AiM Infotech

### MBE 9A4 ECU

#### Release 1.01



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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.

🗱 Easimap 5.5.R09 - Te	ellyStandard [telly-pge] - Page 2/3	Easimap 6.R29 - 992-Lambda-2.pge - Page 2 / 2						
File ChipFile Page Panel	Data Mapping Logging Tools Options Window	Eile Page System Mapping Logging Tools Options Help						
2 🗨 🔁 🖻	Get Data Ctrl+U 📃 💻 🥐 🕼 Can Datastream 🔹 Setup	Maps and Settings Ctrl+U						
Engine Speed	Device Info	Iransfer All Data						
	Set Default Data	Can Datastream						

• 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:

🖻 Setup : ECU Device [CAN1:] *							_ 🗆 🗵								
-	<u>S</u> end Send/ <u>⊂</u> l	ose <u>R</u> eload	Import Options Window	Exit - Mapping DISABLED											
Γ	Setup														
L	Select a Mess	age identifier													
L															
Message Identifier 32E									*						
L			, I			_		_				_			
L	Message	Identifier	Data 1	Data 2	Data 3	_	Data 4		Data 5		Data 6		Data 7		
L	1	1	Coolant Temperature	Engine Speed (MSB)	Engine Speed (LSB)	<b>~</b>	Throttle Voltage	•	Throttle Site	~	Supply Voltage	<u>·</u>	Air Temperature	<u>·</u>	
l	2	2	Gear 🔽	Gear Voltage 🗾	Oil Pressure	~	Oil Temp 👱	-	MAP 1 (Site)	~	Baro Pressure mbar(MSB) 🔽	-	Baro Pressure mbar(LSB) <mark>&gt;</mark>	•	
l	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 📃 💽	•	
L	4	4	Lambda 🔽	MAP 1	Inj Duty Cycle (A)	~	Inj Duty Cycle (B)	-	Target Lambda	~	Target Boost 📃 💽	-	Launch Timer 📃 💽	•	
L	5	5	Launch Voltage 🗾 🖌	Limiter (MSB)	Limiter (LSB)	~	WheelSpeed (MSB)	-	WheelSpeed (LSB)	<b>~</b>	Shift Light 1 (Mask 08) 🛛 🔉	•	Shift Light 2 (Mask 2) 📃 💊	-	
L	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) 📃 📐	•	
L	7	7	Fuel Trim Inj C (MSB) 🛛 🔽	Fuel Trim Inj C (LSB)	Fuel Trim Inj C (MSB)	~	Fuel Trim Inj C (LSB)	-	Undefined	~	Undefined N	•	Shift Light 1 (Mask 08) 🛛 📐	-	
l	8	8	Undefined 🔽	Undefined 🔽	Undefined	*	Undefined <u>·</u>	•	Undefined	~	Undefined 🔉	•	Shift Light 1 (Mask 08) 📃 📐	-	
l					•									_	× 1
	<														>

**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-

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## 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



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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