

AiM Infotech

## Emerald K3 and K6 ECU – Generic CAN

#### Release 1.00







This tutorial explains how to connect Emerald K3/K6 ECU to AiM devices.

# 1 Software setup

To connect Emerald K3/K6 ECU to AiM devices a software setup is needed. Run Emerald K3/K6 software and follow this path:

• ECU Configuration -> CAN datalink

Map 1 - empty		- 0	×
File Comms Additional maps Graph Setup	ECU configuration Help		
File Comms Additional maps Graph Setup	ECU configuration       Help         ECU version info       Crank/Cam/Distributor sensors         Ignition outputs       Ignition outputs         Injector outputs       Injector outputs         Air Temperature Sensor       Coolant Temperature Sensor         Aux Temperature Sensor       EGT sensor         Throttle Position Sensor       MAP Sensor         BARO Sensor       AFR/Lambda input	Ctrl+E	
Injection type:	Map Switching		
Exhaust:	Boost - dash control		
,	Wheel Speed Sensors		
	Idle air control valve		
Details/Events/Ignition/Injection/Idle control/Ign c	Input channels		
14:18 O Bas	Output channels		Llink
	Gear position		
	CAN datalink		



- CAN datalink settings
   ×

   File
   ECU

   CAN settings
   Protocol

   Protocol
   Emerald/Generic

   VMap Switch /Boost level /IACV motor /Wheel Speed Sensors /Inputs /Outputs /Gear position / CAN datalink
   Image: Can datalink

   Offline ECU settings displayed
   Offline ECU settings displayed
- "CAN datalink settings" panel appears, make sure it is set as "Emerald/Generic".

• follow the path "ECU -> Update ECU configuration"

CAN datalink settings ×			
File	ECU		
	Read ECU configuration		
	Update ECU configuration		
	Install firmware		
	CAN settings Protocol Emerald/Generic		
\Map Switch /Boost level /IACV motor /Wheel Speed Sensors /Inputs /Outputs /Gear position \CAN datalink /			
	Offline ECU settings displayed		

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# 2 Connection to AiM devices

Emerald K3/K6 ECU features a bus communication protocol based on CAN. Rear on the ECU are two DB9 connectors: AiM devices use the one on the left labelled "COMMS". Here below you see DB9 connector on the left, its pinout on the right and the connection table below.



**Please note**: Emerald K3/K6 ECUs come with a programming cable, this can be modified to include the CAN connection. The images here below show the cable plugged in on the left and an example of cable on the right.



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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 "Emerald"
- ECU Model "Generic CAN"

### 4 "Emerald" "Generic CAN" protocol

Channels received by AiM devices connected to "Emerald" "Generic CAN" protocol are:

CHANNEL NAME	FUNCTION	
RPM	RPM	
MAP	Manifold air pressure	
BARO	Barometric pressure	
TPS	Throttle position sensor	
CoilOnTime	Coil on time	
EGT	Exhaust gas temperature	
RoadSpeed	Vehicle speed	
AFR1	Air/Fuel ratio 1	
AFR2	Air/Fuel ratio 2	
StatusFlags	Status message	
ErrorFlags	Error message	
Pri Inj BankOnTm	Primary injection bank (time)	
Sec Inj BankOnTm	Secondary injection bank (time)	
AIR TEMP	Air temperature	
COOLANT TEMP	Coolant temperature	
AUX TEMP	Auxiliary temperature	



#### IGNITION ADV INJECTOR DUR GEAR SELECTED MAP Battery

Ignition advance Injector duration Engaged gear Active engine map Battery voltage

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