constantly updated. Automatic selection of the correct map allows the system to show your vehicle position in the video and calculates lap times.

Maps are listed by distance from your current position.

To load the desired maps onto SmartyCam 4, tap “+” and select them.

Please note: when you turn SmartyCam 4 on while on a track, it automatically recognizes the track you are on and shows the map in the video.

7.3 – Tracks

SmartyCam 4 can show the circuit map (if loaded in its configuration – see paragraph 8.1.2 for further information) as well as the position of the vehicle on the track.



SmartyCam 4 can be installed in two ways:

- connected to an AiM logger such as MyChron6, Solo 2 DL, MX series, SW4, PDMs and EVOs. In this case the maps are loaded onto AiM logger, which automatically selects the track you are racing on and transmits it to SmartyCam 4 that shows it in the video in the position you defined during the logger configuration
- Connected to a GPS Module. In this case, you need to load the track maps directly onto SmartyCam 4 using the (Micro) SD card

Please note: the camera comes with no tracks stored. If connected to an AiM logger, this will transmit track information to the camera; otherwise, you need to load the tracks as explained in paragraph 8.3.

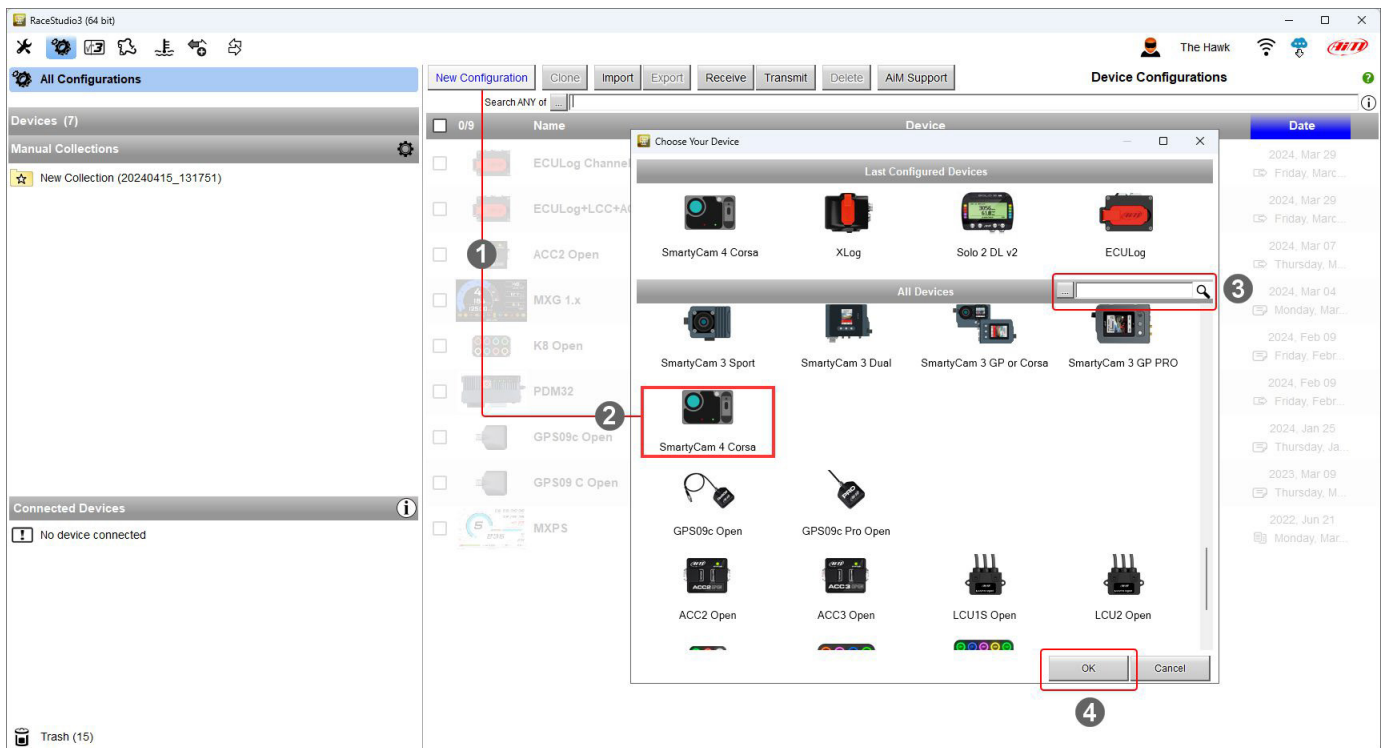
8 – SmartyCam 4 and the PC

SmartyCam 4 can be connected to the PC through the Wi-Fi connection.

8.1 – Creating SmartyCam 4 configuration

To create a SmartyCam 4 configuration:

- run Race Studio 3 software;
- press “NEW” to create a new configuration;
- “Choose new device” panel is prompted (1)
- scroll it and select “SmartyCam 4” (2) or type its name in the dedicated search box (3)
- press “OK” (4)
- fill in the panel that is prompted.





RaceStudio 3 Overlay tab is prompted. Other available configuration tabs depend on the camera model. With reference to the image below SmartyCam 4 can be:

- **Standalone.** In this case, it can be **connected to:**
 - **an AiM GPS Module only**, to show GPS data (position, speed, accelerations, lap number, lap time);
 - **the vehicle ECU**, to show and record all data coming from it.
- **connected to an AiM MASTER (AiM Logger).** In this case, it must be configured in “Slave Mode” and will receive all the information displayed in the video from the logger.

The screenshot shows the RaceStudio 3 software interface. At the top, there are tabs for 'All Configurations' and 'SmartyCam 4 Corsa'. Below the tabs are buttons for 'Save', 'Close', and 'Transmit'. A status bar indicates 'standalone / use ECU' and 'connected to AiM master'. On the right, it shows 'Total channels: 46 8%' and 'Total frequency: 416 8%'. The main window displays a first-person view from a race car. The right-hand panel is titled 'Background' and contains a 'Set' tab with sub-tabs for 'Map & Logos' and 'Extras'. Below this are tabs for 'Set 01' through 'Set 07' and 'Dashes'. The configuration area is divided into several sections: 'accelerometer' with a gauge and 'bargraph' with a bar chart; 'ring bar' with a gauge and 'rpm bargraph' with a bar chart; 'speed bargraph' with a bar chart; 'system_date' showing '23/02/2020' and 'system_time' showing '09:52:36 AM'. There are also 'TEXT HERE' fields for 'long text', 'short text', and 'time'. At the bottom, there is a 'Type' and 'Channel' section with a dropdown menu set to '-- Not Set --'.



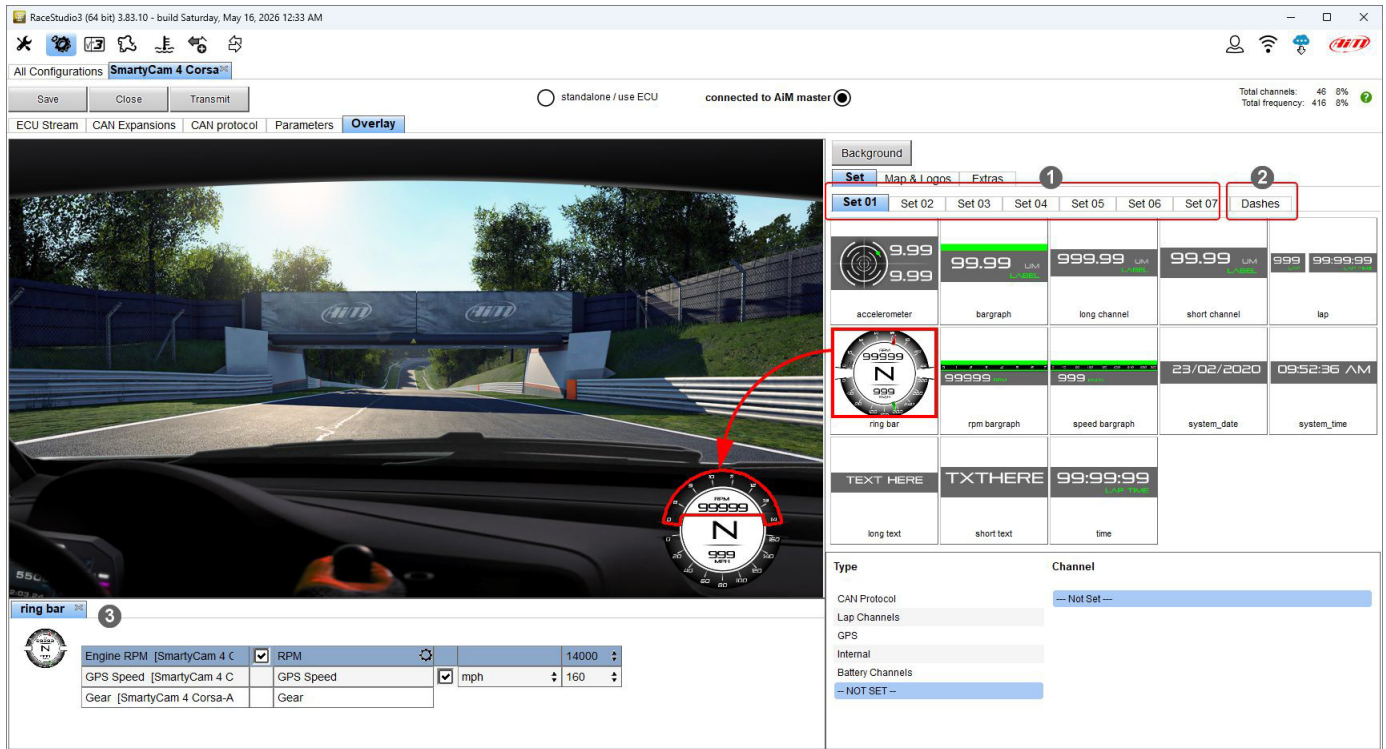
8.1.1 – Configuring SmartyCam 4 overlay

As shown here below overlay configuration tab changes according to your SmartyCam 4 settings.

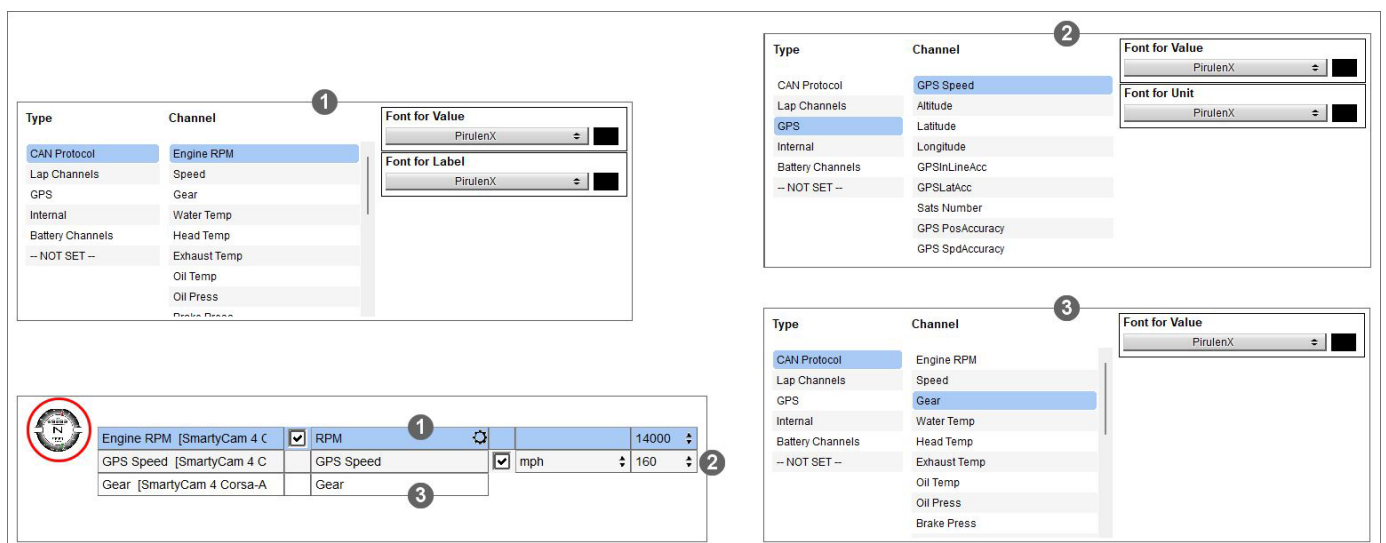
The screenshot shows the RaceStudio3 interface with the 'Overlay' configuration tab selected. The main window displays a first-person view from a race car. A red box highlights the 'Overlay' configuration panel on the right, which is divided into 'Background' and 'Extras' sections. The 'Background' section shows a grid of widgets including an accelerometer, ring bar, rpm bargraph, speed bargraph, system date, and system time. The 'Extras' section shows a list of channels for Lap Channels, GPS, Internal, and Battery Channels, all currently set to '--- Not Set ---'.

Type	Channel
Lap Channels	--- Not Set ---
GPS	---
Internal	---
Battery Channels	---
---	---

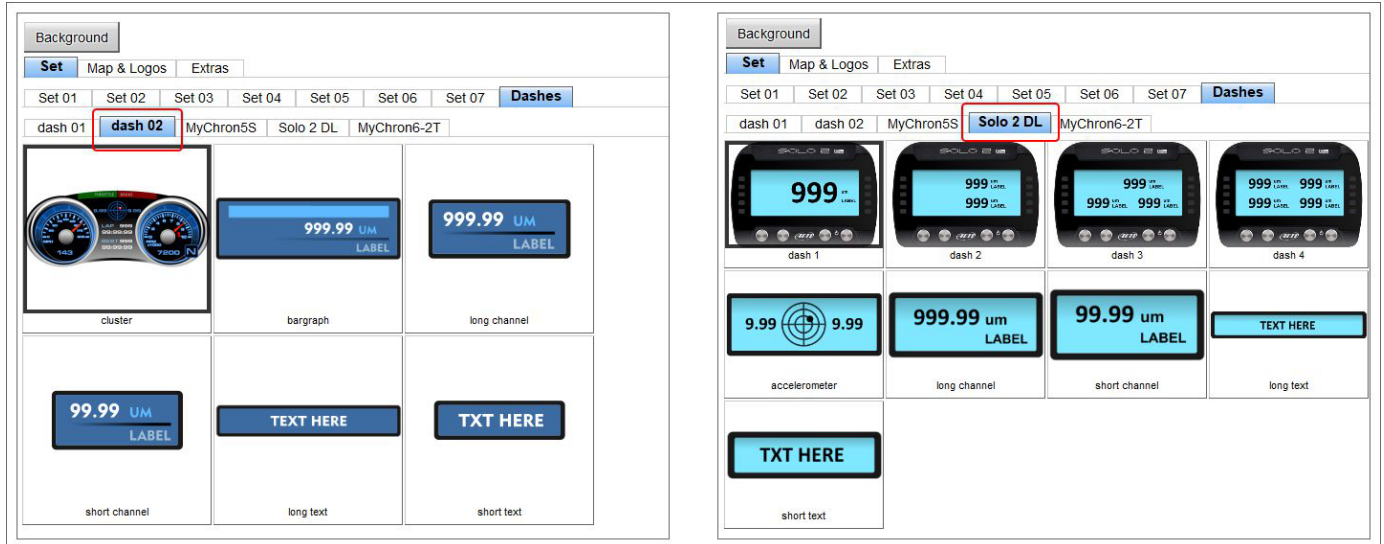
You can choose from a wide set of graphic controls grouped in sets (1) or in Dashes (2). To set it in the video double-click the one you prefer, or drag and drop it to the desired position in the video preview. Channels to set in the control are shown bottom left of the tab (3).



Any graphic control can display a range of information. In the example below, the control to configure can display Engine RPM (1), GPS Speed (2) and Gear (3): simply click on the channel to set and set the related parameters.



Dashes graphic controls can be more complex but can also be like AiM loggers as shown below.



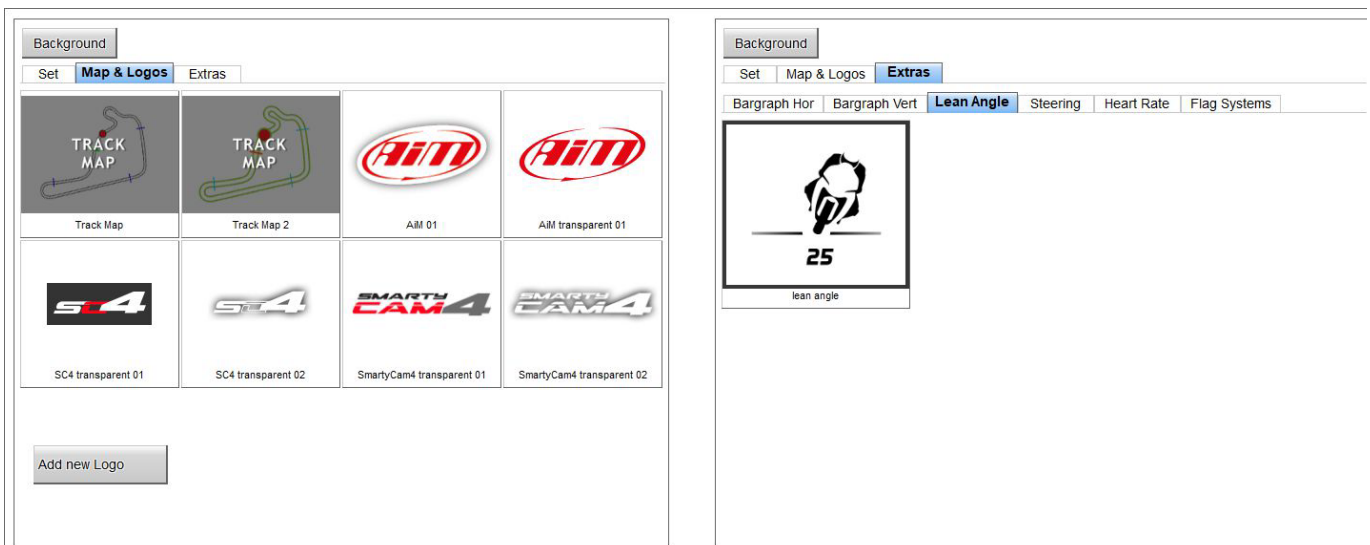
8.1.2 – Map & Logos and extras

With reference to the image below RaceStudio 3 allows the user to add the circuit map or a logo as well as extra controls to the video.

To add a **logo or a track map** select the related tab (on the left in the image below), and drag and drop the logo or the Track Map in the desired position. You can easily change, size and position, or add a new logo pressing “Add new logo” button and browsing your PC.

Please note: when configuring SmartyCam 4, position and size of the track map can be set: the shape of the circuit changes according to the circuit you are racing on.

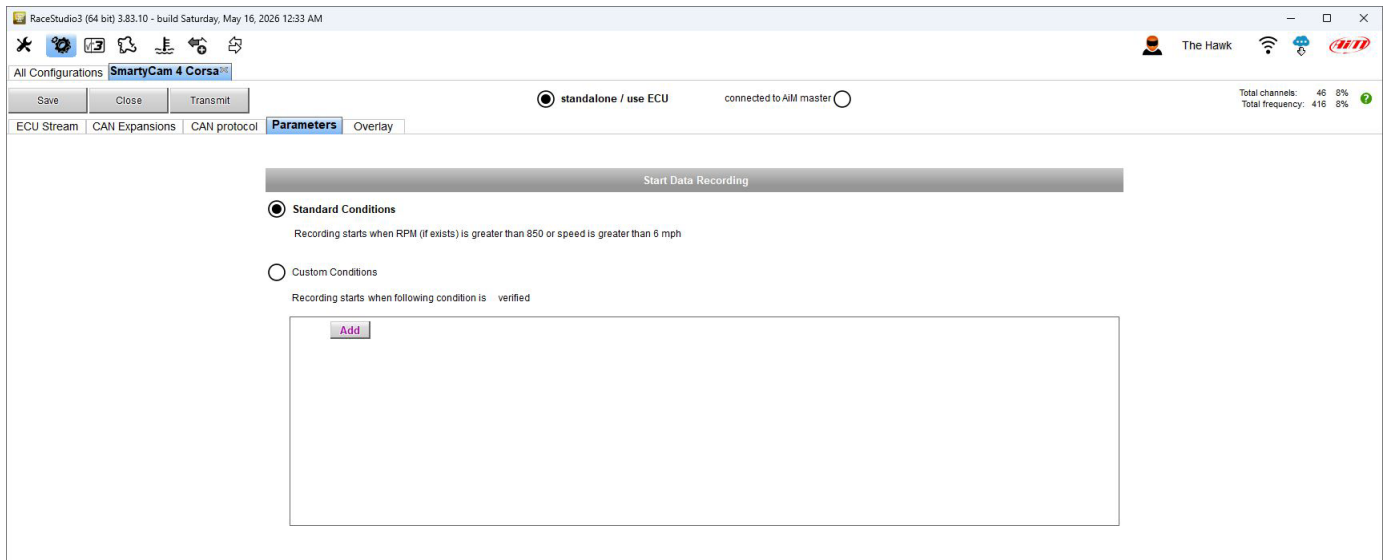
Different **Extras** (on the right in the image below) like bar graph, lean angle, steering position, heart rate and flag systems are available.



8.1.3 – Configuring SmartyCam 4 parameters for start recording

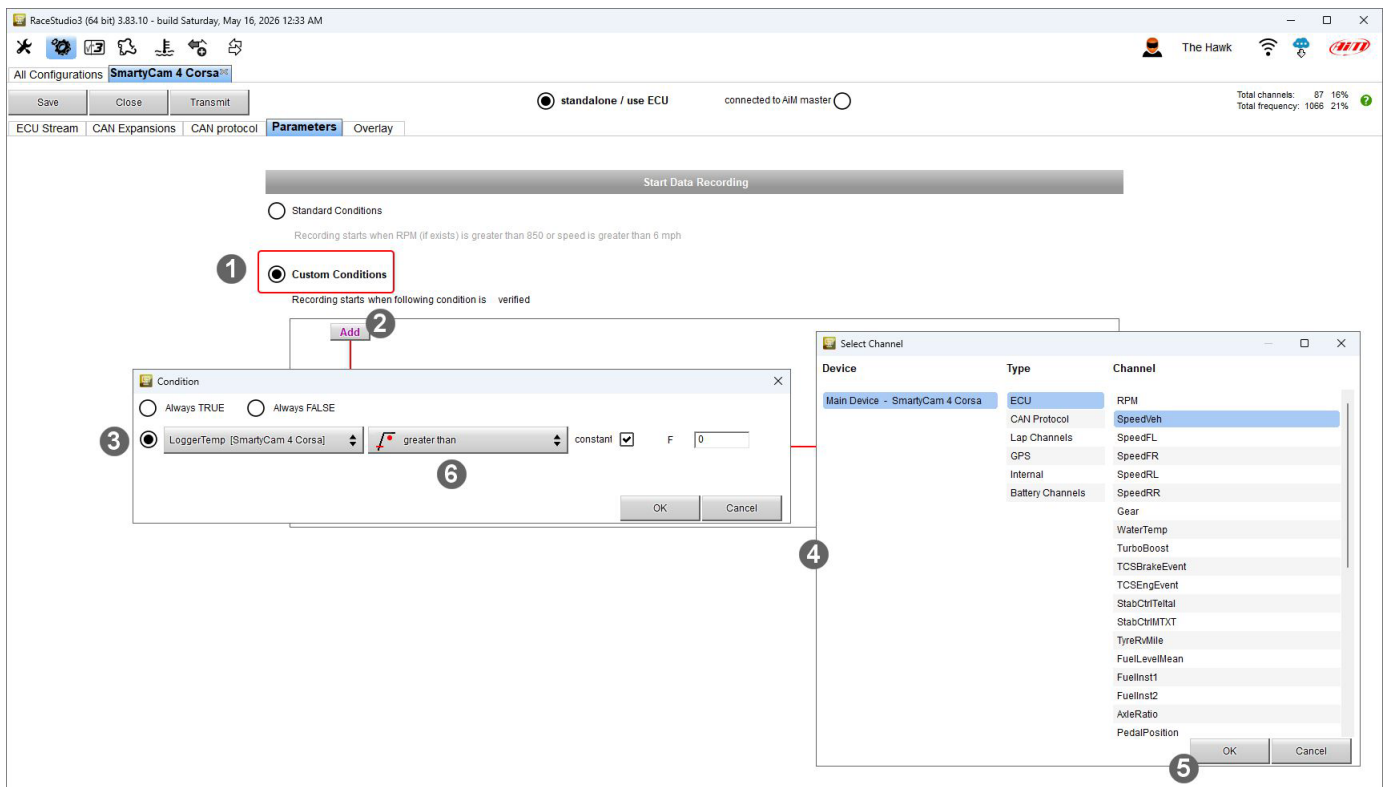
If SmartyCam 4 is **connected to a Master**, it starts recording when the master does.

In case of a **Stand-Alone** installation, **by default SmartyCam 4 Corsa** starts recording when RPM is greater than 850 and speed is greater than 6mph but you can set a custom condition.



To set a custom condition that makes SmartyCam 4 Corsa start recording:

- enable “Custom Condition” (1)
- press “Add” (2)
- enable custom condition option and press the corresponding left button (3)
- select the desired condition (4)
- press “OK” (5)
- select the working mode (6) in the corresponding menu





8.1.4 – Configuring CAN Protocol (SmartyCam 4 connected to a master only)

The connection between any AiM logger and SmartyCam 4 is made through the CAN bus. The logger transmits data to the camera in two slightly different ways:

- AiM Default Protocol
- Advanced Protocol

AiM Default Protocol transmits a limited but sufficient for most installations set of information, as shown below. To set it:

- Enter “CAN Protocol” tab (1)
- Enable “Connected to AiM master” option (2)
- AiM Stream Protocol is enabled (3)

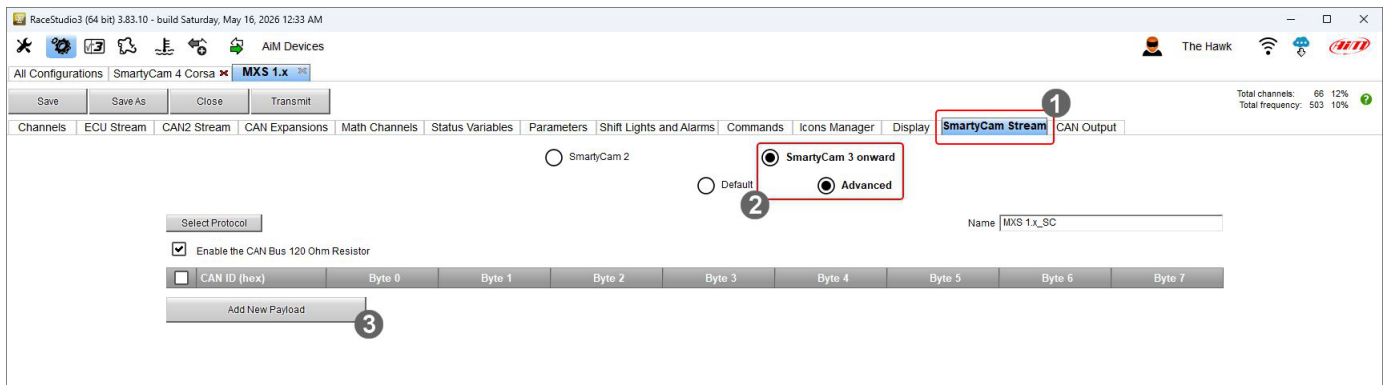
ID	Name	Function	Unit
CC01	Engine RPM	Engine RPM	rpm
CC02	Speed	Vehicle Speed	km/h 0.1
CC03	Gear	Gear	gear
CC04	Water Temp	Water Temperature	C 0.1
CC05	Head Temp	Engine Temperature	C 0.1
CC06	Exhaust Temp	Exhaust Temperature	C 0.1
CC07	Oil Temp	Oil Temperature	C 0.1
CC08	Oil Press	Oil Pressure	bar 0.01
CC09	Brake Press	Brake Circuit Pressure	bar 0.1
CC10	Throttle Pos	Percent Throttle Load	% 0.01
CC11	Brake Pos	Percent Brake Load	% 0.01
CC12	Clutch Pos	Percent	% 0.01
CC13	Steering Pos	Steering Angle	deg 0.1
CC14	Lambda	Lambda	lambda 0.01
CC15	Lateral Acc	Lateral Acceleration	g 0.01
CC16	Inline Acc	Inline Acceleration	g
CC17	Fuel Level	Percent Fuel Level	%
CC18	Battery Voltage	Battery Voltage	mV 0.1
CC19	Vertical Acc	Vertical Acceleration	g 0.01
CC20	Heart Rate	Heart Rate	bpm

To transmit a different set of information, proceed as follows:

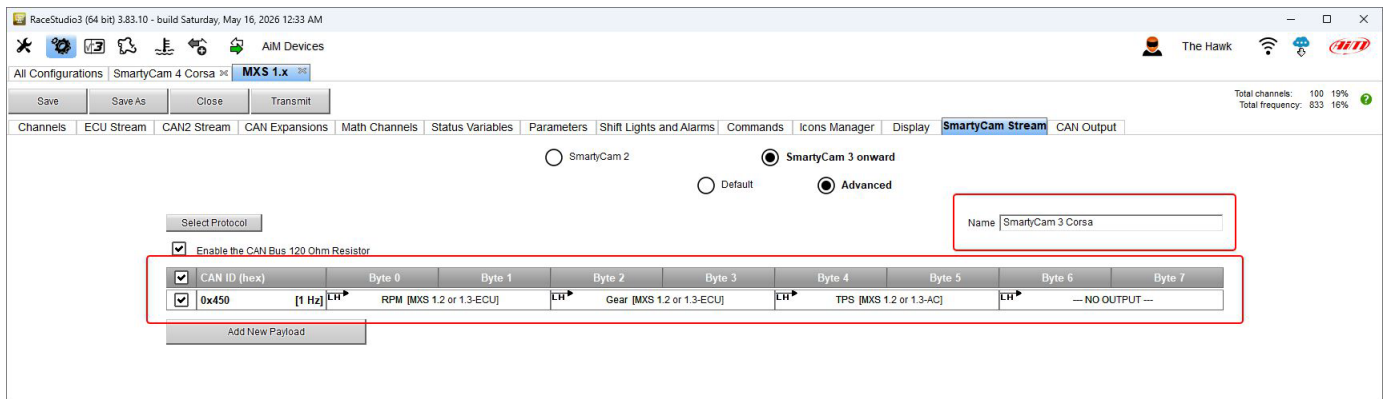
1. configure your logger to transmit a different SmartyCam Stream;
2. select the desired SmartyCam Stream in SmartyCam 4 configuration.

1 - To configure the logger to transmit a different CAN protocol:

- enter “SmartyCam Stream” tab in the logger configuration (1)
- enable “SmartyCam 3 onward” and “Advanced” options (2) in the SmartyCam Stream tab
- create and save the new payload defining the required IDs and fields (3)



- The protocol is shown in the corresponding table and its name shown in the top right box.



Once the logger configuration is saved, you can import the protocol in SmartyCam 4 configuration and use the channels as required. To do so:

- Press “Select Protocol” (1)
- Select the protocol in the panel that is prompted (2)
- The protocol is shown in the central table (3).

Please note: ALL data transmitted to SmartyCam 4 is stored as metadata directly in the .mp4 file, so that it can be analysed with RaceStudio 3 Analysis software.

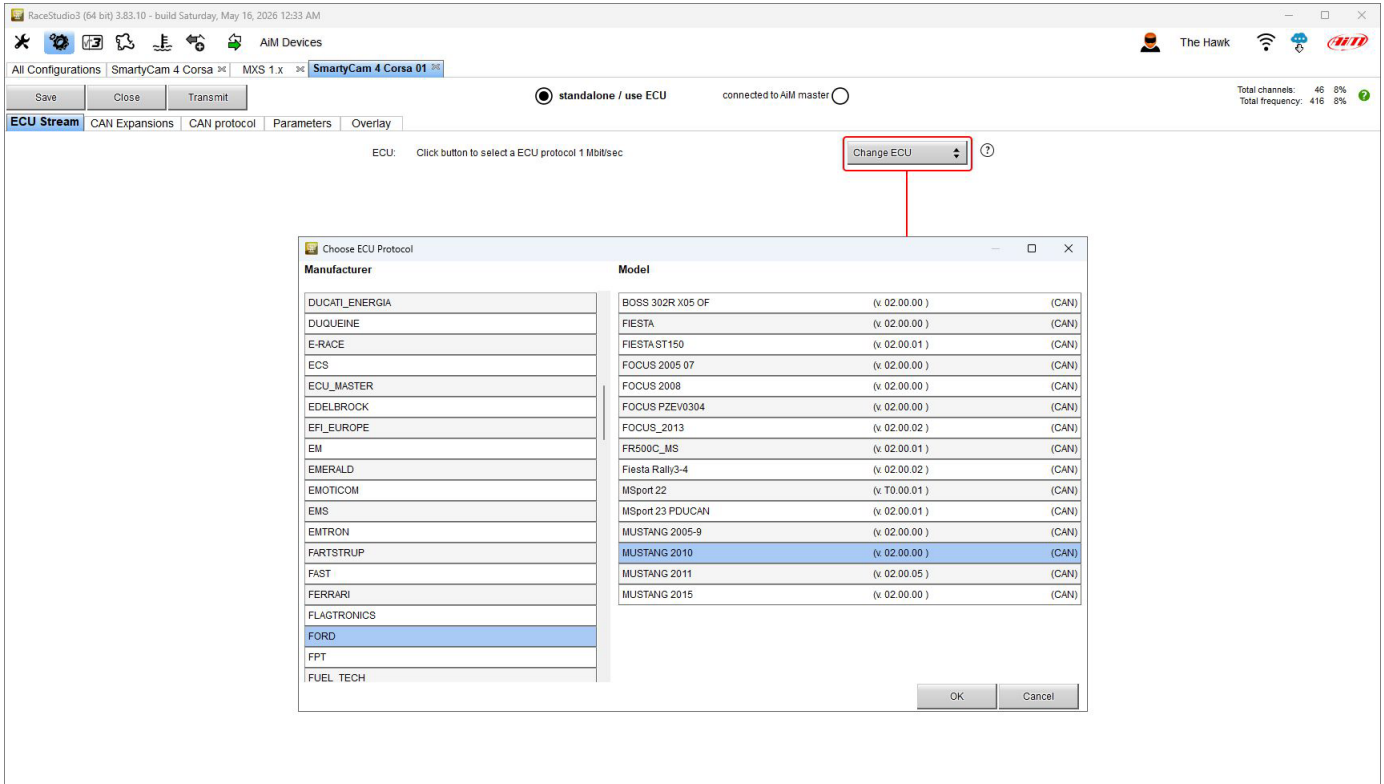
The screenshot shows the RaceStudio3 interface with the 'CAN protocol' tab selected. A 'Select Protocol' button is highlighted with a red box and a circled '1'. A dialog box titled 'Select AIM SmartyCam 3 Stream Protocol' is open, showing a table with 'SmartyCam 3 Corsa' and 'MXS 1.x' configuration, with a circled '2' next to it. Below the dialog, a table of 'Enabled Channels' is shown with a circled '3' next to it.

ID	Name	Function	Unit
CC01	Engine RPM	Engine RPM	rpm
CC02	Speed	Vehicle Speed	kmh 0.1
CC03	Gear	Gear	gear
CC04	Water Temp	Water Temperature	C 0.1
CC05	Head Temp	Engine Temperature	C 0.1
CC06	Exhaust Temp	Exhaust Temperature	C 0.1
CC07	Oil Temp	Oil Temperature	C 0.1
CC08	Oil Press	Oil Pressure	bar 0.01
CC09	Brake Press	Brake Circuit Pressure	bar 0.1
CC10	Throttle Pos	Percent Throttle Load	% 0.01
CC11	Brake Pos	Percent Brake Load	% 0.01
CC12	Clutch Pos	Percent	% 0.01
CC13	Steering Pos	Steering Angle	deg 0.1
CC14	Lambda	Lambda	lambda 0.01
CC15	Lateral Acc	Lateral Acceleration	g 0.01
CC16	Inline Acc	Inline Acceleration	g
CC17	Fuel Level	Percent Fuel Level	%
CC18	Battery Voltage	Battery Voltage	mV 0.1
CC19	Vertical Acc	Vertical Acceleration	g 0.01
CC20	Heart Rate	Heart Rate	bpm

ID	Name	Function	Unit
C103	TPS	Throttle Position	in 0.1
C101	RPM	Engine RPM	rpm
C102	Gear	Gear	gear

8.1.5 – ECU Stream

SmartyCam 4 Corsa features a second CAN protocol that allows the user to set the ECU Stream selecting it in a wide range of supported ECUs. At the very first configuration, “ECU Stream” tab displays empty; pressing “Change ECU” button the setup panel is prompted. To change it later, press “Change ECU” button again and the panel will be prompted again.



8.2 – Loading the configuration to SmartyCam 4

All cameras allow the configuration to be transmitted through the (Micro) SD card but the new **SmartyCam 4 Corsa** allow the configuration to be transmitted through the USB-C connection too. To transmit the configuration:

- keep the camera switched on and connected to the PC
- press “Save” (1) button top left of the software view
- press “Transmit” (2) and the camera will receive the configuration



8.3 – Track Management

Track Manager is the software section dedicated to track management. Here you can create or delete tracks, modify their settings and load them to the memory card or directly to SmartyCam 4. Press “Tracks” on the top-left toolbar of RaceStudio 3.



The main page is divided into three columns. On the **Left**:

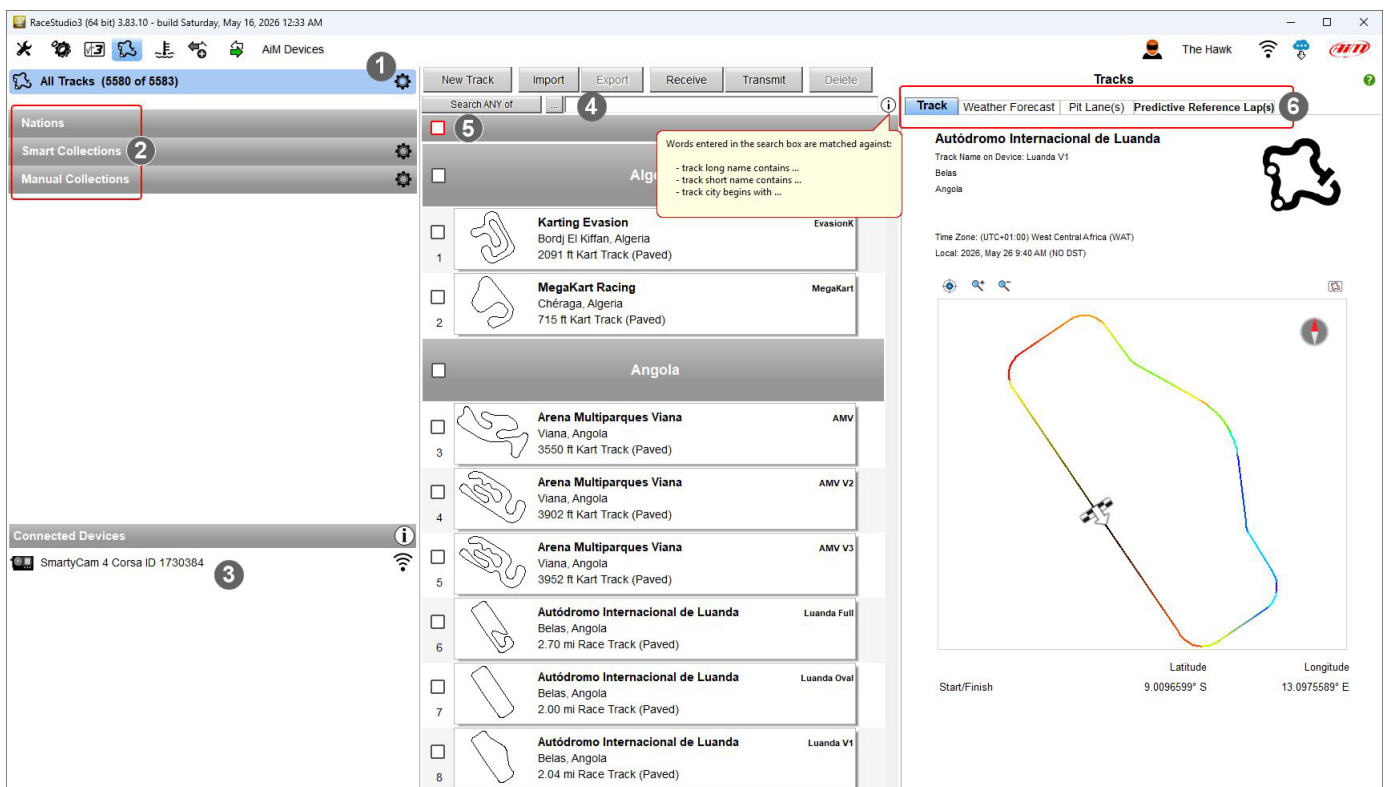
- **on top**, the filters used to group the tracks; by default, all tracks are shown (1). Available filters (2) are:
 - Nations: select the nation whose tracks you want to view;
 - Smart Collections: clicking the settings icon a panel that allows you to select continent, nation, circuit type and road surface is prompted; select the desired criteria and specify the filters used if desired;
 - Manual: clicking the settings icon a collection panel is prompted: name it and drag and drop the tracks into it.
- **bottom**, connected devices — in the image “SmartyCam 4 Corsa ID 1730384” (3).

Middle:

- **on top**, a quick search bar (4) to select the tracks matching your search criteria. Mousing over “I” icon a tooltip explaining the search criteria (highlighted in red) is prompted, namely:
 - track long name contains...: the long name is the name shown in bold in each track box;
 - track short name contains...: the short name is the track name shown at the top right of each track box;
 - track city begins with...: the name of the city where the track is located.
- Immediately below is a checkbox that allows to select all tracks listed in RaceStudio 3 database (5).

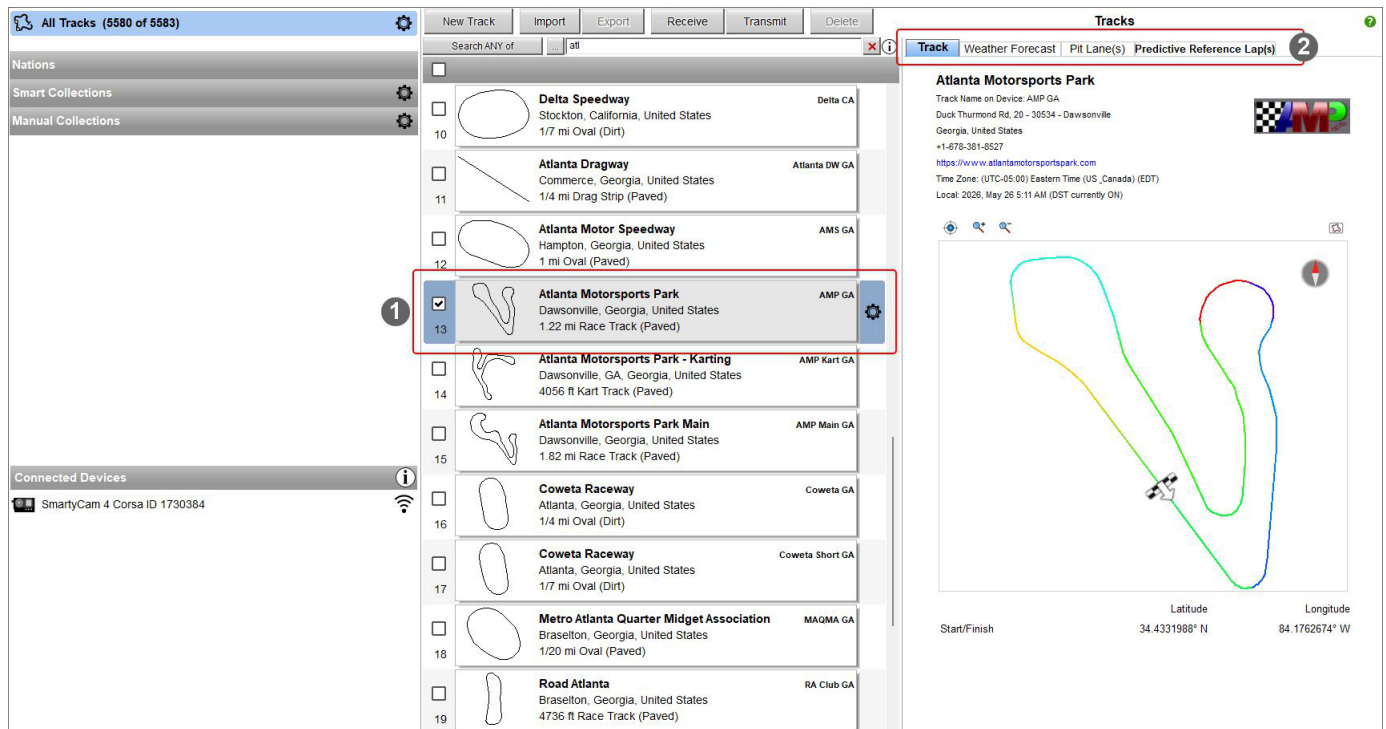
Please note: the track database can be updated at start-up if an Internet connection is available.

On the **Right**, multiple tabs (6) explained in the following page:



Selecting a track in the central column (1) tabs available on the right (2) supply the following information:

- the data sheet of the track you are hovering over
- its weather forecast, if available.
- The pit lane (if available)
- Predictive reference lap(s) if available



Top central keyboard buttons are to:

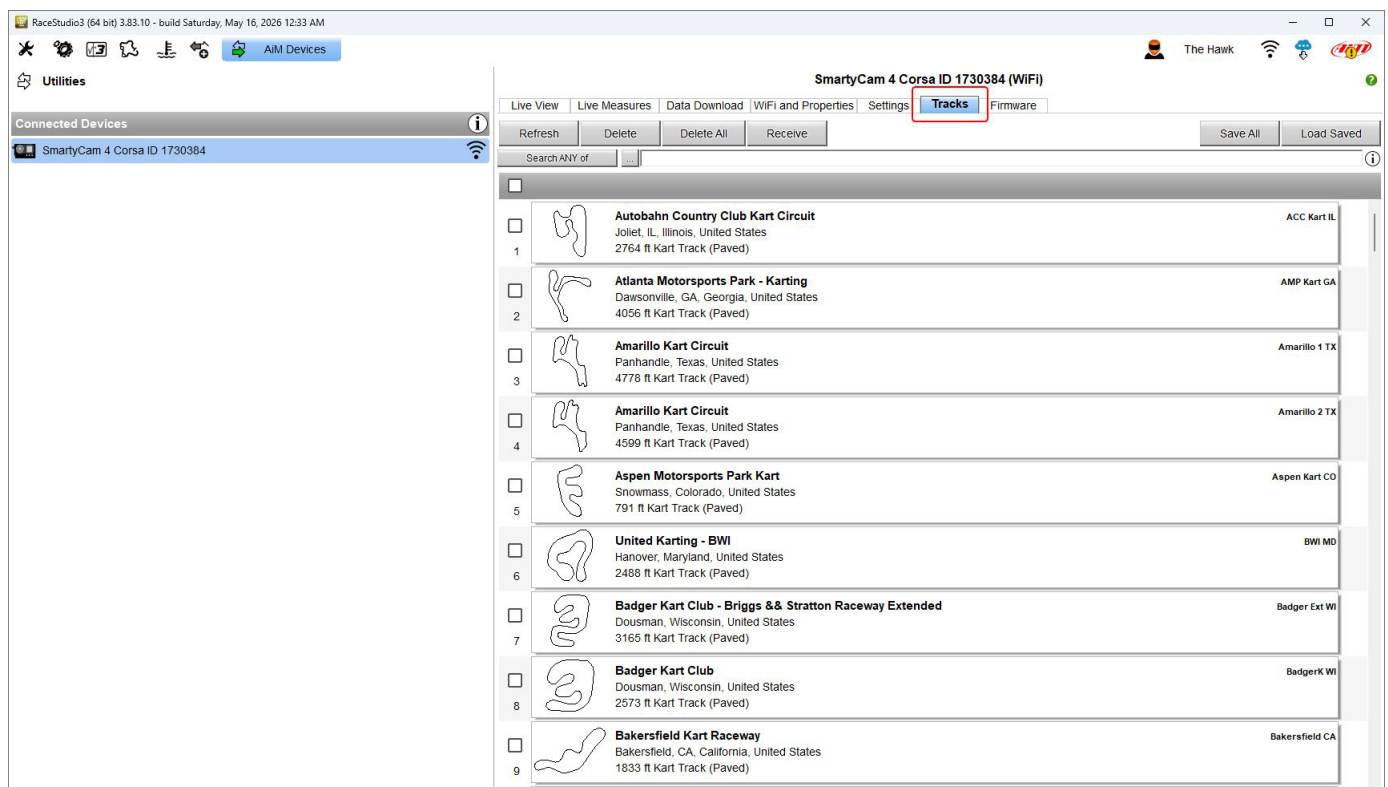


- **New Track:** create a new track;
- **Import:** import one or more tracks stored on SmartyCam 4 or in another connected device;
- **Export:** export one or more tracks to a specific PC folder or to another peripheral device;
- **Receive:** receive from SmartyCam 4 the tracks created by the user;
- **Transmit:** transmit one or more tracks from the PC to SmartyCam 4;



Clicking on SmartyCam 4 connected – bottom left of the software view – the software enters device page “Tracks” tab. It features a top keyboard whose buttons are to:

- **Refresh:** refresh the track list stored on SmartyCam 4;
- **Delete:** delete one or more tracks from SmartyCam 4 memory card;
- **Delete All:** deletes all tracks stored in SmartyCam 4 memory card;
- **Receive:** receives tracks stored in SmartyCam 4 memory card
- **Save all:** save all the tracks stored in SmartyCam 4 memory card, creating a zip file that can be loaded onto another AiM device;
- **Load Saved:** load the tracks previously saved on the SmartyCam 4 memory card



8.4 – Video Management

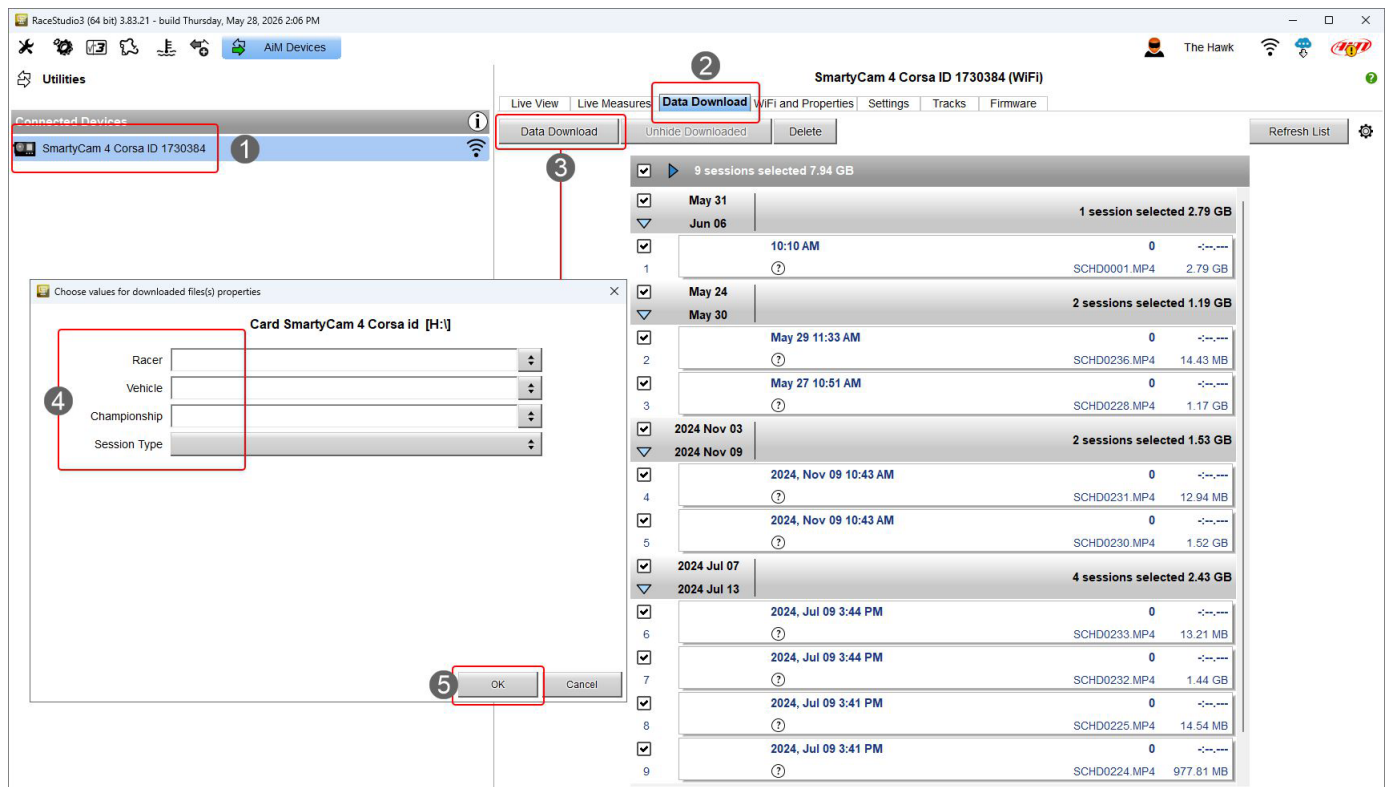
Once a track session is over you can review SmartyCam 4 videos on a PC.

Please note: as previous cameras, SmartyCam 4 Corsa manages H.264 format videos but, **starting from firmware version 01.00.11 it supports H.265 format too.**

Videos can be downloaded through the Wi-Fi or using the USB-C memory card.

To download data stored in SmartyCam 4 using the Wi-Fi:

- keep SmartyCam 4 switched on and connected to the PC
- click SmartyCam left of the software view (1)
- enter Data Download tab (2)
- click “Data Download” (3)
- a panel allowing to fill in values to be used as filters is prompted: fill in the fields (4)
- Press “OK” (5)



To download data stored in SmartyCam 4 using the USB-C memory card

- remove the card from the camera;
- place it in the PC slot and manage it as a USB peripheral;
- run RaceStudio 3 software;
- click on the card bottom left of the software page (1);
- the list of videos stored on the card is shown in “Data Download” tab on the right side of the page (2);
- press “Data Download” button on the top toolbar (3);
- a panel allowing to fill in values to be used as filters is prompted: fill in the fields (4);
- press “OK” (5)

The screenshot shows the RaceStudio3 software interface. The 'Connected Devices' list on the left shows 'Card SmartyCam 4 Corsa id [H:]' selected with a circled '1'. The 'Data Download' tab is active, showing a list of sessions with a circled '2' on the 'Data Download' button. A dialog box titled 'Choose values for downloaded files(s) properties' is open, with a circled '4' on the 'OK' button. The dialog box contains four dropdown menus: 'Racer', 'Vehicle', 'Championship', and 'Session Type'. The 'OK' button is circled with a '5'. The main window shows a list of sessions with columns for session number, time, and file size. The sessions are grouped by date, including May 24, 2024, and July 07, 2024.

Session	Time	File Size
3	8:17 AM	3.55 GB
4	May 29 9:33 AM	14.43 MB
5	May 27 8:51 AM	1.17 GB
6	2024, Nov 09 8:43 AM	12.94 MB
7	2024, Nov 09 8:43 AM	1.52 GB
8	2024, Jul 09 1:44 PM	13.21 MB
9	2024, Jul 09 1:44 PM	1.44 GB
10	2024, Jul 09 1:41 PM	14.54 MB
11	2024, Jul 09 1:41 PM	977.81 MB



When all files have been downloaded, run RaceStudio 3 Analysis: the videos you have just downloaded will appear in the central column of the page. Click on any video to start watching it.

Please refer to Race Studio 3 Analysis user manual for further information about the software working mode.

The screenshot displays the RaceStudio 3 Analysis software interface. The main window is titled "RaceStudio3 (64 bit) 3.83.17". The interface is divided into several sections:

- Left Panel:** "All Events (70 sessions of 70)". A list of sessions with columns for #, Date, and Track. The selected session is "2026, June 04" at "ClubMotors".
- Top Center:** "Search ANY of" and "ClubMotors - 2026, June 04".
- Center Table:** A table showing race details for "2026, Jun 04". The table has columns for Lap(s), Best, Sessi... Racer, Vehicle Cha..., and Track. The selected lap is 4, with a time of 1:48.551.
- Right Panel:** "SmartyCam 4 Corsa [ID: 1730384] - 2026, Jun 04 9:44 AM". A table showing lap times and percentages. The selected lap is 4, with a time of 1:48.551.
- Bottom Right:** A graph showing "GPS Speed (mph)" vs "Distance (ft)". The graph shows a fluctuating speed profile over a distance of 0 to 10000 feet.

Lap	Time	Pct	Min	Avg	Max
out	8:22.925	463.31	0.0	2.1	16.2
1	4:09.208	229.58	0.0	32.3	74.6
in	3:04.817	170.26	0.0	46.1	111.8
2	2:17.558	126.72	38.2	57.8	104.8
6	1:56.332	107.17	41.0	68.2	110.0
3	1:54.288	105.29	38.8	69.5	110.6
5	1:49.467	100.84	42.4	72.5	114.4
7	1:48.656	100.10	44.7	72.9	113.1
4	1:48.551	100.00	45.1	73.2	114.2



9 – Technical specifications and drawings

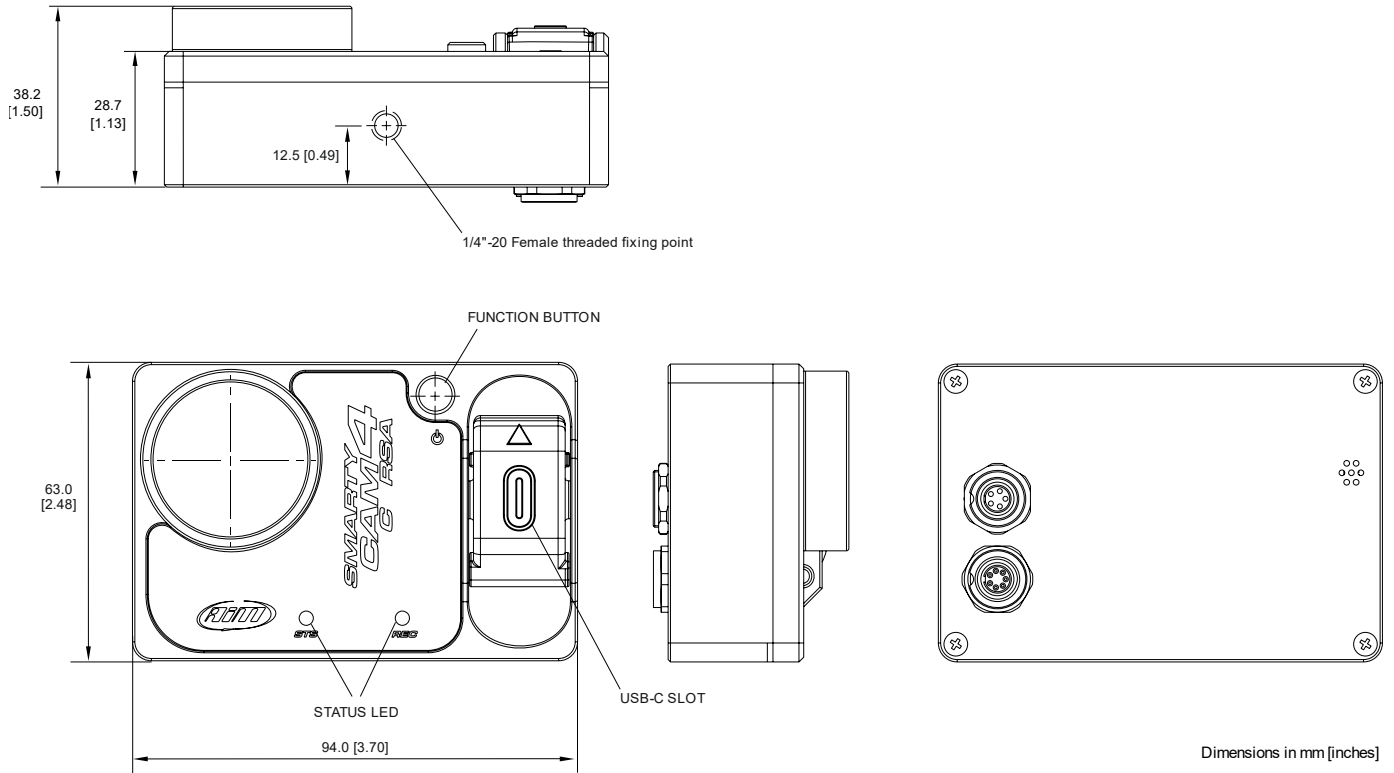
SmartyCam 4 Corsa technical specifications:

• Video Format	H.264/H.265* configurable 1920x1080 pixels @30/60fps
• Lens	85° low distortion lens
• Sensor	Sony 12 MP CMOS
• Stabilizer	LSI Sony for enhanced features
• Connection	USB, Wi-Fi, BLE (Bluetooth Low Energy)
• Streaming	Via USB or via Wi-Fi
• Internal battery	Rechargeable LiPo battery
• External Power	9-15 Volt
• Supported memory	USB-C drive up to 2TB
• Connectors	2 Binder 712 female, 1 USB-C
• Temperatures working range	-10°C/+50°C – 14°F/122°F
• Auto power ON/OFF	Yes
• Auto Start/Stop recording	Yes
• Body	Anodized Aluminium
• Dimensions	94x63x28.7mm – 3.7x2.48x1.13 inches
• Weight	260g battery included
• RaceStudio 3 desktop and App software	Yes
• Waterproof	IP65

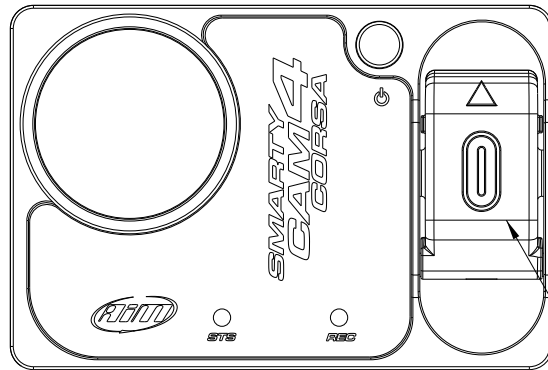
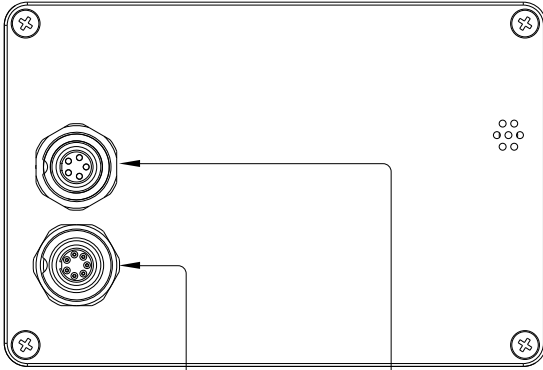
***Please note:** H265 video format is supported from firmware version 01.00.11 onward



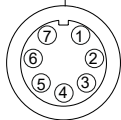
SmartyCam 4 Corsa dimensions in mm [inches]



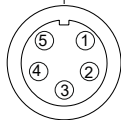
SmartyCam 4 Corsa pinout



USB - C
SLOT



Binder 7 pins female
connector - pinout
external view



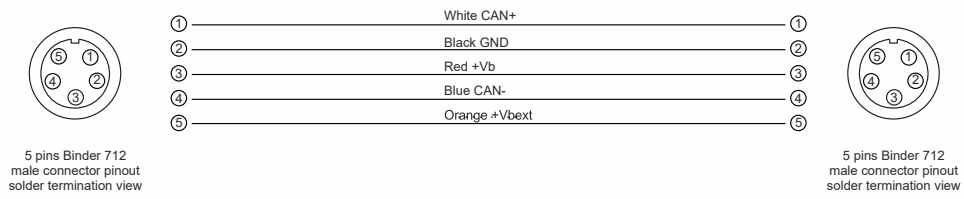
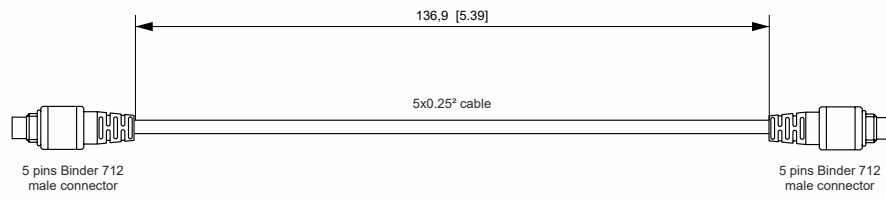
Binder 5 pins female
connector - pinout
external view

1	ECU CAN+
2	GND
3	+Vbout
4	ECU CAN-
5	+Vbext
6	Ext Mic-
7	Ext Mic+

1	AIM CAN+
2	GND
3	+Vbout
4	AIM CAN-
5	+Vbext

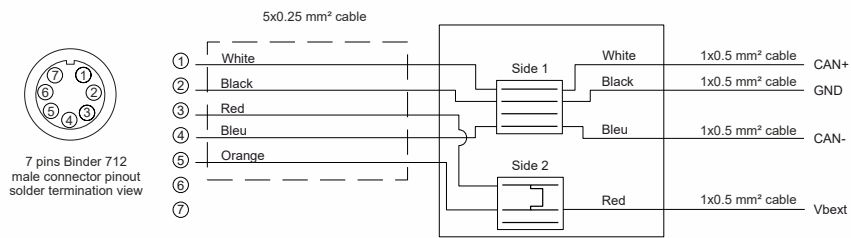
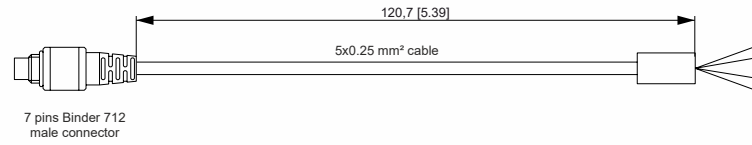
SmartyCam 4 Corsa CAN cable – V02554820

2m SmartyCam 4 CAN cable



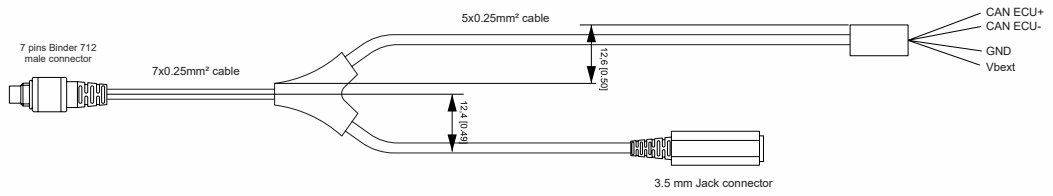
SmartyCam 4 Corsa ECU CAN cable + external power – V02566930

2m CAN+Power cable for SmartyCam 4 Corsa



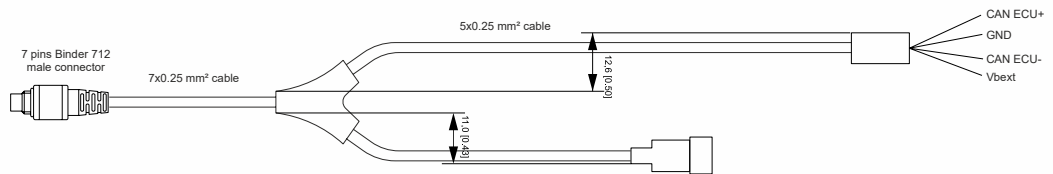
ECU CAN cable with Jack – V02584140

2m CAN ECU + Jack for external microphone cable for SmartyCam 4



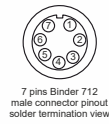
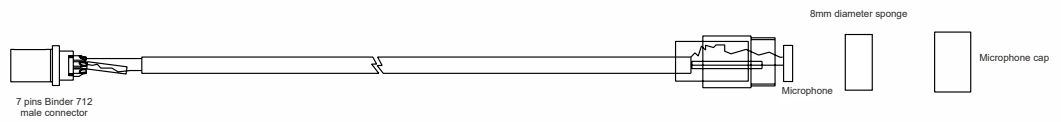
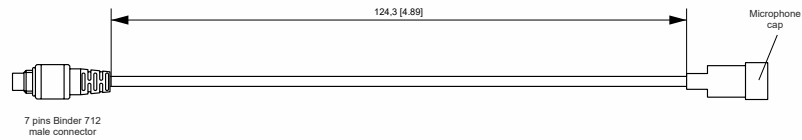
ECU CAN cable + microphone – V02584120

CAN+External Power+external microphone cable for SmartyCam 4



Microphone cable – V02584030

1m SmartyCam external microphone cable



- ① n.c.
- ② n.c.
- ③ n.c.
- ④ n.c.
- ⑤ n.c.
- ⑥ GND
- ⑦ Microphone

