

Ferrari F430 Challenge

ECU connection



INTRODUCTION

AIM has developed special applications for many of the most common ECUs: by special applications we mean user-friendly systems which allow to easily connect the vehicle ECU to our hi-tech data loggers: user needs only to install harness between the **logger** and the ECU.

Once connected, the logger displays (and/or records, according to the model and to the ECU data stream) values like RPM, engine load, throttle position (TPS), air and water temperatures, battery voltage, speed, gear, lambda value (air/fuel ratio) analog channels...

All AIM loggers include – free of charge – **Race Studio 2** software, a powerful tool to configure the system and analyze recorded data on your PC.

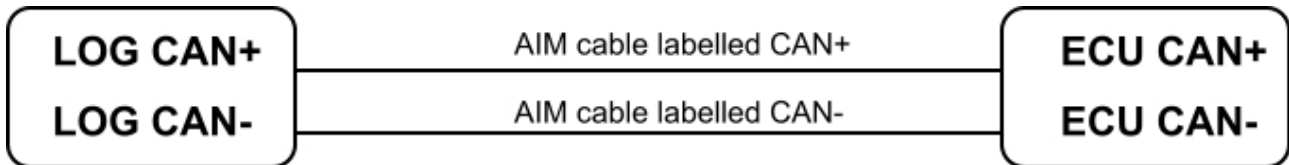
Warning: once the ECU is connected to the logger, it is necessary to set it in the logger configuration in Race Studio 2 software.

Select Manufacturer “Ferrari” and Model “430C” or “430 (ECU Bosch)”(see “Communication protocols” chapter to set properly ECU configuration).

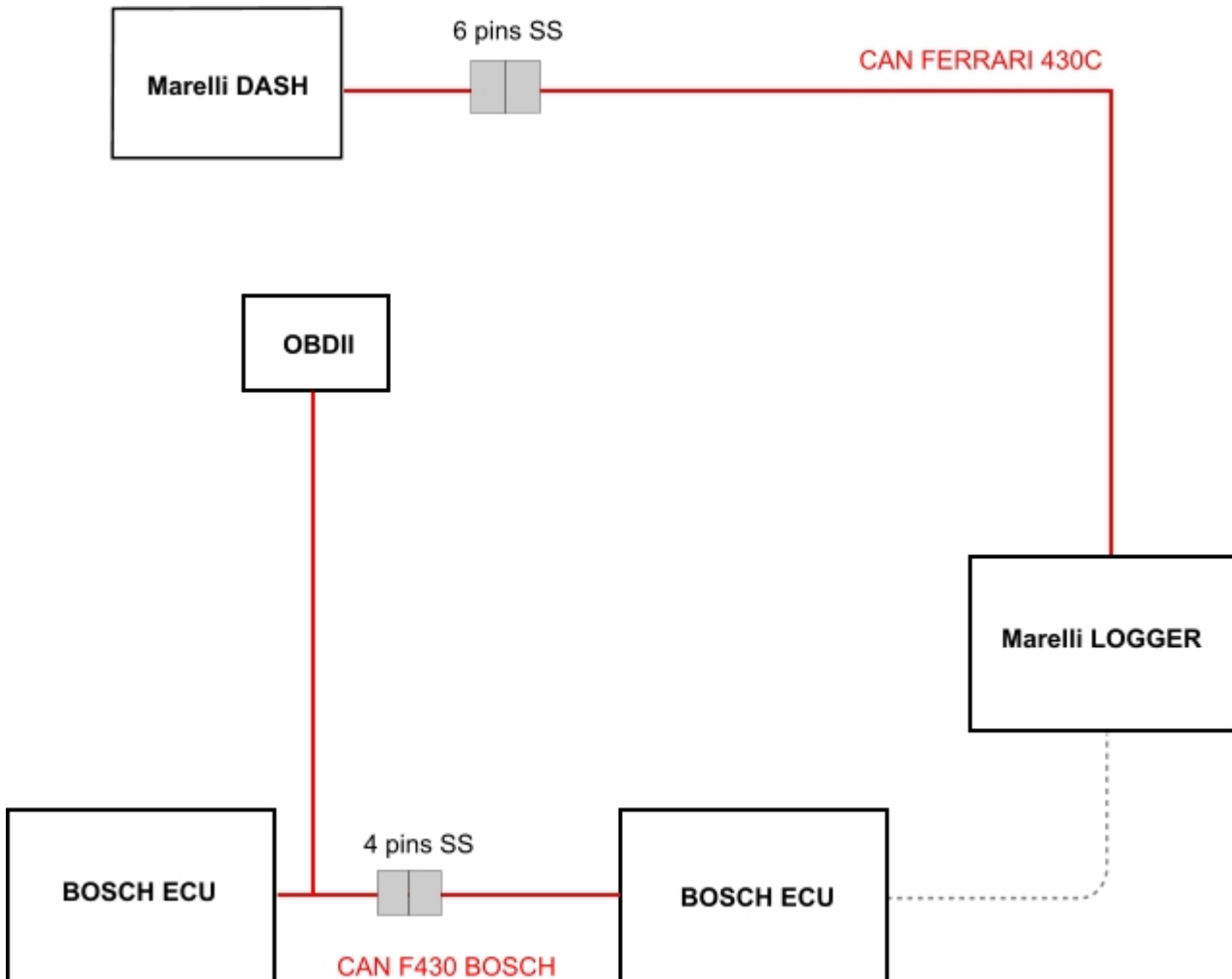
Refer to Race Studio Configuration on user manual for further information concerning the loggers configuration.

Chapter 1 – CAN communication setup

Ferrari F430 Challenge ECUs are equipped with a CAN communication protocol used to communicate parameters to external devices. The standard communication setup is shown here below.



The **AIM** loggers are compatible with two CAN Bus lines available on this vehicle. The first one - called "**CAN Ferrari 430C**" – connects **Marelli Dash** to **Marelli logger**, the second - called "**CAN F430 BOSCH**" - connects the vehicle control units, among which are the two **Bosch ECUs** and the **OBDI** module. CAN protocols work only if the configuration on **Race Studio 2** is properly set (see related chapters for more configuration details).

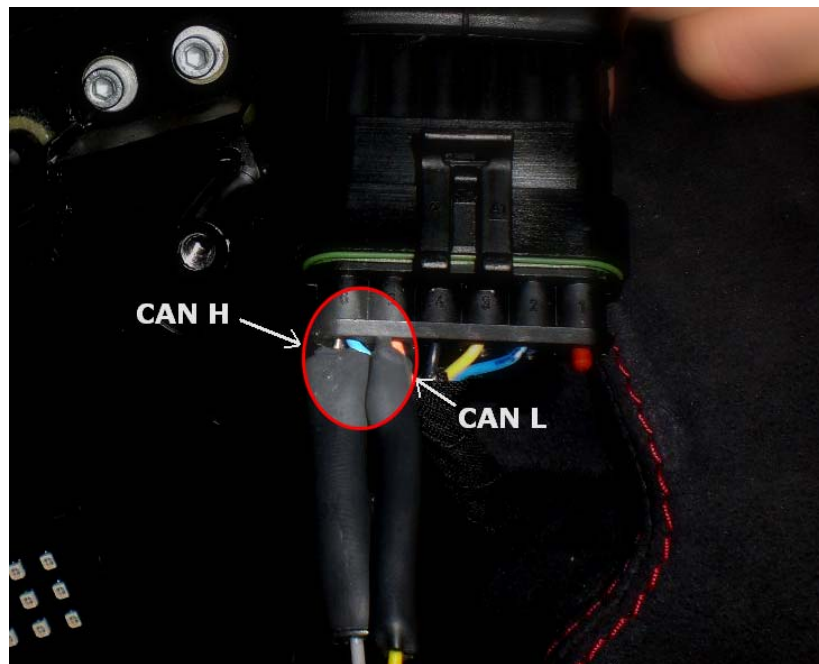


Chapter 2 – Connection to Marelli Data System

In order to ensure the communication to Marelli acquisition system it is necessary to connect the 6 pins Superseal connector placed under the dashboard to the AIM logger, which works only if Marelli dash is connected to the vehicle.



The image here below shows the connector. The pins numbers are printed on it.



With reference to the above image, connect Marelli data system to **AIM** logger as follows:

- connect AIM cable labelled CAN+ to pin 6 of 6 pins Superseal connector
- connect AIM cable labelled CAN- to pin 5 of 6 pins Superseal connector

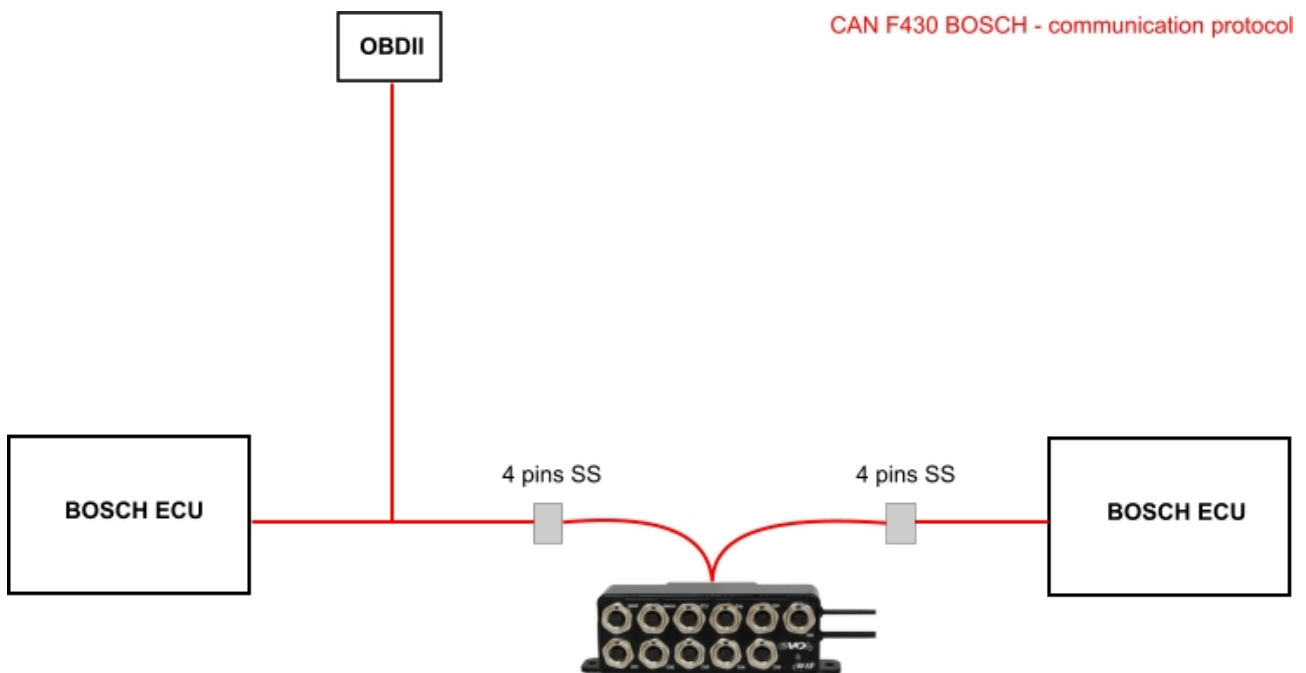
Chapter 3 – Connection to Bosch ECUs

Bosch ECUs communicate using 4 pins Superseal connectors. These ECUs are placed under the cover, behind the seats.

With reference to the image below, put the AIM logger between the Bosch ECUs as follows:

- connect AIM cable labelled CAN+ to pin 1 of 4 pins Superseal connectors.
- connect AIM cable labelled CAN- to pin 2 of 4 pins Superseal connectors.

The images here below show the connection scheme and a connection detail.



Pins numbers are printed on the connectors.



Chapter 4 – ECU communication protocol

Communication protocol for Ferrari F430 Challenge connected to Marelli acquisition system is “430C”. Here below the channels list is shown.

ID	CHANNEL NAME	FUNCTION
ECU_1	F430C_RPM	RPM
ECU_2	F430C_SPD_FL	Front Left wheel speed
ECU_3	F430C_SPD_FR	Front Right wheel speed
ECU_4	F430C_SPD_RL	Rear Left wheel speed
ECU_5	F430C_SPD_RR	Rear Right wheel speed
ECU_6	F430C_TPS	Throttle position sensor
ECU_7	F430C_ECT	Engine cooling Temperature
ECU_8	F430C_OILTEMP	Oil Temperature
ECU_9	F430C_FUELLEV	Fuel level
ECU_10	F430C_BRAKE	Brake pressure sensor
ECU_11	F430C_GEAR	Engaged gear
ECU_12	F430C_STR_WHEEL_ANG	Steering angle potentiometer

Communication protocol for Ferrari F430 Challenge connected to Bosch ECUs is “430 (ECU Bosch)”. Here below the channels list is shown.

ID	CHANNEL NAME	FUNCTION
ECU_1	F430_RPM	RPM
ECU_2	F430_WH_SPD_FL	Wheel Speed Front Left
ECU_3	F430_WH_SPD_FR	Wheel Speed Front Right
ECU_4	F430_WH_SPD_RL	Wheel Speed Rear Left
ECU_5	F430_WH_SPD_RR	Wheel Speed Rear Right
ECU_6	F430_VEH_SPEED	Vehicle Speed
ECU_7	F430_PPS	Pedal Position Sensor
ECU_8	F430_GEAR	Engaged gear
ECU_9	F430_STEER_ANG	Steering angle
ECU_10	F430_BRK_SW	Brake switch
ECU_11	F430_STEER_SPD	Steering speed
ECU_12	F430_ECT	Engine coolant temperature
ECU_13	F430_OILT	Oil temperature