



Race Studio 3

Fuel Used Channel

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).

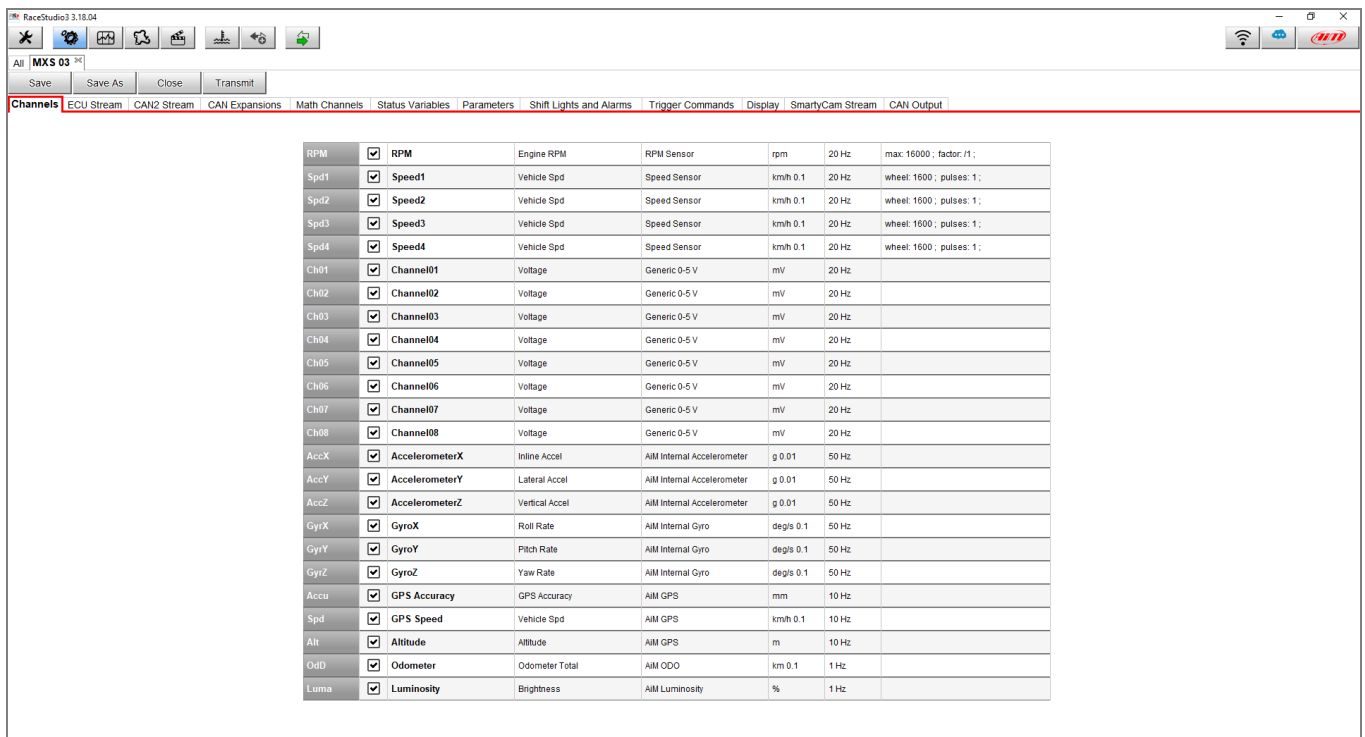
N.B.: the Fuel Used channel can be activated **only** in the MXx and EVOx devices configurations, starting from the Race Studio 3 release n. **3.16.20**;

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).

Race Studio 3

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).



Channel Name	Unit	Source	Resolution	Frequency	Scale
<input checked="" type="checkbox"/> RPM	Engine RPM	RPM Sensor	rpm	20 Hz	mac: 16000 ; factor: /1 ;
<input checked="" type="checkbox"/> Spd1	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
<input checked="" type="checkbox"/> Spd2	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
<input checked="" type="checkbox"/> Spd3	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
<input checked="" type="checkbox"/> Spd4	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
<input checked="" type="checkbox"/> Ch01	Voltage	Generic 0-5 V	mV	20 Hz	
<input checked="" type="checkbox"/> Ch02	Voltage	Generic 0-5 V	mV	20 Hz	
<input checked="" type="checkbox"/> Ch03	Voltage	Generic 0-5 V	mV	20 Hz	
<input checked="" type="checkbox"/> Ch04	Voltage	Generic 0-5 V	mV	20 Hz	
<input checked="" type="checkbox"/> Ch05	Voltage	Generic 0-5 V	mV	20 Hz	
<input checked="" type="checkbox"/> Ch06	Voltage	Generic 0-5 V	mV	20 Hz	
<input checked="" type="checkbox"/> Ch07	Voltage	Generic 0-5 V	mV	20 Hz	
<input checked="" type="checkbox"/> Ch08	Voltage	Generic 0-5 V	mV	20 Hz	
<input checked="" type="checkbox"/> Acc-X	Inline Accel	AIM Internal Accelerometer	g 0.01	50 Hz	
<input checked="" type="checkbox"/> Acc-Y	Lateral Accel	AIM Internal Accelerometer	g 0.01	50 Hz	
<input checked="" type="checkbox"/> Acc-Z	Vertical Accel	AIM Internal Accelerometer	g 0.01	50 Hz	
<input checked="" type="checkbox"/> Gyr-X	Roll Rate	AIM Internal Gyro	deg/s 0.1	50 Hz	
<input checked="" type="checkbox"/> Gyr-Y	Pitch Rate	AIM Internal Gyro	deg/s 0.1	50 Hz	
<input checked="" type="checkbox"/> Gyr-Z	Yaw Rate	AIM Internal Gyro	deg/s 0.1	50 Hz	
<input checked="" type="checkbox"/> Accu	GPS Accuracy	AIM GPS	mm	10 Hz	
<input checked="" type="checkbox"/> Spd	GPS Speed	AIM GPS	km/h 0.1	10 Hz	
<input checked="" type="checkbox"/> Alt	Altitude	AIM GPS	m	10 Hz	
<input checked="" type="checkbox"/> OdD	Odometer Total	AIM ODO	km 0.1	1 Hz	
<input checked="" type="checkbox"/> Luma	Brightness	AIM Luminosity	%	1 Hz	

Race Studio 3

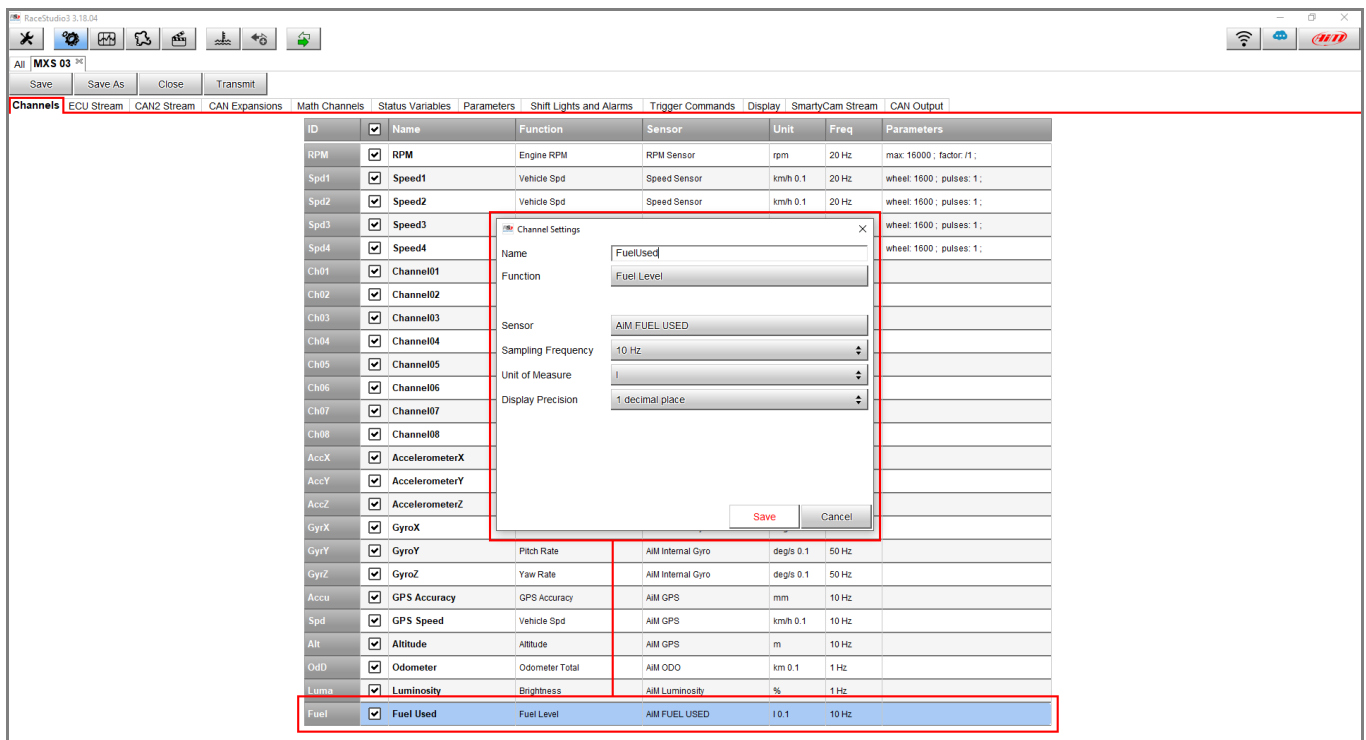
- Entering the ECU Stream tab, it is possible to choose the ECU communication protocol available for your vehicle: **only if it features one channel with the Fuel Flow function**, a popup window appears which communicates that the Fuel Used channel has been activated and it can be configured from the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

The screenshot shows the Race Studio 3 interface with the ECU Stream tab selected. The ECU is identified as POLARIS - RZR. A list of enabled channels is shown, including RPM, VehicleSpeed, ThrottlePosition, WaterTemperature, IntakeAirTemp, ChargeAirTemp, EPSTemperature, and FuelUsed. A popup window is overlaid on the FuelUsed channel, with the message: "By selecting this CAN protocol you have activated the Fuel Used channel configurable in 'Channels' tab". The popup has an OK button.

ID	Name	Function	Unit	Freq
CC02	RPM	Engine RPM	rpm	10 Hz
CC19	VehicleSpeed	Vehicle Spd	kmh 0.1	10 Hz
CC22	ThrottlePosition	Pct Throttle Load	% 0.01	10 Hz
CC18	WaterTemperature	Water Temp	C 0.1	10 Hz
CC40	IntakeAirTemp	Air Temp	C 0.1	10 Hz
CC33	ChargeAirTemp	Temperature	C 0.1	10 Hz
CC28	EPSTemperature	Temperature	C 0.1	10 Hz
CC41	FuelUsed	Fuel Used	bar 0.01	10 Hz
CC42	Bar		bar 0.01	10 Hz
CC05	Boo		bar 0.01	10 Hz
CC20	Brak		#	10 Hz
CC04	Gea		#	10 Hz
CC01	EngineLoad	Number	#	10 Hz
CC27	FuelLevel	Percent	% 0.01	10 Hz
CC23	FuelRate	Fuel Flow	l/s	10 Hz
CC24	FuelEconomy	Volume Flow	l/s	10 Hz
CC25	AverageFuelEco	Rate	%s 0.1	10 Hz
CC29	EPSSteeringRate	Rate	%s 0.1	10 Hz
CC30	EPSSInputForce	Torque	Nm 0.1	10 Hz
CC31	EPSSOutputForce	Torque	Nm 0.1	10 Hz
CC32	EPSSCurrent	Current	A 0.001	10 Hz
CC09	EPSSAlarm	Number	#	10 Hz
CC47	FrontDriveActive	Wheel Drive	#	10 Hz

Race Studio 3

- 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.

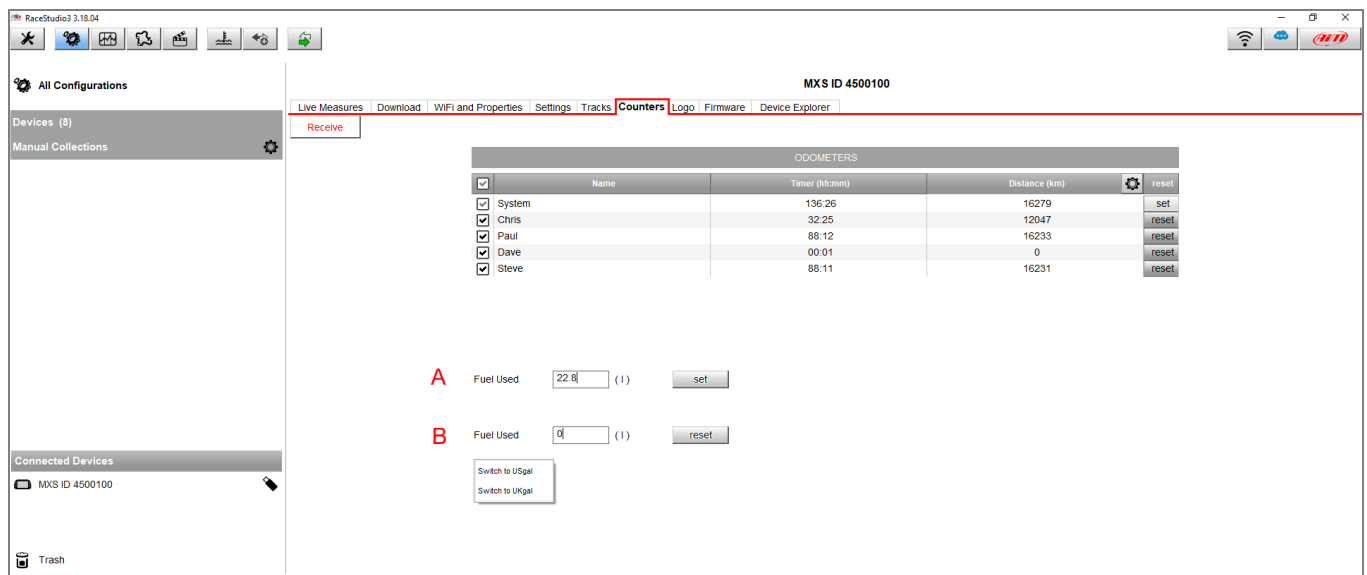


Once these first settings are done, click Save and they will be stored by the software, so that the Fuel Used channel can be utilised in the other device configuration section tabs.

Race Studio 3

- 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).