MBE ECU

COMMUNICATION PROTOCOLS AND

AIM LOGGERS CONNECTION

User Manual

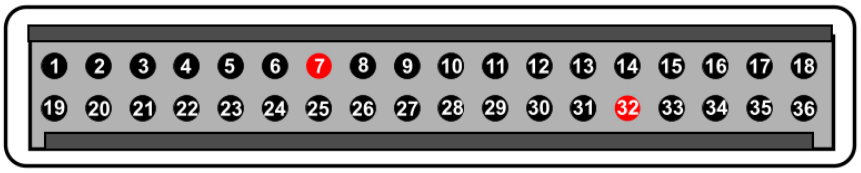
Racing Data Power

INDICE

Chapter 1 – MBE 967/970

1.1 – Serial Communication Set-Up

The ECU has a serial communication protocol and a 36 pins connector, whose pinout is shown below, used to communicate with an external logger or to configure the ECU.



Pin	Function	Comments
1	Fuel trim	Mapping plug 06
2	Water temp. signal	
3	Air temp. signal	
4	5v analogue	Mapping plug 04
5	Analogue GND	Mapping plug 05
6	Power GND	Mapping plug 01
7	POWER GND	
8	Power GND	
9	Power GND	
10	Gear input	
11	Crank return	
12	Crank signal	
13	ECU supply	
14	Serial receive	Mapping plug 03: RS232 com. – ECU RX
15	Faul light / switch	
16	Shift light	Switched Ground
17	Fuel pump relay drive	Switched Ground
18	Ignition drive 2	Cylinders 2 + 3
19	Power shift input	Ground active
20	Throttle signal	
21	Map signal	
22	5v analogue	
23	Analogue GND	
24	Analogue GND	
25	Oil temperature	
26	Ignition trim	Mapping plug 07
27	Oil pressure	
28	Barom. press./launch input	
29	Lambda signal	
30	Not used	Not used
31	Not used	Not used
32	Serial Transmit	Mp 02: RS232 com. – ECU TX
33	Radiator fan relay drive	Switched Ground
34	Tachometer signal	
35	Injection output	All Cylinders
36	Ignition drive 1	Cylinders 1 + 4 (coil if distributor fitted)

To connect the ECU to a PC, using a standard DB9 female connector, connect **pin 32** (**ECU TX**) of the **ECU** to **pin 2** of the **DB9** and **pin 7** (or another **Power GND** pin) of the **ECU** to **pin 5** of the **DB9**.

To communicate with the PC, ECU Fuel Trim (pin 1) and Ignition Trim (pin 26) inputs must be hold at a voltage other than zero; this procedure enables “Byte Mode” and allows the ECU to communicate with EasiMap Windows tool (the MBE configuration program – see ECU manual for further information).

1.2 – ECU Configuration

In order to communicate with the data logger, the ECU must be properly configured using “EasiMap” software supplied with the ECU. The procedure is below explained.

- Connect the ECU to a PC with EasiMap 5.0 installed, and turn the ECU on [ECU pin 13 at 12V and ECU pin 6 (or other Power GND) at GND].
- Launch EasiMap 5.0 software and choose [Get Data…] option from [Data] menu.
- In the window [Select Parameter] open [Data Logging] directory and select [Data Logger Link]; choose [ECU Device] in [Data Source] options and then press [OK].
- Now the program reads information from the ECU and opens a new window to configure the communication.
- The parameters must be configured in the right sequence and with the right scaling in order to communicate with the AIM data logger:

Data Logger Link:	choose [Transmitting at 19200]
RPM:	choose [4,00]
Parameter	**Scaling**
1: choose [Engine Speed]	Choose 16 bit
2: choose [Ignition]	Choose 8 bit
3: choose [Injection Time]	Choose 16 bit
4: choose [Throttle Angle]	Choose 8 bit
5: choose [Coolant Temp]	Choose 8 bit
6: choose [Air Temp]	Choose 8 bit
7: choose [Baro Pressure]	Choose 8 bit
8: choose [Lambda]	Choose 8 bit
9: choose [Ri]	Choose 16 bit
10: choose [Engine Oil Pressure]	Choose 8 bit
11: choose [Fuel Pressure]	Choose 8 bit
12: choose [Water Pressure]	Choose 8 bit
13: choose [Engine Oil Temp]	Choose 8 bit
14: choose [Gearbox Oil Temp]	Choose 8 bit
15: choose [Boost Pressure]	Choose 8 bit
16: choose [Gear Position]	Choose 8 bit

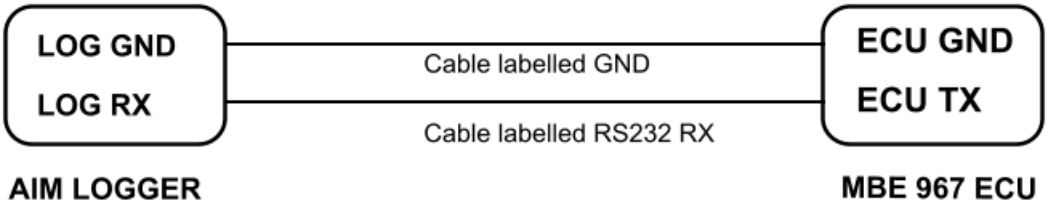
Please note: data logging configuration with EasiMap v5.0 software is intended for expert users only. Refer to www.mbesystems.com for further information.

When all parameter are configured, press [Send] button and choose [ECU Device] when requested; configuration is saved in the ECU memory.

Close configuration window and quit the program. Before connecting ECU to the Data logger, enable “Broadcast Mode” ensuring a nominally zero voltage (or open circuit) on Fuel Trim and Ignition Trim inputs.

1.3 – Connection with AIM Data logger

Connect AIM cable labelled **RS 232 RX** with **pin 32** of the **ECU** (**ECU TX**) and AIM cable labelled **GND** with **pin 7** of the **ECU** (or other **Power GND** pins) as shown in here below:



Pin	Function	Comments
7	GND	
32	RS232TX	

1.4 – MBE 967/970 communication table

Channels received by AIM loggers connected to MBE967/970 ECU are:

ID	CHANNEL NAME	FUNCTION
ECU_1	MBE_ENGINESPD	RPM
ECU_2	MBE_IGNITION	Spark advance
ECU_3	MBE_INJECTIME	Injection time
ECU_4	MBE_THROTANG	Throttle position
ECU_5	MBE_COOLANTTEMP	Water temperature
ECU_6	MBE_AIRTEMP	Intake air temperature
ECU_7	MBE_BAROPRESS	Barometric pressure
ECU_8	MBE_LAMBDA	Lambda value
ECU_9	MBE_VOLT_LAMBDA	Lambda probe voltage
ECU_10	MBE_ENGOILPRESS	Oil pressure
ECU_11	MBE_FUELPRESS	Fuel pressure
ECU_12	MBE_GEAR	Engaged gear
ECU_13	MBE_GEAROILTEMP	Gearbox oil temperature
ECU_14	MBE_VOLT_GEAR	Gear sensor voltage
ECU_15	MBE_BOOSTPRESS	Boost pressure
ECU_16	MBE_ROW_VAL	Throttle break point

Chapter 2 – MBE 992 (suppressed)

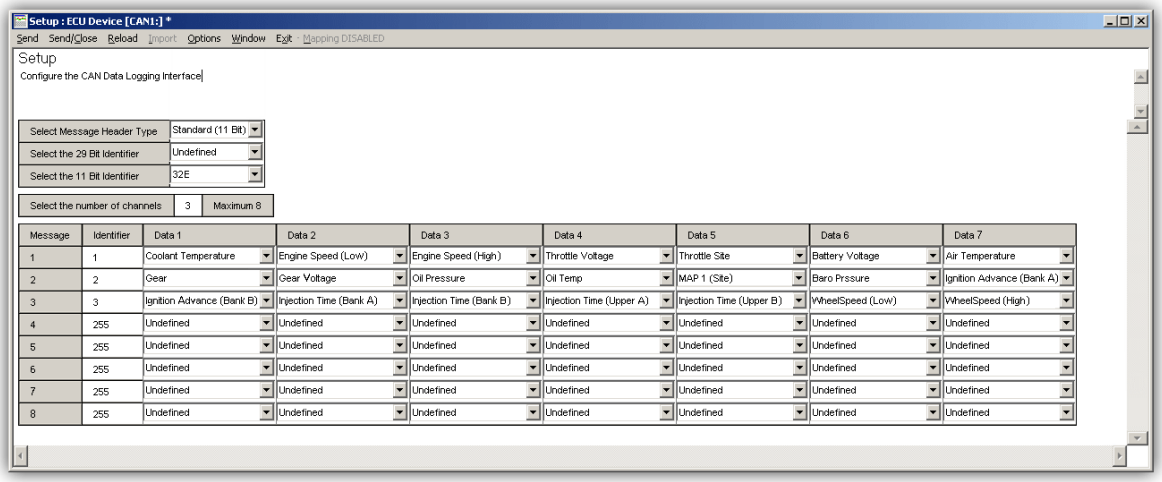
2.1 – CAN Communication Set–up

The ECU is equipped with a CAN communication interface used to communicate parameters to an external data logger or to configure the ECU itself.

2.2 – ECU Configuration

In order to communicate with the data logger, the ECU must be properly configured using “EasiMap” software supplied with the ECU. The procedure is below explained.

- Connect the ECU to a PC with EasiMap 5.0 installed and turn the ECU on.
- Launch EasiMap 5.0 software; choose [CAN Datastream] option from [Data] menu; then choose [setup].
- Now the program reads the information coming from the ECU and opens a new window to configure the communication. Complete the table with the information suggested in the screen below.
- Parameters must be configured in the right sequence and with the right scaling in order to communicate with the AIM data logger:



Please note: data logging configuration with EasiMap v5.0 software is intended for expert users only. Refer to www.mbesystems.com for further information.

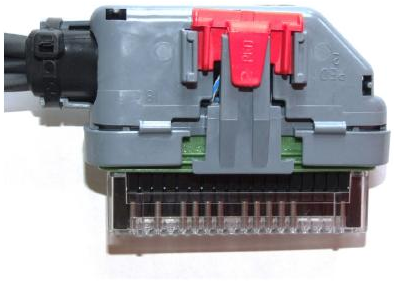
When all parameters are configured, press [Send] button and choose [ECU Device] when requested; configuration is saved in the ECU memory.

Close configuration window and quit the program. Before connecting ECU to the data logger, enable “Broadcast Mode” ensuring a nominally zero voltage (or open circuit) on Fuel Trim and Ignition Trim inputs.

2.3 – Pinout

- - Pin 8 CAN low has to be connected to logger blu wire labelled CAN -
- - Pin 9 CAN high has to be connected to logger white wire labelled CAN +

This ECU is equipped with a 36 pins J2 Delphi connector:



2.4 – CAN Communication protocol

Channels received by AIM logger connected to MBE 992 (suppressed) ECU are

ID	CHANNEL NAME	FUNCTION
ECU_1	MBE_ENGINESPD	RPM
ECU_2	MBE_COOLTEMP	Water temperature
ECU_3	MBE_THROTTLEVOLT	Throttle voltage
ECU_4	MBE_THROTANG	Throttle position
ECU_5	MBE_BATTVOLT	Battery voltage
ECU_6	MBE_AIRTEMP	Intake air temperature
ECU_7	MBE_GEAR	Engaged gear
ECU_8	MBE_GEARVOLT	Gear voltage
ECU_9	MBE_OIL_P	Oil pressure
ECU_10	MBE_OIL_T	Oil temperature
ECU_11	MBE_MAP	Manifold pressure
ECU_12	MBE_BAROPRES	Barometric pressure
ECU_13	MBE_IGN_A	Ignition
ECU_14	MBE_IGN_B	Ignition
ECU_15	MBE_INJT_BANK_A	Injection bank a
ECU_16	MBE_INJT_BANK_B	Injection bank b
ECU_17	MBE_INJT_UPPER_A	Injection Time Upper A
ECU_18	MBE_INJT_UPPER_B	Injection Time Upper B
ECU_19	MBE_WHEEL_SPEED	Vehicle speed
ECU_20	MBE_THROTTLE_SITE	Throttle Position (Raw)

Chapter 3 – MBE 992_V2

3.1 – CAN Communication Set–up

The ECU is equipped with a CAN communication interface used to communicate parameters to an external data logger or to configure the ECU itself.

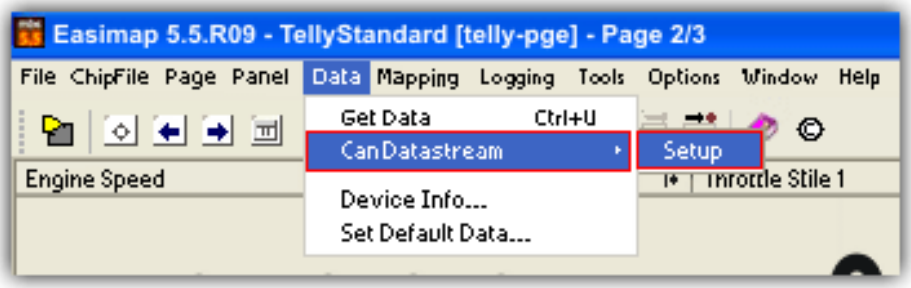
3.2 – ECU Configuration

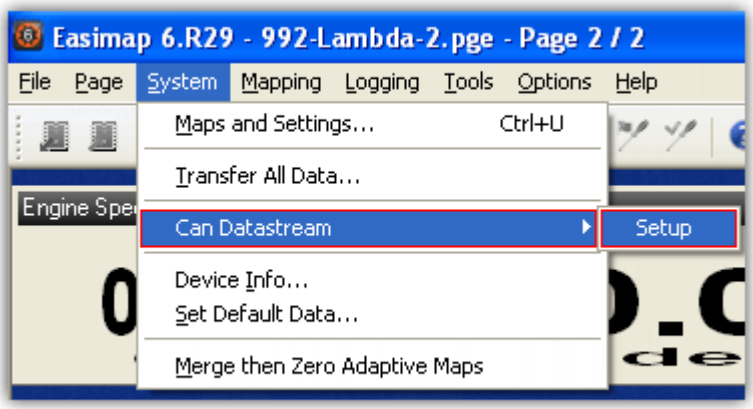
The ECU must be properly configured using “EasiMap” software – supplied with the ECU – to communicate with the data logger.

WARNING: data logging configuration with EasiMap 5.5 and EasiMap 6.0 software is intended for expert users only. The software can be downloaded from www.mbesystems.com

Connect the ECU to a PC with EasiMap 5.5/6.0 installed, and turn the ECU on.
Launch EasiMap 5.5/6.0 software and follow these paths:

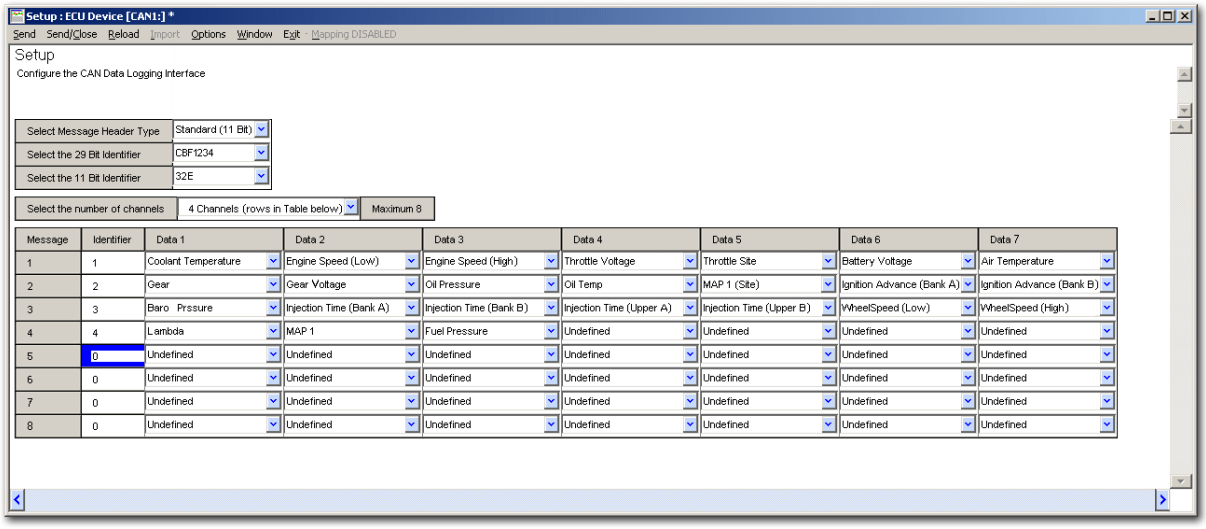
- EasiMap 5.5: Data>>CAN Datastream>>Setup;
- EasiMap 6: System>>Can Datastream>>Setup





The software reads now information sent by the ECU and opens a new window to configure the communication.Complete the table with the information suggested in the screen below.

Please note: parameters must be configured in the right sequence and with the right scaling in order to communicate with the AIM logger:



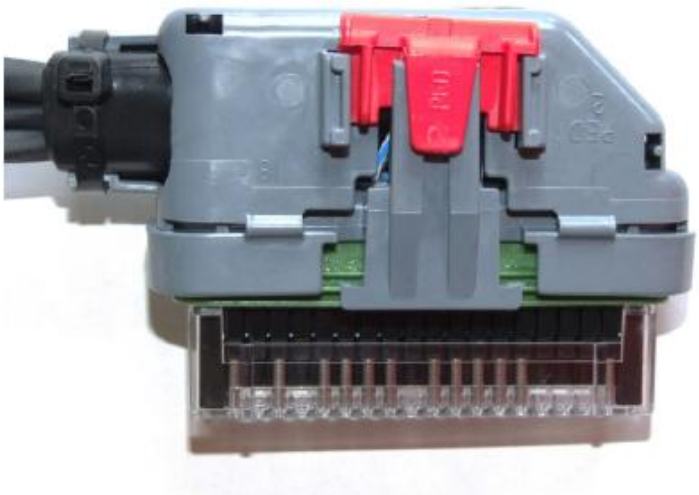
When all parameters are configured, press [Send] and choose [ECU Device] when requested; configuration is saved in the ECU memory.

Close configuration window and quit the program. Before connecting ECU to the data logger, enable “Broadcast Mode” ensuring a nominally zero voltage (or open circuit) on Fuel Trim and Ignition Trim inputs.

3.3 – Pinout

- Pin 8 CAN low has to be connected to logger blu wire labelled CAN -
- Pin 9 CAN high has to be connected to logger white wire labelled CAN +

This ECU is equipped with a 36 pins J2 Delphi connector:



3.4 – CAN Communication protocol

Channels received by AIM loggers connected to MBE 992_V2 ECU are

ID	CHANNEL NAME	FUNCTION
ECU_1	MBE_RPM	Engine Speed
ECU_2	MBE_ECT	Engine Coolant Temperature
ECU_3	MBE_THROTTLEVOLT	Throttle Voltage
ECU_4	MBE_TPS	Throttle Position Sensor
ECU_5	MBE_BATTVOLT	Battery Voltage
ECU_6	MBE_AIRTEMP	Air Temperature
ECU_7	MBE_GEAR	Engaged Gear
ECU_8	MBE_GEARVOLT	Gear Voltage
ECU_9	MBE_OIL_P	Oil Pressure
ECU_10	MBE_OIL_T	Oil Temperature
ECU_11	MBE_MAP1_SITE	Map1 Position
ECU_12	MBE_IGN_ADVANCE	Ignition Advance
ECU_13	MBE_BARO_PRESS	Barometric Pressure
ECU_14	MBE_INJ_BANK	Injection Time Bank
ECU_15	MBE_INJ_UPPER	Injection Time Upper
ECU_16	MBE_SPEED	Vehicle Speed
ECU_17	MBE_THROTTLE_SITE	Throttle Position (raw)
ECU_18	MBE_LAMBDA	Lambda AFR
ECU_19	MBE_MAP1	Manifold Absolute Pressure
ECU_20	MBE_FUEL_P	Fuel Pressure

Chapter 4 – MBE 992 CAN

4.1 – CAN Communication Set–up

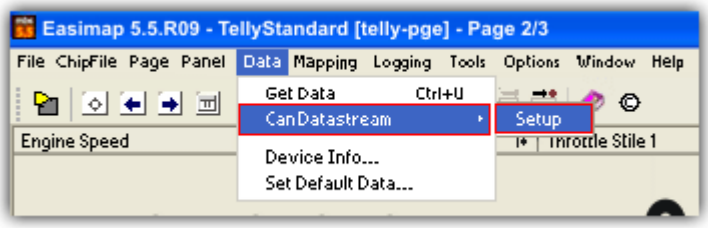
The ECU is equipped with a CAN communication interface used to communicate parameters to an external data logger or to configure the ECU itself.

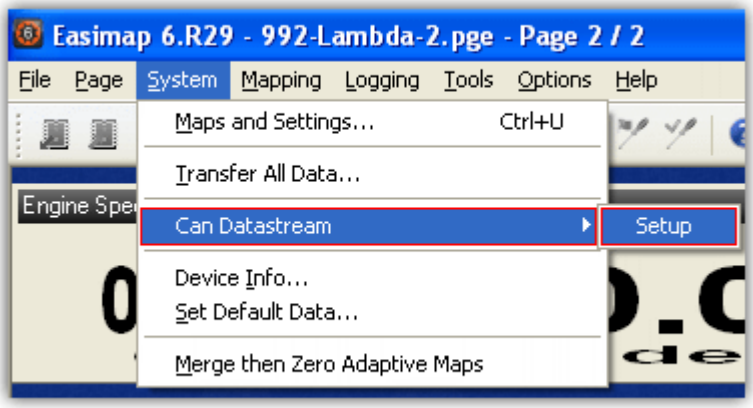
4.2 – ECU Configuration

In order to communicate with the data logger, the ECU must be properly configured using “EasiMap” software supplied with the ECU.

Connect the ECU to a PC with EasiMap 5.5/6.0 installed, and turn the ECU on. Launch EasiMap 5.5/6.0 software and follow these paths:

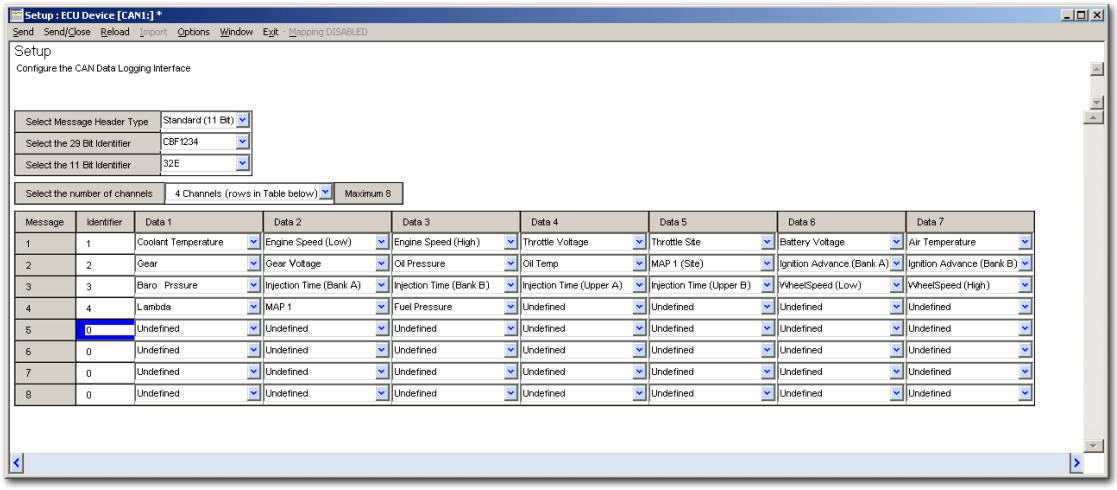
- EasiMap 5.5: Data>>CAN Datastreeam>>Setup;
- Easimap 6: System>>CAN Datastream>>Setup.





Now the program reads the information coming from the ECU and opens a new window to configure the communication.Complete the table with the information suggested in the screen below.

Please note: parameters must be configured in the right sequence and with the right scaling in order to communicate with the AIM data logger:



When all parameters are configured, press [Send] and choose [ECU Device] when requested; configuration is saved in the ECU memory.

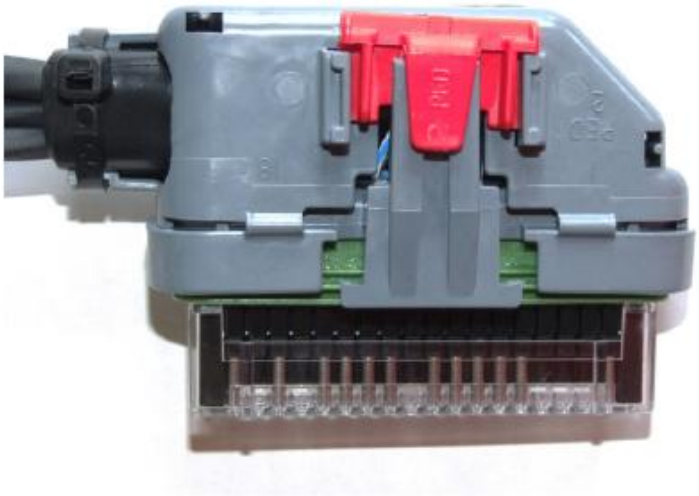
Close configuration window and quit the program. Before connecting ECU to the data logger, enable “Broadcast Mode” ensuring a nominally zero voltage (or open circuit) on Fuel Trim and Ignition Trim inputs.

Please note: data logging configuration with EasiMap v5.0 software is intended for expert users only. Refer to www.mbesystems.com for further information.

4.3 – Pinout

- Pin 8 CAN low has to be connected to logger blu wire labelled CAN -
- Pin 9 CAN high has to be connected to logger white wire labelled CAN +

This ECU is equipped with a 36 pins J2 Delphi connector:



4.4 – CAN Communication protocol

Channels received by AIM loggers connected to a MBE 992 CAN ECU are:

ID	CHANNEL NAME	FUNCTION
ECU_1	MBE_WATER_TEMP	Water Temperature
ECU_2	MBE_RPM	Engine Speed
ECU_3	MBE_THROT_VOLT	Throttle Voltage
ECU_4	MBE_TPS	Throttle Position (Raw)
ECU_5	MBE_BATTERY	Battery Voltage
ECU_6	MBE_AIR_TEMP	Intake Air temperature
ECU_7	MBE_GEAR	Gear Engaged
ECU_8	MBE_GEAR_VOLT	Gear Voltage
ECU_9	MBE_OIL_PRESS	Oil Pressure
ECU_10	MBE_OIL_TEMP	Oil Temperature
ECU_11	MBE_MAP_SIDE	Map side
ECU_12	MBE_IGN_BANK_A	Ignition Bank A
ECU_13	MBE_IGN_BANK_B	Ignition Bank B
ECU_14	MBE_BARO_PRESS	Barometric Pressure
ECU_15	MBE_INJ_BANK_A	Injection Time Bank A
ECU_16	MBE_INJ_BANK_B	Injection Time Bank B
ECU_17	MBE_INJ_UP_A	Injection Time Up A
ECU_18	MBE_INJ_UP_B	Injection Time Up B
ECU_19	MBE_WHEELSPEED	Wheel Speed
ECU_20	MBE_LAMBDA	Lambda AFR
ECU_21	MBE_MAP	Manifold Pressure
ECU_22	MBE_FUEL_PRESS	Fuel Pressure
ECU_23	MBE_TPP	Throttle Position

Chapter 5 – MBE 9A4 CAN

5.1 – CAN Communication Set–up

The ECU is equipped with a CAN communication interface used to communicate parameters to an external data logger or to configure the ECU itself.

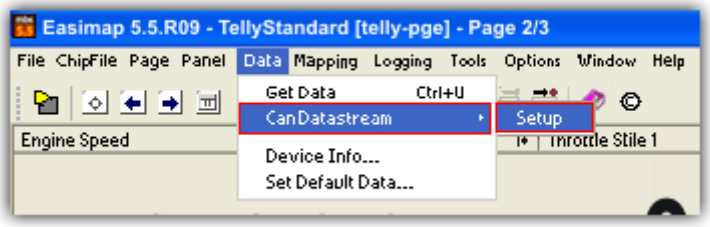
5.2 – ECU Configuration

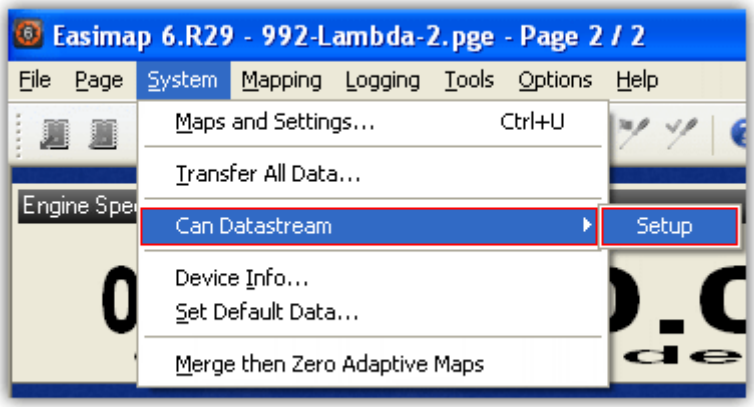
The ECU must be properly configured using “EasiMap” software supplied with the ECU in order to communicate with the data logger.

Please note: data logging configuration with EasiMap v5.0 and EasiMap 6.0 software is intended for expert users only. Refer to www.mbesystems.com for further information.

Connect the ECU to a PC with EasiMap 5.5/6.0 installed, and turn the ECU on. Launch EasiMap 5.5/6.0 software and follow these paths:

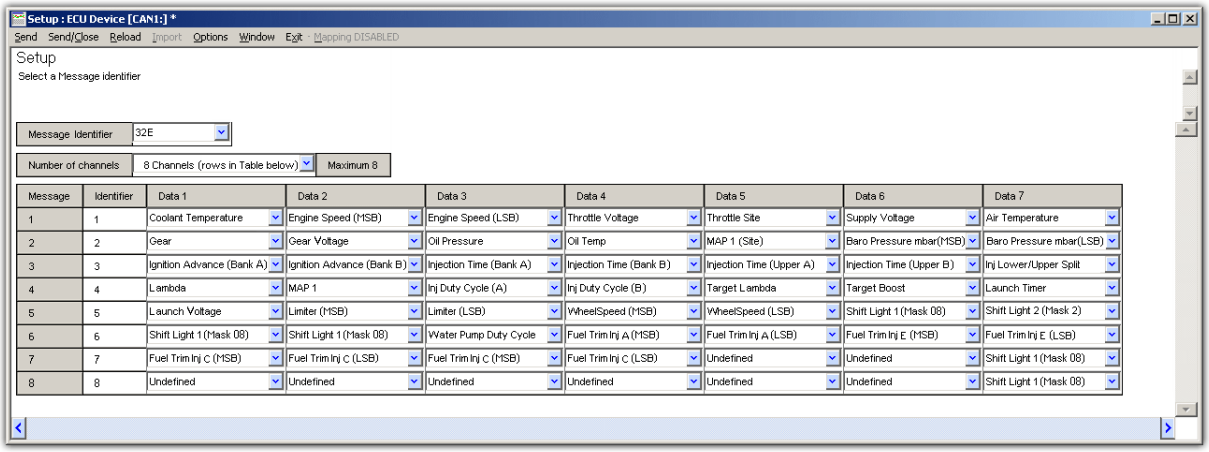
- EasiMap 5.5: Data>>CAN Datastream>>Setup;
- EasiMap 6.0: System>>CAN Datastream>>Setup.





Now the program reads information from the ECU and opens a new window to configure the communication.Complete the table with the information suggested in the screen below.

Please note: parameters must be configured in the right sequence and with the right scaling in order to communicate with the AIM data logger:



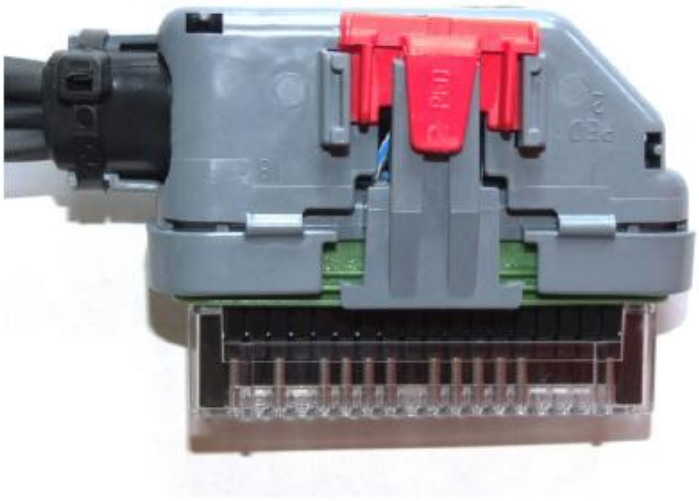
When all parameters are configured, press [Send] button and choose [ECU Device] when requested; configuration is saved in the ECU memory.

Close configuration window and quit the program. Before connecting ECU to the data logger, enable “Broadcast Mode” ensuring a nominally zero voltage (or open circuit) on Fuel Trim and Ignition Trim inputs.

5.3 – Pinout

- Pin 8 CAN low has to be connected to logger blu wire labelled CAN -;
- Pin 9 CAN high has to be connected to logger white wire labelled CAN +.

The ECU is equipped with a 36 pins J2 Delphi connector:



5.4 – CAN Communication protocol

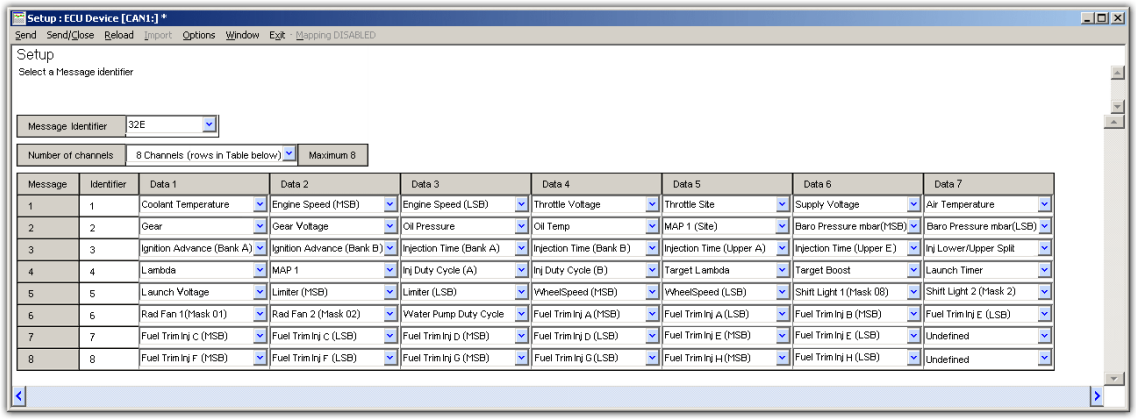
Channels received by AIM loggers connected to an MBE 9A4 CAN ECU are:

ID	CHANNEL NAME	FUNCTION
ECU_1	MBE_WATER_TEMP	Water Temperature
ECU_2	MBE_RPM	Engine Speed
ECU_3	MBE_THROT_VOLT	Throttle Voltage
ECU_4	MBE_THROT_SIDE	Throttle Position (raw)
ECU_5	MBE_BATTERY	Battery Voltage
ECU_6	MBE_AIR_TEMP	Intake Air Temperature
ECU_7	MBE_TPP	Throttle Position Pedal
ECU_8	MBE_GEAR	Engaged gear
ECU_9	MBE_GEAR_VOLT	Gear 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 Time Bank A
ECU_17	MBE_INJ_B	Injection Time Bank B
ECU_18	MBE_INJ_UP_A	Injection Time Up A
ECU_19	MBE_INJ_UP_B	Injection Time Up B
ECU_20	MBE_INJ_SPLIT	Injection Time lower/Upper Split
ECU_21	MBE_LAMBDA	Lambda AFR
ECU_22	MBE_MAP	Manifold 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 AFR
ECU_26	MBE_TAR_BOOST	Target Boost
ECU_27	MBE_LAUNCH_TIM	Lauch 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

6 – MBE 9A8 CAN

6.1 – CAN Communication Set–up

The ECU is equipped with a CAN communication interface used to communicate parameters to an external data logger or to configure the ECU itself.



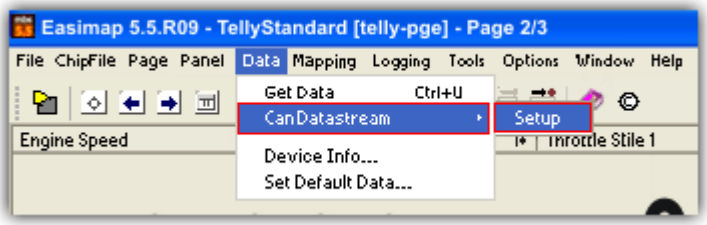
6.2 – ECU Configuration

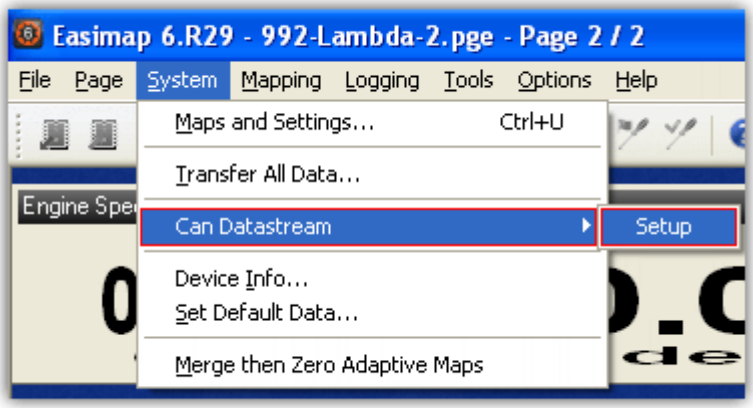
The ECU must be properly configured using “EasiMap” software supplied with the ECU in order to communicate with the data logger.

Please note: data logging configuration with EasiMap v5.0 and EasiMap 6.0 software is intended for expert users only. Refer to www.mbesystems.com for further information.

Connect the ECU to a PC with EasiMap 5.5/6.0 installed, and turn the ECU on. Launch EasiMap 5.5/6.0 software and follow these paths:

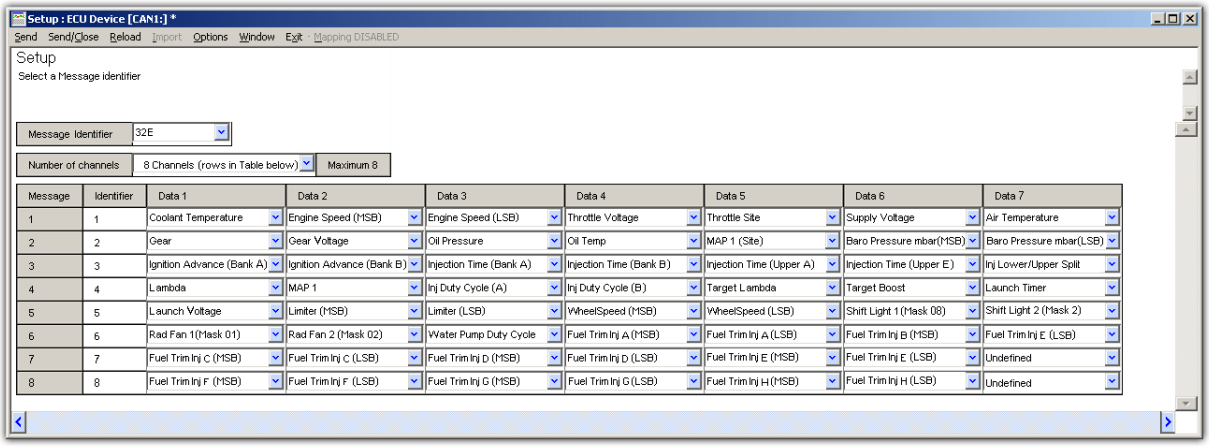
- EasiMap 5.5: Data>>CAN Data stream>>Setup;
- EasiMap 6.0: System>> CAN Datastream>>Setup.





Now the program reads information coming from the ECU and opens a new window to configure the communication.Complete the table with the information suggested in the screen below.

Please note: parameters must be configured in the right sequence and with the right scaling in order to communicate with the AIM data logger:



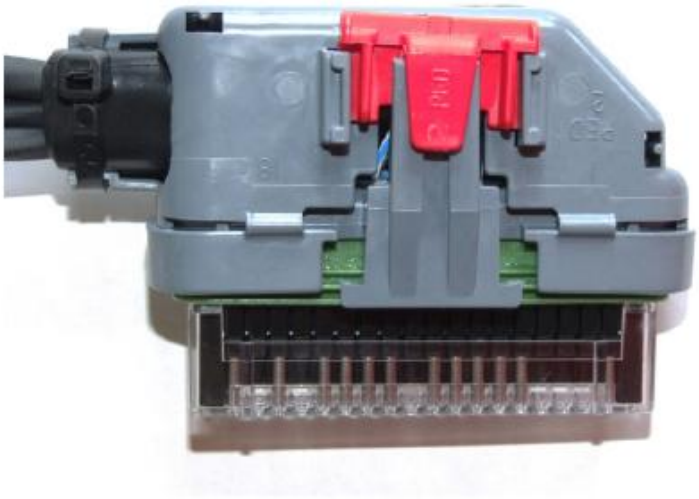
When all parameters are configured, press [Send] button and choose [ECU Device] when requested; configuration is saved in the ECU memory.

Close configuration window and quit the program. Before connecting ECU to the data logger, enable “Broadcast Mode” ensuring a nominally zero voltage (or open circuit) on Fuel Trim and Ignition Trim inputs.

6.3 – Pinout

- Pin 8 CAN low has to be connected to logger blu wire labelled CAN -
- Pin 9 CAN high has to be connected to logger white wire labelled CAN +

This ECU has got just this 36 pins J2 Delphi connector:



6.4 – CAN Communication protocol

Channels received by AIM loggers connected to MBE 9A8 CAN ECU are:

ID	CHANNEL NAME	FUNCTION
ECU_1	MBE_WATER_TEMP	Water Temperature
ECU_2	MBE_RPM	Engine Speed
ECU_3	MBE_THROT_VOLT	Throttle Voltage
ECU_4	MBE_THROT_SIDE	Throttle Position (raw)
ECU_5	MBE_BATTERY	Battery Voltage
ECU_6	MBE_AIR_TEMP	Intake Air Temperature
ECU_7	MBE_TPP	Throttle Position
ECU_8	MBE_GEAR	Gear Engaged
ECU_9	MBE_GEAR_VOLT	Gear 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 Time Bank A
ECU_17	MBE_INJ_B	Injection Time Bank B
ECU_18	MBE_INJ_UP_A	Injection Time Up A
ECU_19	MBE_INJ_UP_B	Injection Time Up B
ECU_20	MBE_INJ_SPLIT	Injection Time lower/Upper Split
ECU_21	MBE_LAMBDA	Lambda AFR
ECU_22	MBE_MAP	Manifold 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 AFR
ECU_26	MBE_TAR_BOOST	Target Boost
ECU_27	MBE_LAUNCH_TIM	Lauch 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
ECU_40	MBE_TRIM_INJE	Fuel Trim Injection E
ECU_41	MBE_TRIM_INJF	Fuel Trim Injection F
ECU_42	MBE_TRIM_INJG	Fuel Trim Injection G
ECU_43	MBE_TRIM_INJH	Fuel Trim Injection H

7 – MBE 9A8998 CAN

7.1 – CAN Communication Set–up

The ECU is equipped with a CAN communication interface used to communicate parameters to an external data logger or to configure the ECU itself.

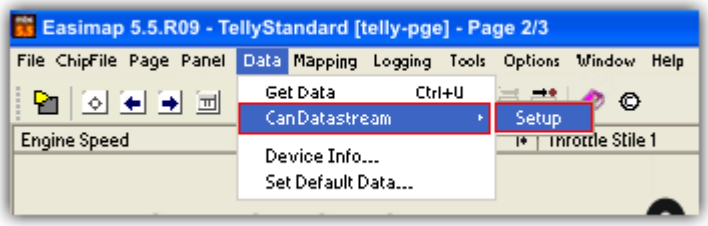
7.2 – ECU Configuration

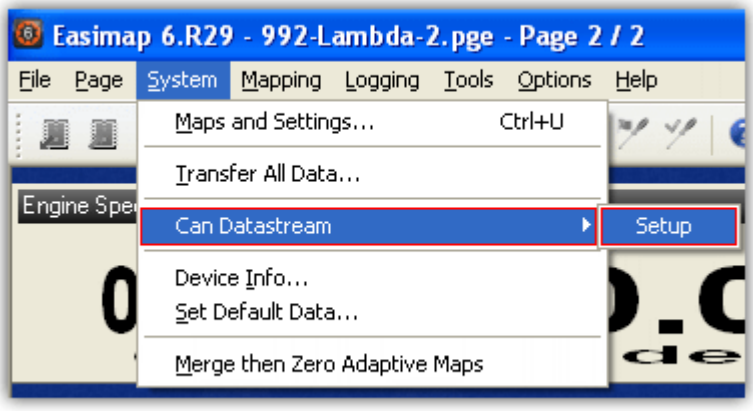
In order to communicate with the data logger, the ECU must be properly configured using “EasiMap” software supplied with the ECU.

Please note: data logging configuration with EasiMap v5.0 and EasiMap 6.0 software is intended for expert users only. Refer to www.mbesystems.com for further information.

Connect the ECU to a PC with EasiMap 5.5/6.0 installed, and turn the ECU on. Launch EasiMap 5.5/6.0 software and follow these paths:

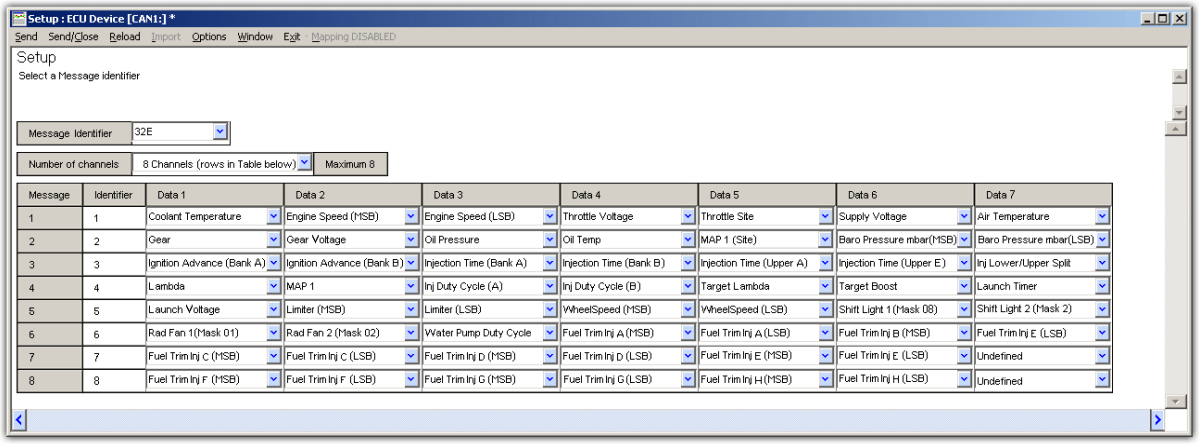
- EasiMap 5.5: Data>>CAN Datastream>>Setup;
- EasiMap 6>>System>>CAN Datastream>>Setup.



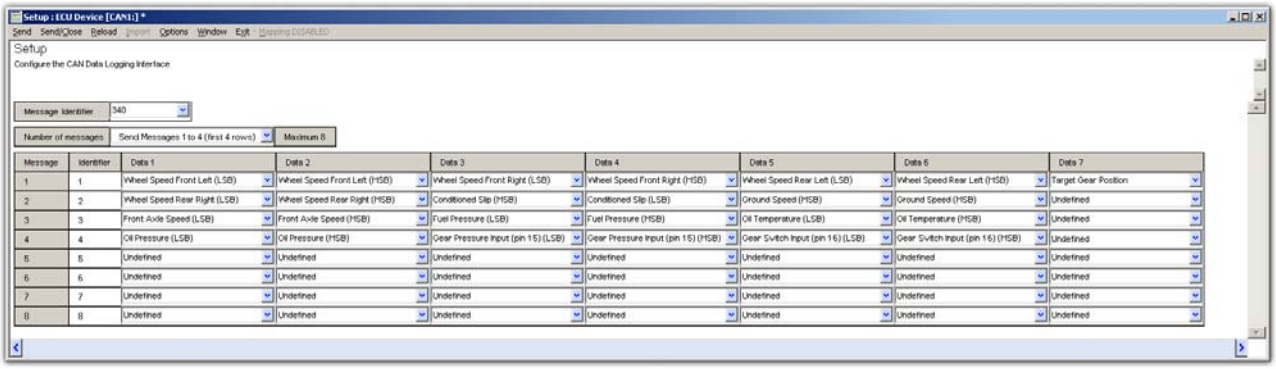


Now the program reads information coming from the ECU and opens a new window to configure the communication.Complete the table with the information suggested in the screen below.

Please note: parameters must be configured in the right sequence and with the right scaling in order to communicate with the AIM data logger:



In this case the configuration requires the 998 Traction Control scheme too:



When all parameters are configured, press [Send] button and choose [ECU Device] when requested; configuration is saved in the ECU memory.

Close configuration window and quit the program. Before connecting ECU to the data logger, enable “Broadcast Mode” ensuring a nominally zero voltage (or open circuit) on Fuel Trim and Ignition Trim inputs.

7.3 – Pinout

- Pin 8 CAN low has to be connected to logger blu wire labelled CAN-;
- Pin 9 CAN high has to be connected to logger white wire labelled CAN+.

As far as pinout of 998 Traction Control is concerned:

- Pin 7 CAN low has to be connected to logger blu wire labelled CAN-;
- - Pin 6 CAN high has to be connected to logger white wire labelled CAN+.

This ECU is equipped with a 36 pins J2 Delphi connector.

7.4 – CAN Communication protocol

Channels received by AIM logger connected to MBE 9A8998 CAN ECU are:

ID	CHANNEL NAME	FUNCTION
ECU_1	MBE_WATER_TEMP	Water Temperature
ECU_2	MBE_RPM	Engine Speed
ECU_3	MBE_THROT_VOLT	Throttle Voltage
ECU_4	MBE_THROT_SIDE	Throttle Position (raw)
ECU_5	MBE_BATTERY	Battery Voltage
ECU_6	MBE_AIR_TEMP	Intake Air Temperature
ECU_8	MBE_GEAR	Gear Engaged
ECU_9	MBE_GEAR_VOLT	Gear 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 Time Bank A
ECU_17	MBE_INJ_B	Injection Time Bank B
ECU_18	MBE_INJ_UP_A	Injection Time Up A
ECU_19	MBE_INJ_UP_B	Injection Time Up B
ECU_20	MBE_INJ_SPLIT	Injection Time lower/Upper Split
ECU_21	MBE_LAMBDA	Lambda AFR
ECU_22	MBE_MAP	Manifold 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 AFR
ECU_26	MBE_TAR_BOOST	Target Boost
ECU_27	MBE_LAUNCH_TIM	Lauch 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
ECU_40	MBE_TRIM_INJE	Fuel Trim Injection E
ECU_41	MBE_TRIM_INJF	Fuel Trim Injection F
ECU_42	MBE_TRIM_INJG	Fuel Trim Injection G
ECU_43	MBE_TRIM_INJH	Fuel Trim Injection H
ECU_44	MBE_FRONT_LEFT	Wheel Speed Front Left
ECU_45	MBE_FRONT_RIGHT	Wheel Speed Front Right
ECU_46	MBE_REAR_LEFT	Wheel Speed Rear Left
ECU_47	MBE_REAR_RIGHT	Wheel Speed Rear Right
ECU_48	MBE_SLIP	Conditioned Slip
ECU_49	MBE_GROUND_SPD	Ground Speed
ECU_50	MBE_FRONT_AXLE	Axle Speed
ECU_51	MBE_FUEL_PRESS	Fuel Pressure
ECU_52	MBE_OIL_TEMP	Oil Temperature
ECU_53	MBE_OIL_PRESS	Oil Pressure
ECU_54	MBE_GEAR_PRESS	Gear Pressure
ECU_55	MBE_GEAR_SWITCH	Gear Switch
ECU_56	MBE_TARG_GEAR	Target Gear

8 – MBE 998 CAN

8.1 – CAN Communication Set–up

The ECU is equipped with a CAN communication interface used to communicate parameters to an external data logger or to configure the ECU itself.

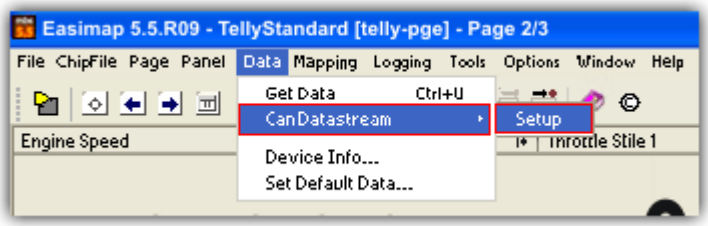
8.2 – ECU Configuration

The ECU must be properly configured using “EasiMap” software supplied with the ECU in order to communicate with the data logger.

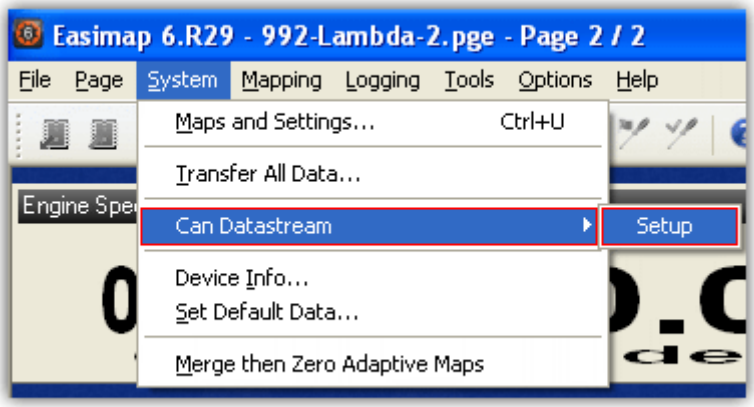
Please note: data logging configuration with EasiMap v5.0 and EasiMap 6.0 software is intended for expert users only. Refer to www.mbesystems.com for further information.

Connect the ECU to a PC with EasiMap 5.5/6.0 installed, and turn the ECU on. Launch EasiMap 5.5/6.0 software and follow these paths:

- EasiMap 5.5: Data>>CAN Datastream>>Setup;
- EasiMap 6>>System>>CAN Datastream>>Setup.



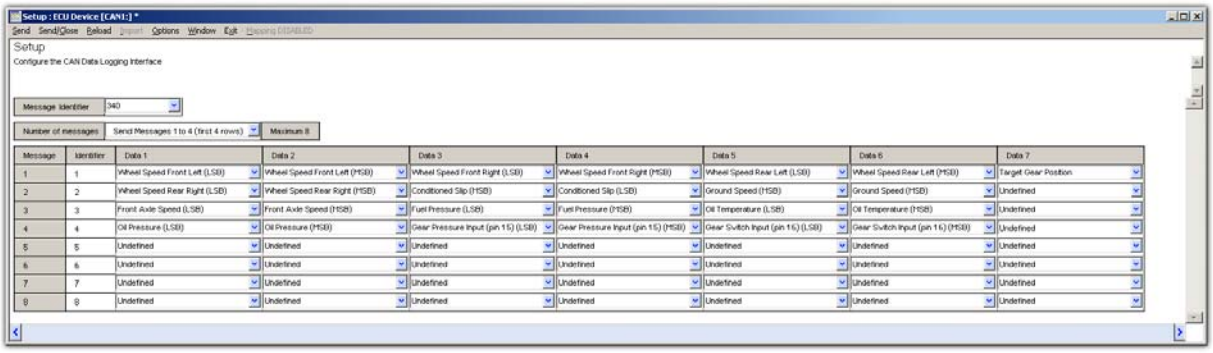
EasiMap 6.0



Now the program reads information coming from the ECU and opens a new window to configure the communication.Complete the table with the information suggested in the screen below.

Please note: parameters must be configured in the right sequence and with the right scaling in order to communicate with the AIM data logger:

In this case configuration requires also the 998 Traction Control scheme:



When all parameters are configured, press [Send] button and choose [ECU Device] when requested; configuration is saved in the ECU memory.

Close configuration window and quit the program. Before connecting ECU to the data logger, enable “Broadcast Mode” ensuring a nominally zero voltage (or open circuit) on Fuel Trim and Ignition Trim inputs.

8.3 – Pinout

- Pin 7 CAN low has to be connected to logger blu wire labelled CAN-;
- Pin 6 CAN high has to be connected to logger white wire labelled CAN+.

8.4 – CAN Communication protocol

ID	CHANNEL NAME	FUNCTION
ECU_1	MBE_FRONT LEFT	Front Left wheel speed
ECU_2	MBE_FRONT_RIGHT	Front Right wheel speed
ECU_3	MBE_REAR_ LEFT	Rear Left wheel speed
ECU_4	MBE_REAR_RIGHT	Rear Right wheel speed
ECU_5	MBE_SLIP	Conditioned Slip
ECU_6	MBE_GROUND_SPD	Ground Speed
ECU_7	MBE_FRONT_AXLE	Axle Speed
ECU_8	MBE_FUEL_PRESS	Fuel Pressure
ECU_9	MBE_OIL_TEMP	Oil Temperature
ECU_10	MBE_OIL_PRESS	Oil Pressure
ECU_11	MBE_GEAR_PRESS	Gear Pressure
ECU_12	MBE_GEAR_SWITCH	Gear Switch
ECU_13	MBE_TARG_GEAR	Target Gear

9 – MBE LOLA COSWORTH

9.1 – CAN Communication Set–up

The ECU is equipped with a CAN communication interface used to communicate parameters to an external data logger,or to configure the ECU itself.

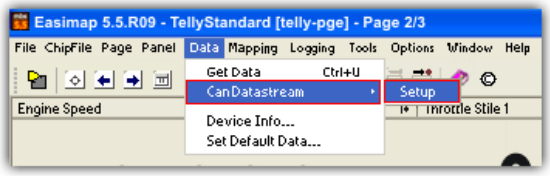
9.2 – ECU Configuration

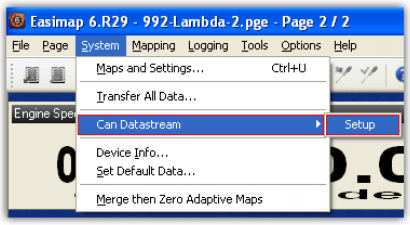
The ECU must be properly configured using “EasiMap” software supplied with the ECU In order to communicate with the data logger.

Please note: data logging configuration with EasiMap v5.0 and EasiMap 6.0 software is intended for expert users only. Refer to www.mbesystems.com for further information.

Connect the ECU to a PC with EasiMap 5.5/6.0 installed, and turn the ECU on. Launch EasiMap 5.5/6.0 software and follow these paths:

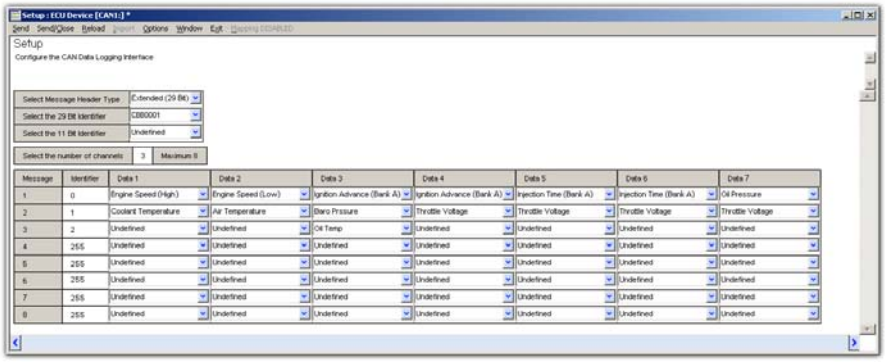
- EasiMap 5.5: Data>>CAN Datastream>>Setup;
- EasiMap 6>>System>>CAN Datastream>>Setup.





Now the program reads information coming from the ECU and opens a new window to configure the communication.Complete the table with the information suggested in the screen below.

Please note: parameters must be configured in the right sequence and with the right scaling in order to communicate with the AIM data logger:



When all parameters are configured, press [Send] button and choose [ECU Device] when requested; configuration is saved in the ECU memory.

Close configuration window and quit the program. Before connecting ECU to the data logger, enable “Broadcast Mode” ensuring a nominally zero voltage (or open circuit) on Fuel Trim and Ignition Trim inputs.

6.3 – Pinout

- Pin 8 CAN low has to be connected to logger blu wire labelled CAN-;
- - Pin 9 CAN high has to be connected to logger white wire labelled CAN+.

The ECU is equipped with a 36 pins J2 Delphi connector:

9.4 – CAN Communication protocol

Channels received by AIM loggers connected with a MBE Lola Cosworth ECU are:

ID	CHANNEL NAME	FUNCTION
ECU_1	MBE_RPM	Engine Speed
ECU_2	MBE_IG_ADV_BKA	Ignition Advance Bank A
ECU_3	MBE_INJT_BKA	Injection Time Bank A
ECU_4	MBE_OIL_PRESS	Oip Pressure
ECU_5	MBE_COOL_TEMP	Coolant Temperature
ECU_6	MBE_AIR_TEMP	Intake Air Temperature
ECU_7	MBE_BARO_PRESS	Barometric Pressure
ECU_8	MBE_TPS_VOLT	Throttle Voltage
ECU_9	MBE_OIL_TEMP	Oil Temperature