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AiM Infotech

# Car/Bike speed sensor Race Studio 3 configuration

Release 1.00

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# 1

## Introduction

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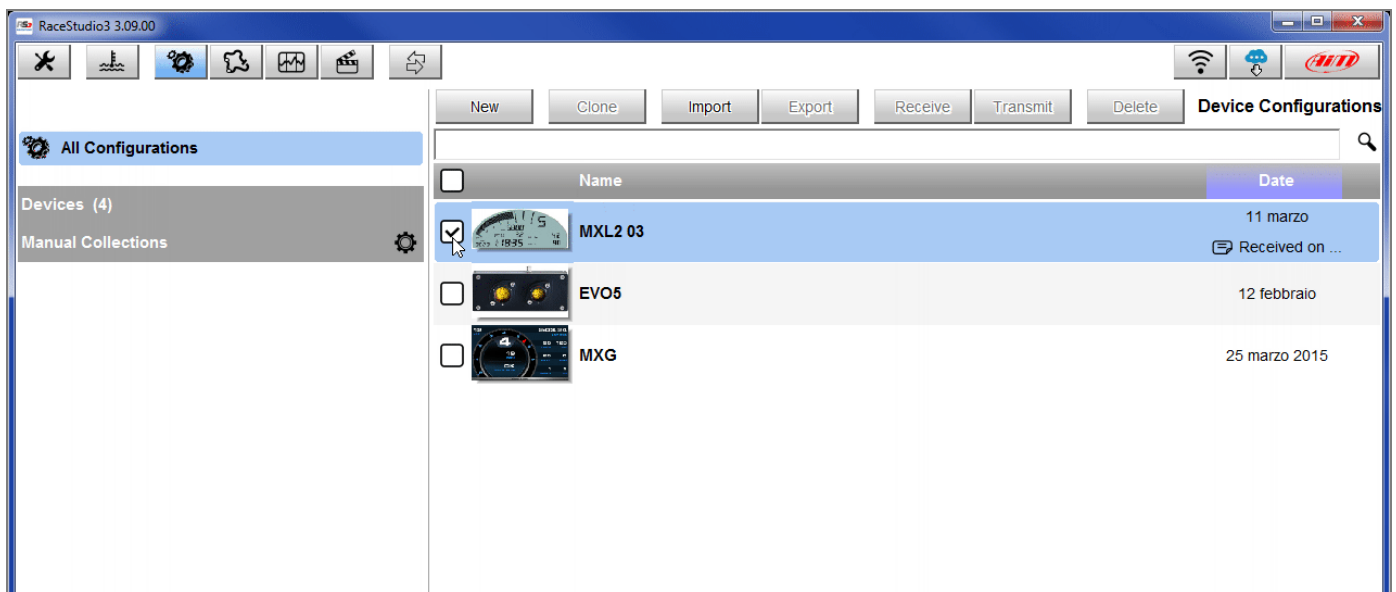
When the sensor is physically connected to a channel of AiM device it is necessary to load it in the related configuration using AiM configuration. In this datasheet it is loaded using **Race Studio 3** software.

# 2

## Configuration with Race Studio 3

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To load the car speed sensor in AiM logger configuration run the software and select the configuration to load it on (in the example MXL2 03).



The software enters "Channels" layer.

- Select the speed channel where you want to set the sensor on – in the example Speed2 (1) and fill in the panel that shows up
- Select "Speed" function and choose:
  - Vehicle Speed, fill in other fields and press "Save" or
  - Wheel Speed(2)

The screenshot shows the RaceStudio3 3.09.00 interface. The 'Channels' tab is active, displaying a table of channels. The 'Speed2' channel is selected, and the 'Channel Settings' dialog box is open for it. The dialog box shows the following configuration:

- Name: Speed2
- Function: Vehicle Spd
- Sensor: Speed Sensor
- Sampling Frequency: 20 Hz
- Unit of Measure: km/h
- Display Precision: 1 decimal place
- Speed Parameters:
  - Wheel circumference [mm]: 1600
  - Pulse per wheel revolution: 1

The 'Parameters' column in the Channels table shows 'wheel: 1600 ; pulses: 1 ;' for Speed2. The 'Wheel Spd' option is highlighted in the sensor dropdown menu.

ID	Name	Function	Sensor	Unit	Freq	Parameters
RPM	RPM	RPM	RPM Sensor	rpm	20 Hz	max: 16000 ; factor: /1 ;
Spd1	Speed1					wheel: 1600 ; pulses: 1 ;
Spd2	Speed2					wheel: 1600 ; pulses: 1 ;
Spd3	Speed3					wheel: 1600 ; pulses: 1 ;
Spd4	Speed4					wheel: 1600 ; pulses: 1 ;
Ch01	Channel01					
Ch02	Channel02					
Ch03	Channel03					
Ch04	Channel04					
Ch05	Channel05					
Ch06	Channel06					
Ch07	Channel07					
Ch08	Channel08					
AccX	AccelerometerX					
AccY	AccelerometerY					
AccZ	AccelerometerZ					
GyrX	GyroX	Ang Velocity	AIM Internal Gyro	deg/s	20 Hz	
GyrY	GyroY	Ang Velocity	AIM Internal Gyro	deg/s	20 Hz	
GyrZ	GyroZ	Ang Velocity	AIM Internal Gyro	deg/s	20 Hz	
Spd	GPS Speed	Vehicle Spd	AIM GPS	km/h 0.1	10 Hz	
OdD	Odometer	Odometer Total	AIM ODO	km 0.1	1 Hz	

In this second case "Position" option appears in the panel:

- click and the panel below shows up:
  - choose the wheel the sensor is connected to
  - press "Save"
- press "Save" again

The screenshot shows the RaceStudio3 3.09.00 interface. A table of channels is visible, and a dialog box titled "Choose position of measure" is open over it. The dialog box contains a top-down view of a car with four wheels marked as circles. The directions "Front", "Rear", "Left", and "Right" are labeled. A red dot is placed on the front-left wheel. The dialog box has "Save" and "Cancel" buttons at the bottom.

ID	Name	Function	Sensor	Unit	Freq	Parameters
RPM	RPM	RPM	RPM Sensor	rpm	20 Hz	max: 16000 ; factor: /1 ;
Spd1	Speed1					wheel: 1600 ; pulses: 1 ;
Spd2	Speed2					wheel: 1600 ; pulses: 1 ;
Spd3	Speed3					wheel: 1600 ; pulses: 1 ;
Spd4	Speed4					wheel: 1600 ; pulses: 1 ;
Ch01	Channel01					
Ch02	Channel02					
Ch03	Channel03					
Ch04	Channel04					
Ch05	Channel05					
Ch06	Channel06					
Ch07	Channel07					
Ch08	Channel08					
AccX	AccelerometerX					
AccY	AccelerometerY					
AccZ	AccelerometerZ					max travel: 50 ;
GyrX	GyroX	Ang Velocity	AIM Internal Gyro	deg/s	20 Hz	
GyrY	GyroY	Ang Velocity	AIM Internal Gyro	deg/s	20 Hz	
GyrZ	GyroZ	Ang Velocity	AIM Internal Gyro	deg/s	20 Hz	
Spd	GPS Speed	Vehicle Spd	AIM GPS	km/h 0.1	10 Hz	
OdD	Odometer	Odometer Total	AIM ODO	km 0.1	1 Hz	



The software shows the sensor installed: in the example it is installed on the front left wheel.

The screenshot shows the RaceStudio3 3.09.00 interface. The 'Channels' tab is active, displaying a table of sensor configurations. The 'Speed2' row is highlighted with a red box, indicating it is selected. The table columns are ID, Name, Function, Sensor, Unit, Freq, and Parameters.

ID	Name	Function	Sensor	Unit	Freq	Parameters
RPM	RPM	RPM	RPM Sensor	rpm	20 Hz	max: 16000 ; factor: /1 ;
Spd1	Speed1	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Spd2	Speed2	Vehicle Spd - Front Left	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Spd3	Speed3	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Spd4	Speed4	Vehicle Spd	Speed Sensor	km/h 0.1	20 Hz	wheel: 1600 ; pulses: 1 ;
Ch01	Channel01	Voltage	Generic 0-5 V	mV	20 Hz	
Ch02	Channel02	Voltage	Generic 0-5 V	mV	20 Hz	
Ch03	Channel03	Voltage	Generic 0-5 V	mV	20 Hz	
Ch04	Channel04	Voltage	Generic 0-5 V	mV	20 Hz	
Ch05	Channel05	Percent	Percentage Pot. Calib	% 0.01	20 Hz	
Ch06	Channel06	Position	Position Pot. AutoCal	mm	20 Hz	max travel: 50 ;
Ch07	Channel07	Voltage	Generic 0-5 V	mV	20 Hz	
Ch08	Channel08	Voltage	Generic 0-5 V	mV	20 Hz	
AccX	AccelerometerX	Inline Accel	AIM Internal Accelerometer	g 0.01	20 Hz	
AccY	AccelerometerY	Lateral Accel	AIM Internal Accelerometer	g 0.01	20 Hz	
AccZ	AccelerometerZ	Vertical Accel	AIM Internal Accelerometer	g 0.01	20 Hz	
GyrX	GyroX	Ang Velocity	AIM Internal Gyro	deg/s	20 Hz	
GyrY	GyroY	Ang Velocity	AIM Internal Gyro	deg/s	20 Hz	
GyrZ	GyroZ	Ang Velocity	AIM Internal Gyro	deg/s	20 Hz	
Spd	GPS Speed	Vehicle Spd	AIM GPS	km/h 0.1	10 Hz	
OdD	Odometer	Odometer Total	AIM ODO	km 0.1	1 Hz	

Transmit the configuration to the logger pressing "Transmit".

The screenshot shows the RaceStudio3 3.09.00 interface with the 'Channels' tab active. The 'Transmit' button is highlighted with a mouse cursor, indicating it is being pressed to transmit the configuration to the logger.