

MINI 07-09

ECU connection



Racing Data Power

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 your ECU to our high tech data loggers: user needs only to install harness between the **logger** and the ECU.

Once connected, the logger displays (and/or records, depending on the logger and on 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 “BMW” Model “BMW_PT6”.
Refer to Race Studio Configuration user manual for further information concerning the loggers configuration.**

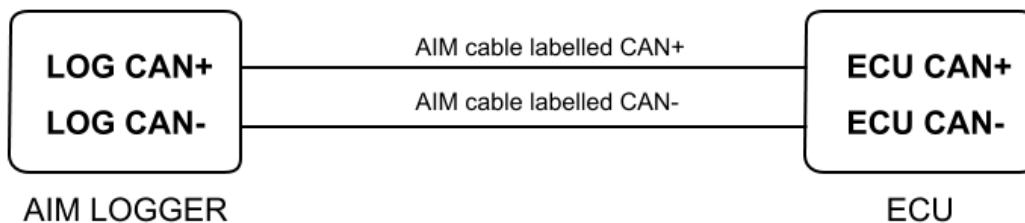
1 – Car models

BMW PT6 is the stock protocol for the following car models:

- Mini (R56) Cooper Coupè/Cabrio
- Mini(R56) One
- Mini (R56) One D
- Mini (R56) Cooper S Coupè/Cabrio
- Mini (R56) Cooper Works Coupè/Cabrio
- MINI (R56) Cooper D
- MINI (R56) Cooper Clubman
- MINI (R56) Cooper D Clubman
- MINI (R56) Cooper S Clubman

2 – CAN Communication setup

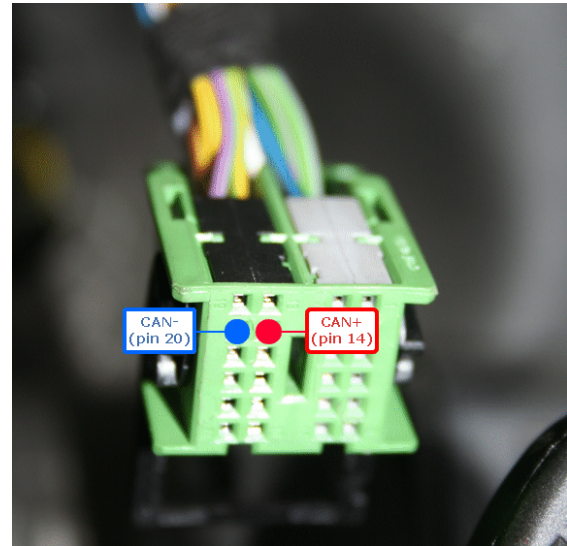
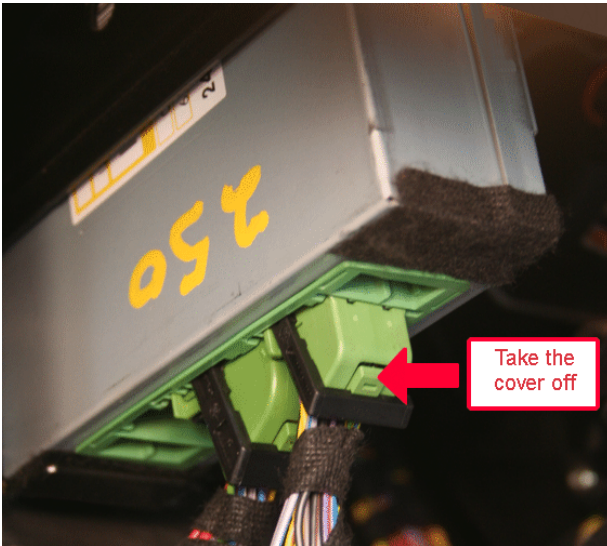
The vehicles are equipped with a CAN communication setup used to transmit data to an external logger. The image here below shows the standard communication ECU setup.



3 – Connection to AIM loggers

To sample data out coming from the ECU just connect AIM logger to the gateway – a service connector – placed over the gas pedal. To remove the gateway:

- press the button and lift the cover (image here below on the right): CAN+ and CAN- are on the light green plastic connector (image here below on the left).



To connect AIM logger to the ECU connect:

- AIM cable labelled CAN+ to yellow/black cable coming from the ECU (or to pin 14 of the gateway connector).
- AIM cable labelled CAN- to yellow/brown cable coming from the ECU (or to pin 20 of the gateway connector).



3 – Communication protocol

Channels received by AIM loggers connected to Mini 07-09 ECU are:

ID	Channel Name	Function
ECU_1	RPM	Engine speed sensor
ECU_2	PEDAL_POSITION	Pedal position
ECU_3	SPEED_BMW	Speed Value
ECU_4	SPEED2_BMW	Speed Value 2
ECU_5	WHEEL_SPD_FR_LF	Front left wheel speed
ECU_6	WHEEL_SPD_FR_RH	Front right wheel speed
ECU_7	WHEEL_SPD_RR_LF	Rear left wheel speed
ECU_8	WHEEL_SPD_RR_RH	Rear right wheel speed
ECU_9	STEER_ANGLE	Steering angle
ECU_10	CLUTCH_SWITCH	Clutch switch input
ECU_11	BRAKE_SWITCH	Brake switch input
ECU_12	BRAKE_PRESS	Brake pressure
ECU_13	BRAKE_PR_FR_LF	Front left brake pressure
ECU_14	BRAKE_PR_FR_RH	Front rear brake pressure
ECU_15	BRAKE_PR_RR_LF	Rear left brake pressure
ECU_16	BRAKE_PR_RR_RH	Rear Right brake pressure
ECU_17	WATER_TEMP	Water temperature
ECU_18	OIL_TEMP	Oil temperature
ECU_19	TEMP_OUTSIDE	Not available
ECU_20	MAP	Manifold air pressure
ECU_21	GEAR	Gear number
ECU_22	ACC_LONG	Not available
ECU_23	ACC_LAT	Not available
ECU_24	GYRO	Gyroscope
ECU_25	DISTANCE_KM	Distance (KM)
ECU_26	FUEL	Not available
ECU_27	BATTERY	Battery voltage