ECUMASTER ADU

Application Note

EMERALD K3/K6

Revision 1.00

1. Copyright and trademarks

2. Introduction

This application note explains how to connect and configure the EMERALD K3/K6 series with the ECUMASTER ADU.

3. Electrical connection

The EMERALD K3/K6 ECU is able to send the data stream over the CAN BUS. The CAN BUS is located in DB9 connector at the back of the device (marked *comms*).

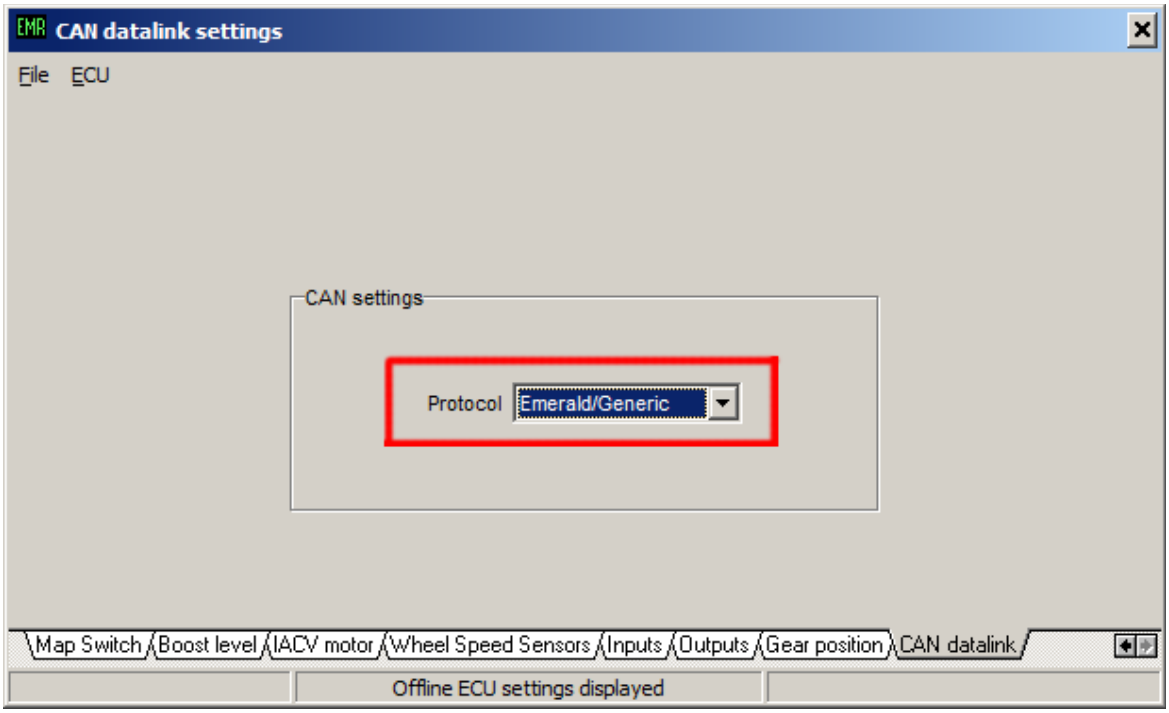
The EMERALD K3/K6 generic data stream uses 1Mbs CAN BUS speed and you can use ADU CAN1 or CAN2.

DB9 terminal	ADU CAN1	ADU CAN2	Comment
2	4	6	CAN L
1	3	5	CAN H

Twisted pair cable is required for any CAN BUS connection.
Ensure that the CAN BUS is properly terminated.

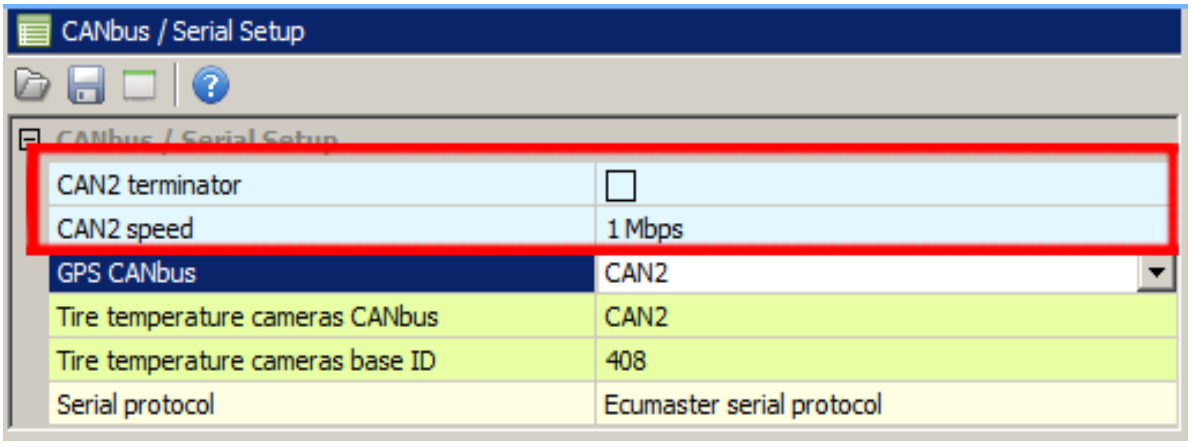
4. ADU and EMERALD K3/K6 configuration

The first step is to enable theEMERAL ECU CAN output protocol. The option is available in menu "ECU configuration/CAN datalink".

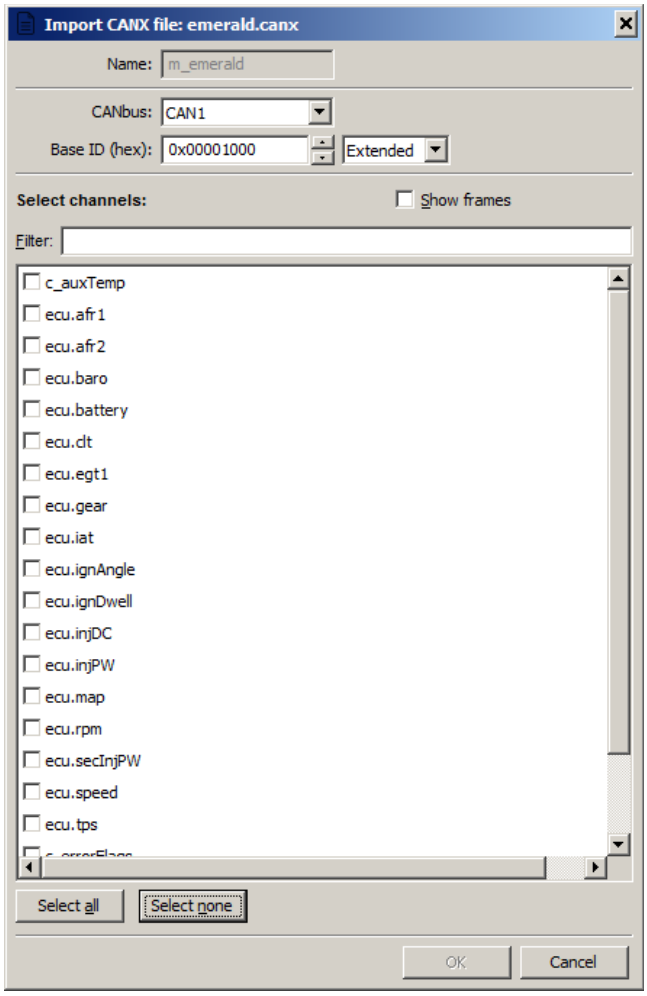


The *Emerald/Generic* protocol should be selected. The generic protocol can be enabled on Emerald K3 ECU's that have a firmware version v1.05 or higher.

If you use ADU CAN1, the speed is fixed at 1Mbps and no CAN configuration is required. If you choose to ADU CAN2 bus, you must set proper CAN BUS speed (1Mbps) and termination. To open CAN2 configuration, press F9 to show the pane selector. Then open "*General / CAN BUS Serial setup*".

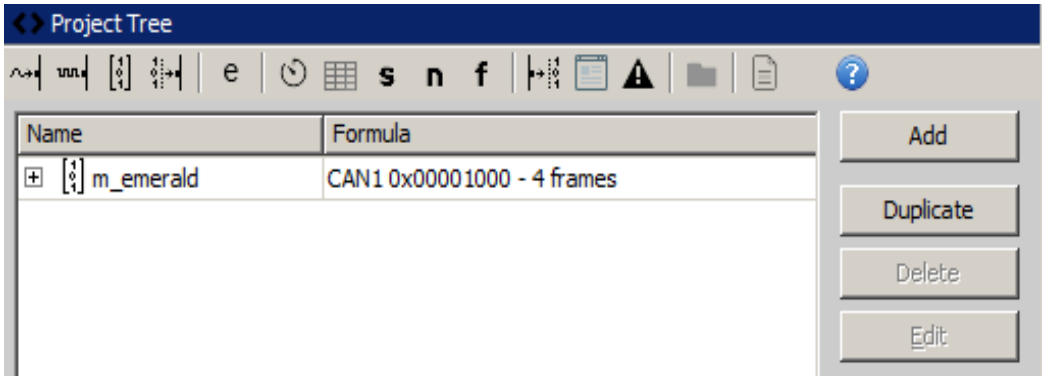


The next step is to load the CANX file with EMERALD K3/K6 channel definitions.



On the Project tree, click the “Add” button and select “Import .CANX file”. When the file dialog opens, select the “*Emerald.canx*” file. The following dialog appears:

At this point, select the CAN BUS that will be used for communication (CAN1 or CAN2) and the channels you want to read. In most situations all channels should be loaded (Select All). The project tree should look like the following:



If you open “*m_emerald”* mob, all available CAN inputs (channels) should be visible.

5. Supported channels

ADU channel	Description
ecu.afr1	AFR 1
ecu.afr2	AFR 2
ecu.baro	Barometric pressure
ecu.battery	Battery voltage
ecu.clt	Engine coolant temperature
ecu.egt1	Exhaust gas temperature
ecu.gear	Current gear
ecu.iat	Intake manifold temperature
ecu.ignAngle	Ignition advance
ecu.ignDwell	Coil dwell time
ecu.injPW	Injectors pulse width
ecu.injDC	Injectors duty cycle
ecu.lambda1	Lambda from oxygen sensor #1
ecu.map	Manifold absolute pressure
ecu.rpm	Engine RPM
ecu.secInjPW	Second injectors bank DC
ecu.speed	Vehicle speed
ecu.tps	Throttle position sensor
c_aux_temp	Auxiliary temperature
c_selectedMap	Currently selected map
c_errorFlags	Error flags
c_statusFlags	Status flags

6. Revision log