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AiM User Guide

EcuMaster EMU Classic/ EMU Black – RS232

Release 1.01

ECU

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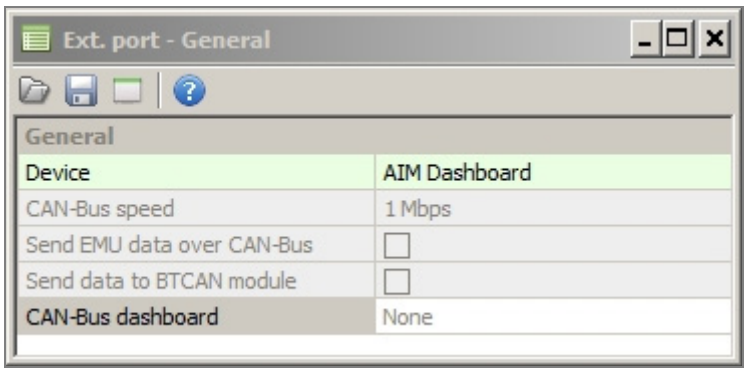
1 Supported models

This user guide explains how to connect EcuMaster ECU to AiM devices. Supported model is:

- EcuMaster EMU Classic
- EcuMaster EMU Black

2 Software setup

Both EMU Classic and EMU Black ECU need a software setup to correctly communicate with AiM devices via RS232. For both ECUs, you need to set "AiM Dashboard" device as shown here below.

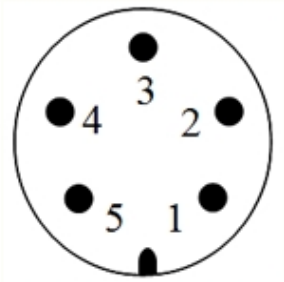


3
Wiring connection

Below, the connectors pinouts are represented for both EMU Classic and EMU Black

3.1
EMU Classic

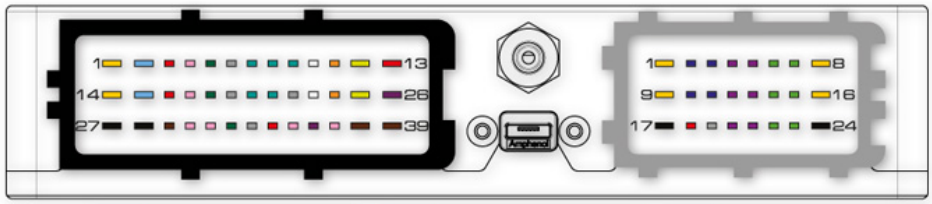
EMU Classic ECU features serial communication protocol on EMU extension port (ECU rear side) whose pinout is shown below with the connection table.

EXTENSION PORT PINOUT DESCRIPTION	
	1 - RXD
	2 - TXD
	3 - +3,3V
	4 - GROUND
	5 - +5V

Please note: with serial communication protocol it is mandatory to connect ECU GND with AiM device GND as well as ECU TXD is to be connected to AiM ECU RS232 TX (or AiM RS232RX for older products) and vice versa.

3.2
EMU Black

EMU Black ECU, as well, features serial communication protocol on EMU Black front connectors whose pinout is shown below:



Black 39pin conector

1	Ignition coil #5	14	Ignition coil #4	27	Power Ground
2	EGT in #1	15	EGT in #2	28	Ecu Ground
3	Knock Sensor in #1	16	Knock Sensor in #2	29	Sensor Ground
4	Analog In #2	17	Analog In #3	30	Analog In #4
5	CLT In	18	TPS In	31	Analog In #1
6	WBO Vs	19	WBO Ip	32	IAT In
7	Camsync In #2	20	VSS In	33	WBO VGND
8	Primary trigger	21	Camsync In #1	34	+5V supply
9	Flex Fuel In	22	WBO Rcal	35	Analog In #5
10	Switch #1 In	23	Switch #2 In	36	Switch #3 In
11	RS232 TXD	24	RS232 RXD	37	Analog In #6
12	CAN H	25	CAN L	38	Sensor Ground
13	Battery +12V	26	+5V supply	39	Sensor Ground

Grey 24pin conector

1	Ignition coil #6	9	Ignition coil #3	17	Power Ground
2	H-Bridge #1 Winding A	10	H-Bridge #1 winding B	18	Ignition +12V
3	H-Bridge #2 Winding A	11	H-Bridge #2 winding B	19	WBO Heater
4	AUX 6	12	AUX 5	20	AUX 4 / Tacho
5	AUX 3	13	AUX 2 / Injector #8	21	AUX 1 / Injector #7
6	Injector #4	14	Injector #5	22	Injector #6
7	Injector #1	15	Injector #2	23	Injector #3
8	Ignition coil #1	16	Ignition coil #2	24	Power Ground

RS232TX: pin 11; 39 pins connector (Black)
RS232RX: pin 24; 39 pins connector (Black)

Please note: with serial communication protocol it is mandatory to connect ECU GND with AiM device GND as well as ECU TXD is to be connected to AiM ECU RS232 TX (or AiM RS232RX for older products) and vice versa.

4 AiM device configuration

Before connecting the ECU to AiM device set it up using AiM Race Studio software. The parameters to select in the device configuration are:

- ECU manufacturer “AIM”
- ECU Model “PROT_UART”

5 Available channels

Channels received by AiM devices connected to “AIM” "PROT_UART" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	AIM_RPM	RPM
ECU_2	AIM_WHEELSPD	Wheel Speed
ECU_3	AIM_OILPRESS	Oil pressure
ECU_4	AIM_OILTEMP	Oil temperature
ECU_5	AIM_WATERTEMP	Engine coolant temperature
ECU_6	AIM_FUELPRESS	Fuel pressure
ECU_7	AIM_BATTVOLT	Battery supply
ECU_8	AIM_THROTANG	Throttle angle
ECU_9	AIM_MANIFPRESS	Manifold air pressure
ECU_10	AIM_AIRCHARGETEMP	Intake air temperature
ECU_11	AIM_EXHTEMP	Exhaust gas temperature
ECU_12	AIM_LAMBDA	Lambda value
ECU_13	AIM_FUELTEMP	Fuel temperature
ECU_14	AIM_GEAR	Engaged gear
ECU_15	AIM_ERRORFLAG	Error flag