

## Race Studio 3

# Fuel Used Channel

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### Question:

How can I obtain the information referred to the used fuel during each session?

### Answer:

The Fuel Used channel, which informs about the used fuel quantity, can be activated configuring your device properly. Once the session is finished, the value is represented in the Counters tab of the connected device menu (through Race Studio 3) and in the device menu Counter page as well (from the device itself).


**N.B.:** the Fuel Used channel can be activated **only** in the MXx and EVOx devices configurations, starting from the Race Studio 3 release n. **3.16.20**;

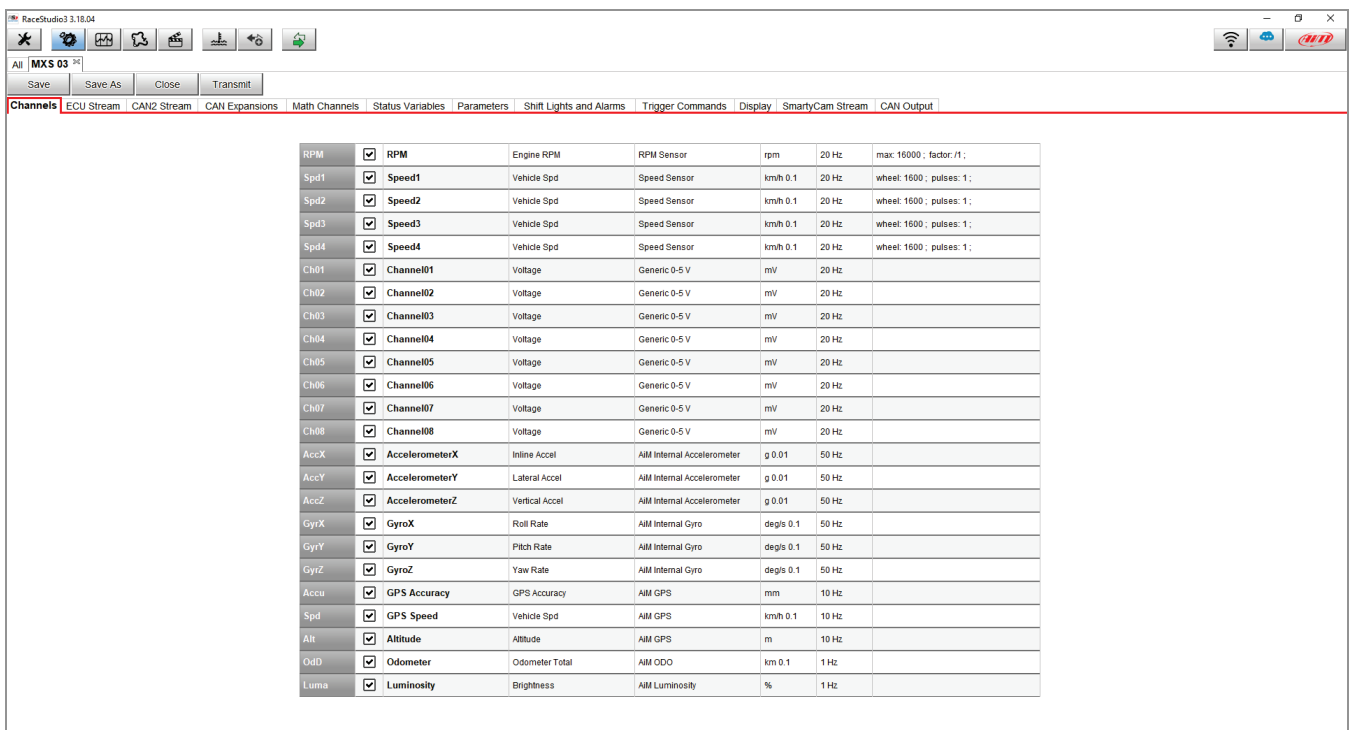
**N.B.:** this parameter can be calculated by the AiM systems **only if** in the device configuration an ECU communication protocol is selected, which includes the channel with Fuel Flow function (consumed fuel over time).



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The Fuel Used can be included in the available channels list (Channels tab) in the following way:

- Enter in the Configurations section of Race Studio 3 () , choose for an existing configuration or create a new one clicking "New". After the device type has been selected and its name and eventually a comment have been added, click "OK": by default, the Channels tab is shown, which reports the available channels list (in the list, the Fuel Used channel is not present; see following image).

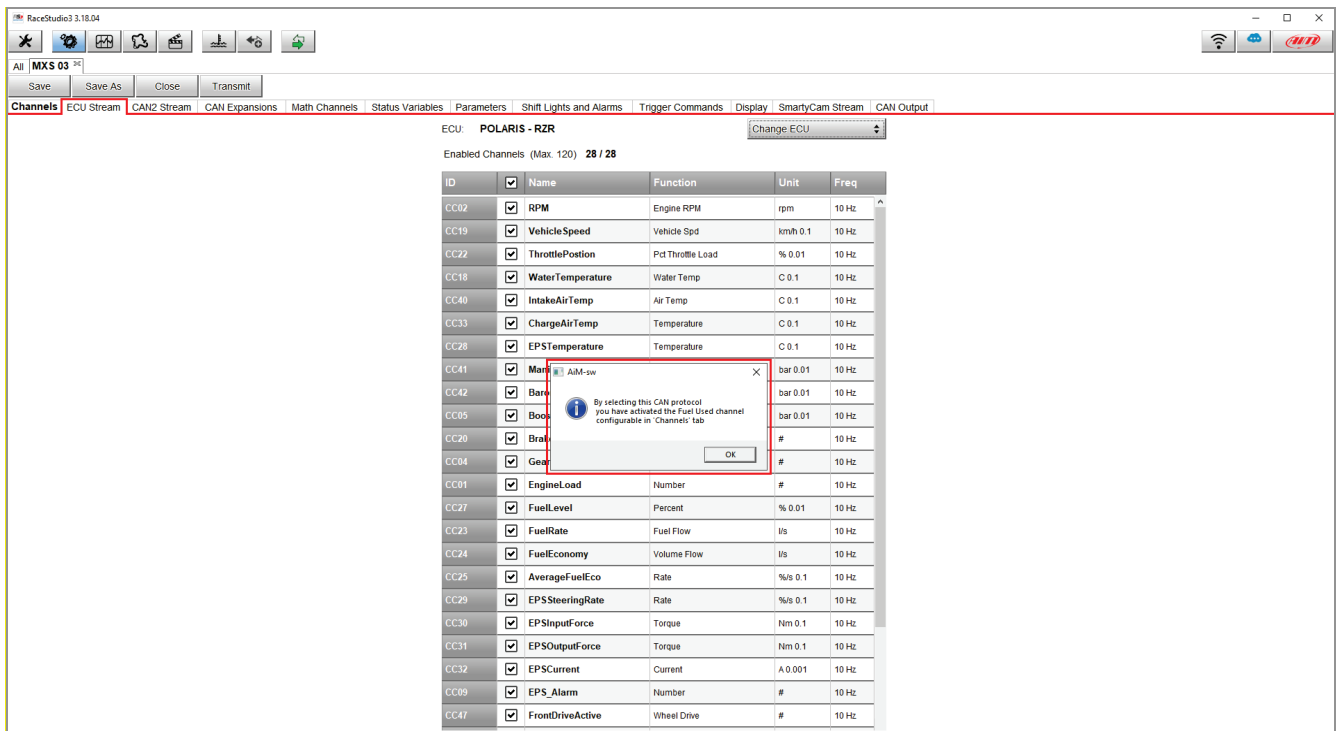


The screenshot shows the RaceStudio3 3.18.04 interface with the 'Channels' tab selected. The 'Channels' tab is highlighted in the top menu bar. Below the menu bar, there are buttons for 'Save', 'Save As', 'Close', and 'Transmit'. The main area displays a list of channels with checkboxes and columns for Name, Description, Sensor, Units, Frequency, and Range.

Channel	Checked	Name	Description	Sensor	Units	Frequency	Range
RPM	<input checked="" type="checkbox"/>	RPM	Engine RPM	RPM Sensor	rpm	20 Hz	max: 16000 ; factor: 1 ;
Spd1	<input checked="" type="checkbox"/>	Speed1	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Spd2	<input checked="" type="checkbox"/>	Speed2	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Spd3	<input checked="" type="checkbox"/>	Speed3	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Spd4	<input checked="" type="checkbox"/>	Speed4	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Ch01	<input checked="" type="checkbox"/>	Channel01	Voltage	Generic 0-5 V	mV	20 Hz	
Ch02	<input checked="" type="checkbox"/>	Channel02	Voltage	Generic 0-5 V	mV	20 Hz	
Ch03	<input checked="" type="checkbox"/>	Channel03	Voltage	Generic 0-5 V	mV	20 Hz	
Ch04	<input checked="" type="checkbox"/>	Channel04	Voltage	Generic 0-5 V	mV	20 Hz	
Ch05	<input checked="" type="checkbox"/>	Channel05	Voltage	Generic 0-5 V	mV	20 Hz	
Ch06	<input checked="" type="checkbox"/>	Channel06	Voltage	Generic 0-5 V	mV	20 Hz	
Ch07	<input checked="" type="checkbox"/>	Channel07	Voltage	Generic 0-5 V	mV	20 Hz	
Ch08	<input checked="" type="checkbox"/>	Channel08	Voltage	Generic 0-5 V	mV	20 Hz	
AccX	<input checked="" type="checkbox"/>	AccelerometerX	Inline Accel	AIM Internal Accelerometer	g 0.01	50 Hz	
AccY	<input checked="" type="checkbox"/>	AccelerometerY	Lateral Accel	AIM Internal Accelerometer	g 0.01	50 Hz	
AccZ	<input checked="" type="checkbox"/>	AccelerometerZ	Vertical Accel	AIM Internal Accelerometer	g 0.01	50 Hz	
GyrX	<input checked="" type="checkbox"/>	GyroX	Roll Rate	AIM Internal Gyro	deg/s 0.1	50 Hz	
GyrY	<input checked="" type="checkbox"/>	GyroY	Pitch Rate	AIM Internal Gyro	deg/s 0.1	50 Hz	
GyrZ	<input checked="" type="checkbox"/>	GyroZ	Yaw Rate	AIM Internal Gyro	deg/s 0.1	50 Hz	
Accu	<input checked="" type="checkbox"/>	GPS Accuracy	GPS Accuracy	AIM GPS	mm	10 Hz	
Spd	<input checked="" type="checkbox"/>	GPS Speed	Vehicle Spd	AIM GPS	km/h 0.1	10 Hz	
Alt	<input checked="" type="checkbox"/>	Altitude	Altitude	AIM GPS	m	10 Hz	
OdD	<input checked="" type="checkbox"/>	Odometer	Odometer Total	AIM ODO	km 0.1	1 Hz	
Luma	<input checked="" type="checkbox"/>	Luminosity	Brightness	AIM Luminosity	%	1 Hz	

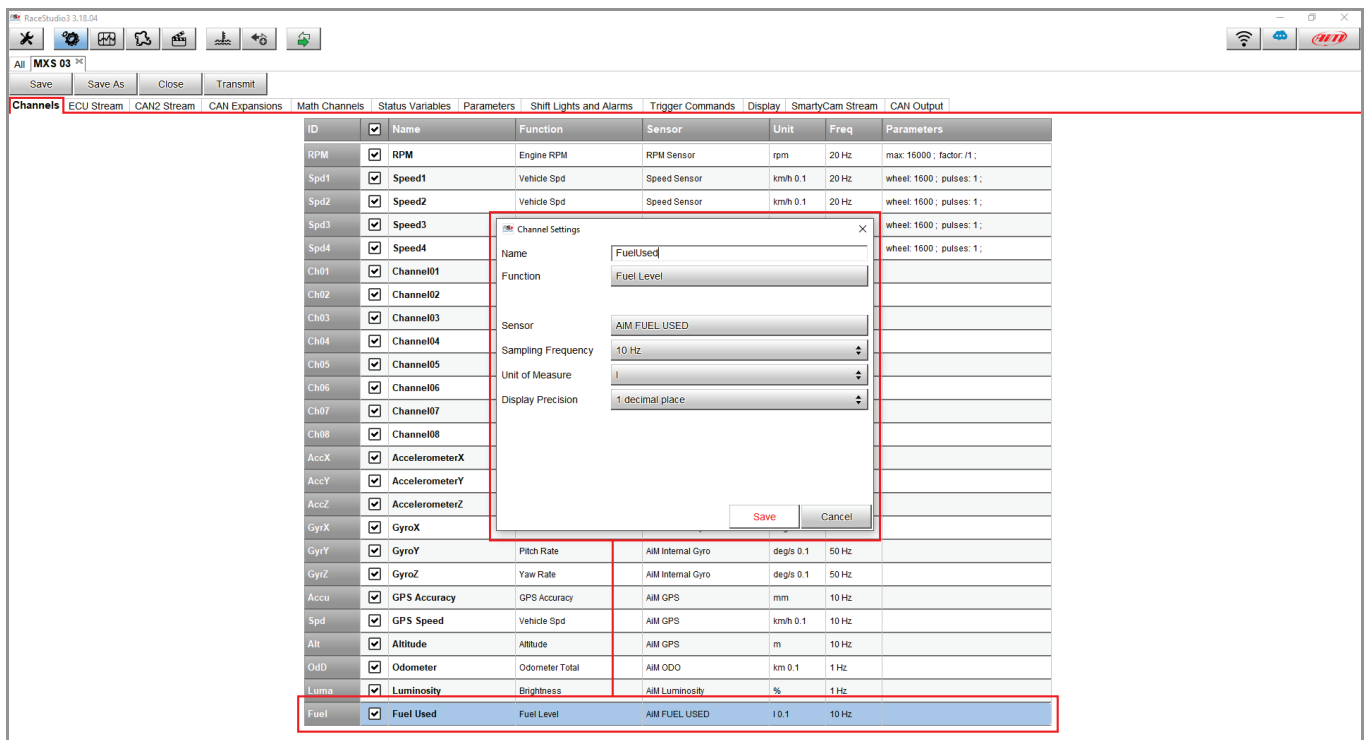
## Race Studio 3

- Entering the ECU Stream tab, it is possible to choose the ECU communication protocol available for your vehicle: **only if it features one channel with the Fuel Flow function**, a popup window appears which communicates that the Fuel Used channel has been activated and it can be configured from the Channels tab.



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- Going back to the Channels tab, it is now possible to find the Fuel Used channel (by default, placed at the bottom of the list): clicking it, the settings window appears (lower image), from whom it is possible to modify the channels name, its sampling frequency, its measurement unit and its displayed decimal places.



The screenshot shows the RaceStudio3 3.18.04 interface. The 'Channels' tab is selected, displaying a list of channels. A 'Channel Settings' dialog box is open, showing the configuration for the 'Fuel Used' channel. The dialog box has the following fields:

- Name: FuelUsed
- Function: Fuel Level
- Sensor: AIM FUEL USED
- Sampling Frequency: 10 Hz
- Unit of Measure: l
- Display Precision: 1 decimal place

The 'Save' button is highlighted in red. The 'Fuel Used' channel is also highlighted in blue in the main list.

ID	Checked	Name	Function	Sensor	Unit	Freq	Parameters
RPM	<input checked="" type="checkbox"/>	RPM	Engine RPM	RPM Sensor	rpm	20 Hz	max: 16000 ; factor: /1 ;
Spd1	<input checked="" type="checkbox"/>	Speed1	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Spd2	<input checked="" type="checkbox"/>	Speed2	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Spd3	<input checked="" type="checkbox"/>	Speed3					wheel: 1600 ; pulses: 1 ;
Spd4	<input checked="" type="checkbox"/>	Speed4					wheel: 1600 ; pulses: 1 ;
Ch01	<input checked="" type="checkbox"/>	Channel01					
Ch02	<input checked="" type="checkbox"/>	Channel02					
Ch03	<input checked="" type="checkbox"/>	Channel03					
Ch04	<input checked="" type="checkbox"/>	Channel04					
Ch05	<input checked="" type="checkbox"/>	Channel05					
Ch06	<input checked="" type="checkbox"/>	Channel06					
Ch07	<input checked="" type="checkbox"/>	Channel07					
Ch08	<input checked="" type="checkbox"/>	Channel08					
AccX	<input checked="" type="checkbox"/>	AccelerometerX					
AccY	<input checked="" type="checkbox"/>	AccelerometerY					
AccZ	<input checked="" type="checkbox"/>	AccelerometerZ					
GyrX	<input checked="" type="checkbox"/>	GyroX					
GyrY	<input checked="" type="checkbox"/>	GyroY	Pitch Rate	AIM Internal Gyro	deg/s 0.1	50 Hz	
GyrZ	<input checked="" type="checkbox"/>	GyroZ	Yaw Rate	AIM Internal Gyro	deg/s 0.1	50 Hz	
Accu	<input checked="" type="checkbox"/>	GPS Accuracy	GPS Accuracy	AIM GPS	mm	10 Hz	
Spd	<input checked="" type="checkbox"/>	GPS Speed	Vehicle Spd	AIM GPS	km/h 0.1	10 Hz	
Alt	<input checked="" type="checkbox"/>	Altitude	Altitude	AIM GPS	m	10 Hz	
OdD	<input checked="" type="checkbox"/>	Odometer	Odometer Total	AIM ODO	km 0.1	1 Hz	
Luma	<input checked="" type="checkbox"/>	Luminosity	Brightness	AIM Luminosity	%	1 Hz	
Fuel	<input checked="" type="checkbox"/>	Fuel Used	Fuel Level	AIM FUEL USED	l 0.1	10 Hz	

Once these first settings are done, click Save and they will be stored by the software, so that the Fuel Used channel can be utilised in the other device configuration section tabs.

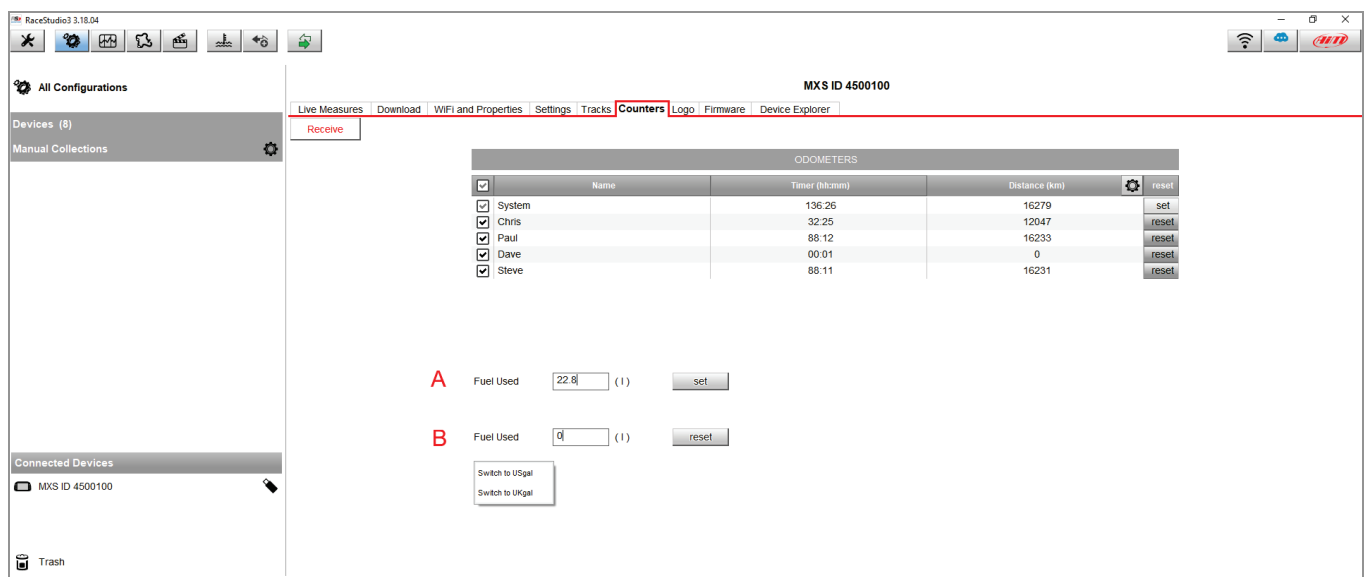
## Race Studio 3

### 1.1 – Fuel Used value management through Race Studio 3

Once the session is over, with connected device to the PC, it is possible to obtain the counters updated values: from the Counters tab, click Receive (upper page zone; see following image) to refresh the odometers and the Fuel Used values.

Additionally, it is possible to transmit a Fuel Used value to the device, digiting it in the field and clicking the “set” button (A). The Fuel Used value can be reset too, digiting “0” in the field and clicking “reset” to transmit the value to the device (B).

Clicking the Fuel Used label or the current measurement unit symbol, it is possible to modify the measurement unit itself (the choice is among liters, UKgal or USgal).



The used fuel quantity value can be reset from the devices too:

- MXx Series: MENU/<< -> Counters -> move to the Fuel Used row -> CHANGE -> OK (the Reset option is automatically selected);
- EVOx Series: MENU -> Counters -> move to the Fuel Used row -> RESET (if an AiM visor is plugged into the net).

## Race Studio 3

### 1.2 – Fuel Used value reset from the device

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The Fuel Used channel value can be reset using the system keyboard: from the device main pages, pressing the ">>" button, a popup message appears for this reset confirmation (following image). Pressing "YES" ("MEM/OK" button), the channel value will return to zero.

The same operation can be executed using the Remote Buttons Interface module, pressing the ">>" (function button 2), then "MEM/OK" (function button 3).

