AiM Infotech

MBE 9A4 ECU

Release 1.01

ECU

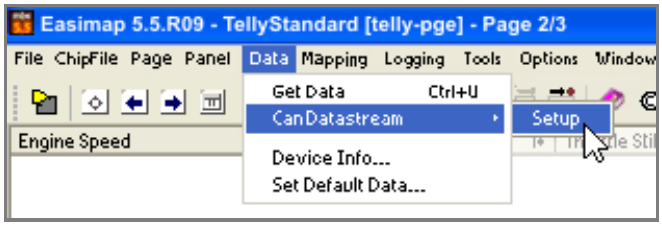
This tutorial explains how to connect MBE 9A4 ECU to AiM devices.

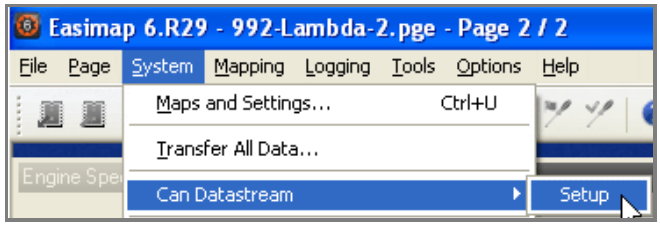
1 Software setup

MBE 9A4 ECU comes with EasyMap software. For a correct communication with AiM devices set it up as follows:

- Connect the ECU to your PC and power it.
- Run Easy Map and follow this path:
    - Data –>CAN Datastream –> Setup if you have EasyMap 5.5 release
    - System –> Can Datastream –> Setup if you have EasyMap 6 release

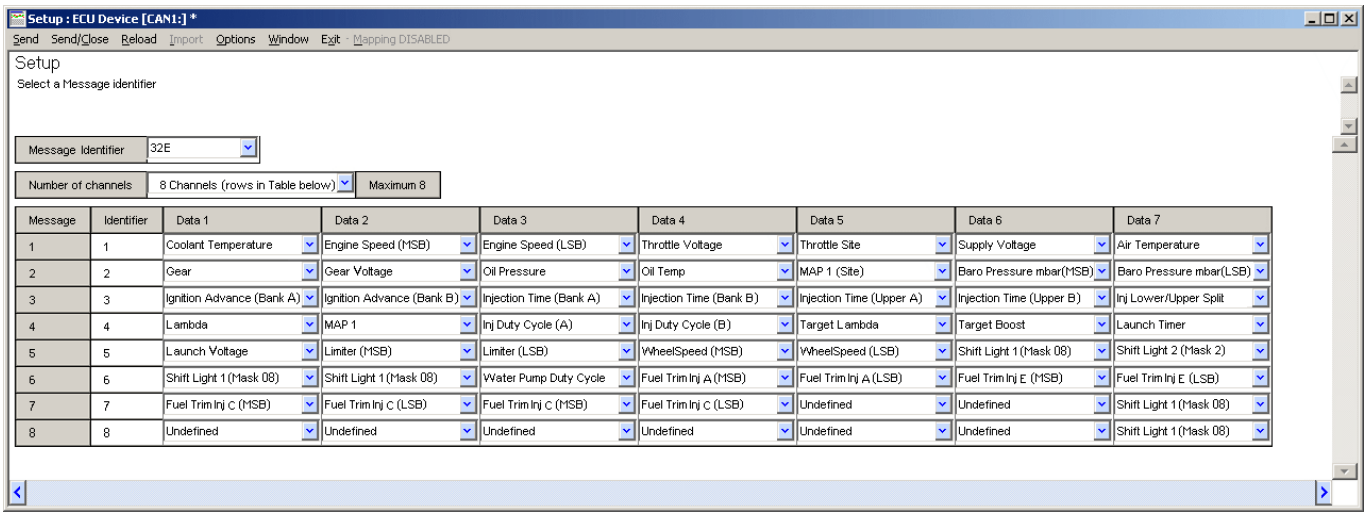
Here below you see images of EasyMap 5.5 – on the left – and EasyMap 6 – on the right.





- This way the software reads information coming from the ECU and opens a new window to configure the CAN communication;

- Parameters must be configured in the right sequence and with the right scaling; complete the table with the information suggested here below:



Message	Identifier	Data 1	Data 2	Data 3	Data 4	Data 5	Data 6	Data 7
1	1	Coolant Temperature	Engine Speed (MSB)	Engine Speed (LSB)	Throttle Voltage	Throttle Site	Supply Voltage	Air Temperature
2	2	Gear	Gear Voltage	Oil Pressure	Oil Temp	MAP 1 (Site)	Baro Pressure mbar(MSB)	Baro Pressure mbar(LSB)
3	3	Ignition Advance (Bank A)	Ignition Advance (Bank B)	Injection Time (Bank A)	Injection Time (Bank B)	Injection Time (Upper A)	Injection Time (Upper B)	Inj Lower/Upper Split
4	4	Lambda	MAP 1	Inj Duty Cycle (A)	Inj Duty Cycle (B)	Target Lambda	Target Boost	Launch Timer
5	5	Launch Voltage	Limiter (MSB)	Limiter (LSB)	WheelSpeed (MSB)	WheelSpeed (LSB)	Shift Light 1 (Mask 08)	Shift Light 2 (Mask 2)
6	6	Shift Light 1 (Mask 08)	Shift Light 1 (Mask 08)	Water Pump Duty Cycle	Fuel Trim Inj A (MSB)	Fuel Trim Inj A (LSB)	Fuel Trim Inj E (MSB)	Fuel Trim Inj E (LSB)
7	7	Fuel Trim Inj C (MSB)	Fuel Trim Inj C (LSB)	Fuel Trim Inj C (MSB)	Fuel Trim Inj C (LSB)	Undefined	Undefined	Shift Light 1 (Mask 08)
8	8	Undefined	Undefined	Undefined	Undefined	Undefined	Undefined	Shift Light 1 (Mask 08)

Please note: data logging configuration with EasiMap software is intended for expert users only. The software can of course be changed by MBE. Refer to www.mbesystems.com for further information.

- once all parameters configured press "Send" and choose "ECU Device" when requested; the configuration is stored in ECU memory
- close configuration window and quit the program
- before connecting MBE ECU to AiM device enable "Broadcast Mode" ensuring a nominally zero voltage (or open circuit) on fuel trim and ignition trim inputs.

2
Wiring connection

MBE 9A4 ECU features a bus communication protocol based on CAN on J2 36 pins front connector. Here below is connection table.

J2 36 Pins connector pin	Pin function	AiM cable
9	CAN High	CAN+
8	CAN Low	CAN-

3 AiM device configuration

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

- ECU manufacturer “MBE”
- ECU Model "9A4CAN"

4 Available channels

Channels received by AiM devices connected to "MBE" "9A4CAN" protocol are:

ID	CHANNEL NAME	FUNCTION
ECU_1	MBE_WATER_TEMP	Engine coolant temperature
ECU_2	MBE_RPM	RPM
ECU_3	MBE_THROT_VOLT	Throttle voltage
ECU_4	MBE_THROT_SIDE	Throttle position (raw value)
ECU_5	MBE_BATTERY	Battery supply
ECU_6	MBE_AIR_TEMP	Intake air temperature
ECU_7	MBE_TPP	Throttle position percentage
ECU_8	MBE_GEAR	Engaged gear
ECU_9	MBE_GEAR_VOLT	Gearbox voltage
ECU_10	MBE_OIL_PRESS	Oil pressure
ECU_11	MBE_OIL_TEMP	Oil temperature
ECU_12	MBE_MAP_SIDE	Map position
ECU_13	MBE_BARO_PRESS	Barometric pressure
ECU_14	MBE_IGN_ADV_A	Ignition advance bank A
ECU_15	MBE_IGN_ADV_B	Ignition advance bank B
ECU_16	MBE_INJ_A	Injection advance bank A

ECU_17	MBE_INJ_B	Injection advance bank B
ECU_18	MBE_INJ_UP_A	Injection time upper bank A
ECU_19	MBE_INJ_UP_B	Injection time upper bank B
ECU_20	MBE_INJ_SPLIT	Injection time lower/upper split
ECU_21	MBE_LAMBDA	Lambda Air Fuel Ration
ECU_22	MBE_MAP	Manifold air pressure
ECU_23	MBE_DUTY_CY_A	Injection Duty Cycle Bank A
ECU_24	MBE_DUTY_CY_B	Injection Duty Cycle Bank B
ECU_25	MBE_TAR_LAMBDA	Target Lambda Air/Fuel ratio
ECU_26	MBE_TAR_BOOST	Target boost
ECU_27	MBE_LAUNCH_TIM	Launch timer
ECU_28	MBE_LAUNCH_VOLT	Launch voltage
ECU_29	MBE_LIMITER	Limiter
ECU_30	MBE_WHEELSPEED	Wheel speed
ECU_31	MBE_SHIFT_L1	Shift light 1
ECU_32	MBE_SHIFT_L2	Shift light 2
ECU_33	MBE_RAD_FAN1	Rad fan 1
ECU_34	MBE_RAD_FAN2	Rad fan 2
ECU_35	MBE_WAT_PUMP_DC	Water pump duty cycle
ECU_36	MBE_TRIM_INJA	Fuel trim injection A
ECU_37	MBE_TRIM_INJB	Fuel trim injection B
ECU_38	MBE_TRIM_INJC	Fuel trim injection C
ECU_39	MBE_TRIM_INJD	Fuel trim injection D