AIM Infotech

Megasquirt MS1 ECU

Release 1.04

1
Supported models

This document explains how to connect AiM devices to the Engine Control Unit (ECU) datastream. Supported models are:
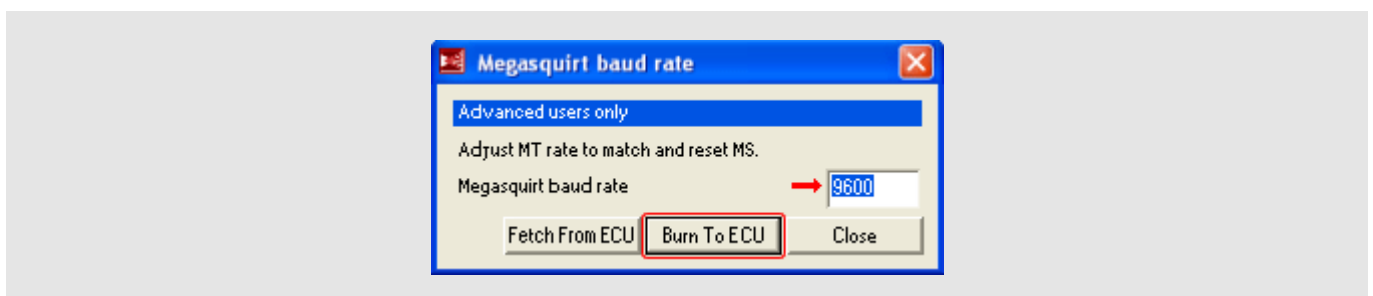
- MS1

2
Software configuration

Megasquirt MS1 ECU comes with MegaTune software CD. After software installation, please run it and perform an ECU setting via software following this path: "Communication –> Megasquirt Baud Rate" as shown here below.
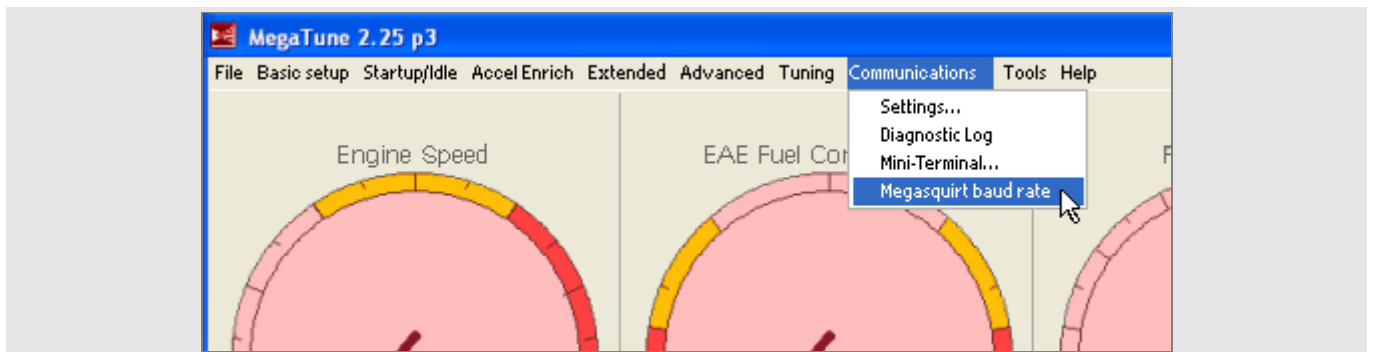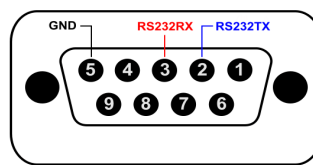

"Megasquirt baud rate" panel appears: set "baud rate –> 9600" and press "Burn to ECU" as shown here below.

3
Wiring connection

Megasquirt MS1 features a serial communication protocol on the DB9 front female connector. Here below DB9 female connector pinout – front view –and connection table are shown.

DB9 Connector pin	Pin function	AiM cable label
2	RS232RX	RS232TX/ECU RS232RX
3	RS232TX	RS232RX/ECU RS232TX
5	GND	GND

Please note:
AiM wiring harnesses supplied after September 2018 have the following labels:
ECU RS232TX (white) to be connected to **ECU TX** pin
ECU RS232RX (blue) to be connected to **ECU RX** pin (if indicated in the connection table above)

AiM wiring harnesses supplied before September 2018 have the following labels:
RS232RX (white) to be connected to **ECU TX** pin
RS232TX (blue) to be connected to **ECU RX** pin (if indicated in the connection table above)

4
Race Studio configuration

Before connecting AiM devices to the ECU, set all functions using AiM software Race Studio. The parameters to set in the device configuration are:

- ECU manufacturer: **Megasquirt**
- ECU Model: **MS1**

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"Megasquirt – MS1" protocol

Channels received by AiM devices configured with "Megasquirt – MS1" are:

CHANNEL NAME	FUNCTION
MS1_RPM	RPM
MS1_SQUIRT	Control channel
MS1_ENGINE	Control channel
MS1_BARO_ADC	Barometric analogue digital converter
MS1_MAP_ADC	Manifold air pressure
MS1_MAT	Manifold air temperature
MS1_ECT	Engine coolant temperature
MS1_TPS	Throttle position sensor
MS1_BATT_VOLT	Battery voltage
MS1_EGO_VOLT	Exhaust gas oxygen voltage
MS1_EGO_CORR1	Exhaust gas oxygen correction 1
MS1_AIR_CORR	Air correction
MS1_WARMUP_ENR	Warm up enrichment
MS1_PULSEWIDTH1	Pulse width modulation 1
MS1_ACC_ENRICH	Acceleration enrichment
MS1_BARO_CORR	Barometric correction
MS1_GAMMA_ENRICH	Total gamma enrichment
MS1_CURR_VE1	Current Volumetric Efficiency 1
MS1_PULSEWIDTH2	Pulse width modulation 2
MS1_CURR_VE2	Current Volumetric Efficiency 2
MS1_IDLE_DC	Idle Duty Cycle
MS1_ADVANCE	Advance
MS1_AFR_TARGET	Air fuel ratio
MS1_FUEL_PRESS	Fuel pressure
MS1_EGT	Exhaust gas temperature

MS1_IAT_CLT_ANG	Intake air temperature sensor
MS1_KNOCK	Knock angle sensor
MS1_EGO_CORR2	Exhausted gas oxygen second O2 sensor
MS1_PORT_A	Port A
MS1_PORT_B	Port B
MS1_PORT_C	Port C
MS1_PORT_D	Port D
MS1_ECU_STACK	CPU Stack
MS1_TPS_LAST	Throttle position sensor Last
MS1_BCDC	Boost control duty cycle