



AiM Infotech

Link G4
CAN Bus Base and
CAN 500k Bus Base protocol

Release 1.02



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Prerequisites

This tutorial explains how to connect Link G4 to AiM devices. Link G4 features a bus communication protocol based on CAN. To make the ECU correctly communicate with AIM devices some pre-requisites are to be verified:

- ECU Firmware version is to be 4.8.0 or higher;
- ECU serial number is to be 10000 or higher;
- PC-Link software release is to be 4.8.xxx or higher.

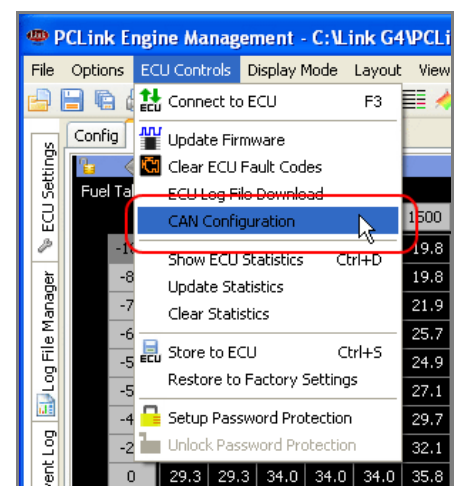
2

Software setup

To set up Link G4 ECU use PC-Link software. You can set your ECU to two different bit rate:

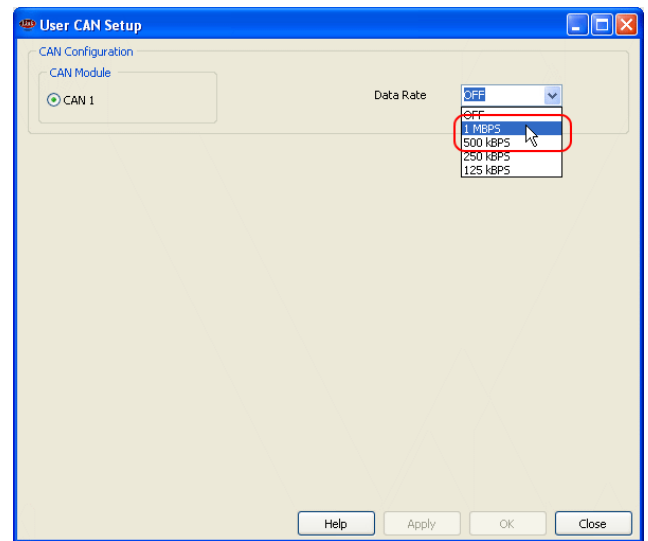
- 1MBPS or
- 500kBPS

Run the software, load a configuration (File → open) and follow this path:
ECU Controls → CAN Configuration as shown here on the right.

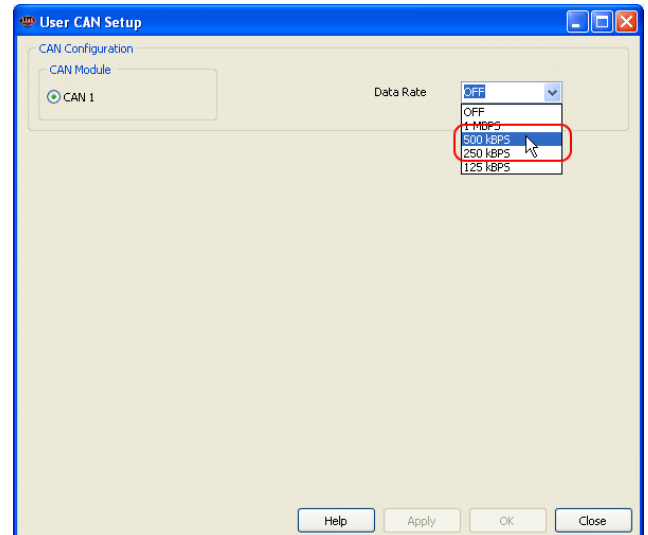


"User CAN Setup" panel appears:

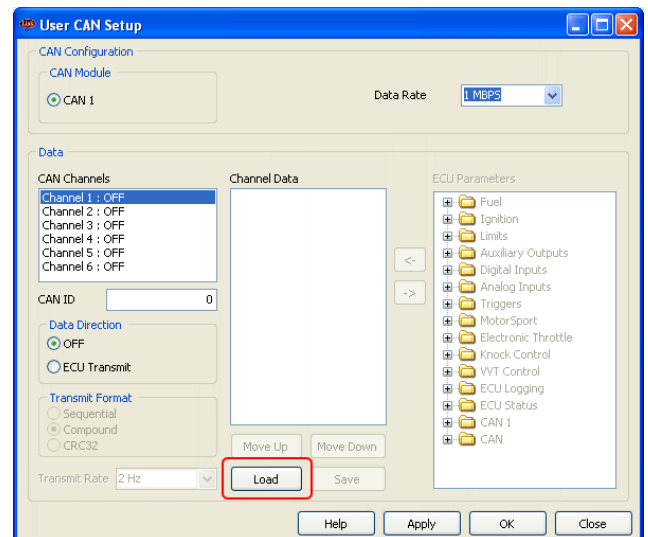
- select Data Rate 1 MBPS to set it to 1MBPS or.



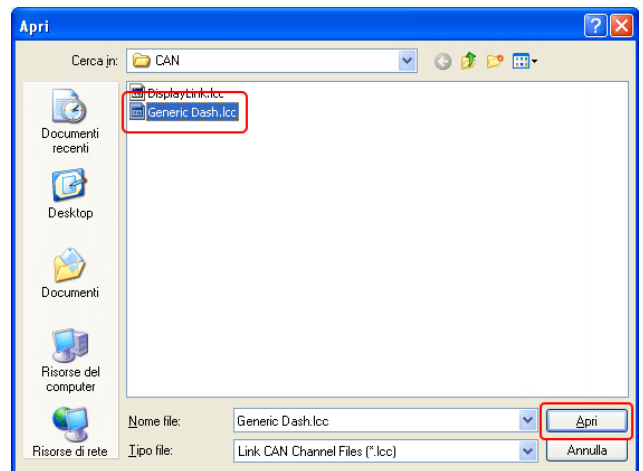
- select Data Rate 500kbps to set it to 500kbps



The panel shows the selected CAN Setup (here on the right you see CAN setup of 1MBPS rate). Press "Load".



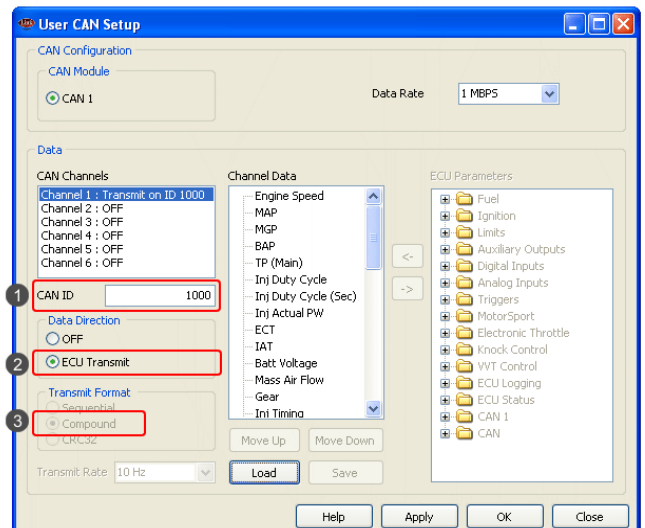
Select "Generic Dash.lcc" and press "Open"



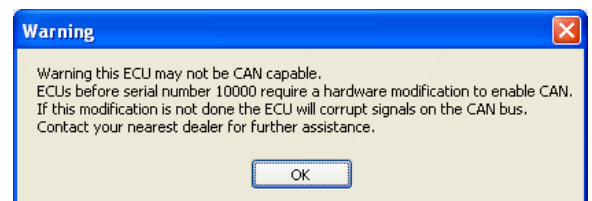
It is now necessary to check the following parameters settings:

- CAN ID: 1000 (1);
- ECU Transmit flag: enabled (2);
- Compound flag: enabled (3).

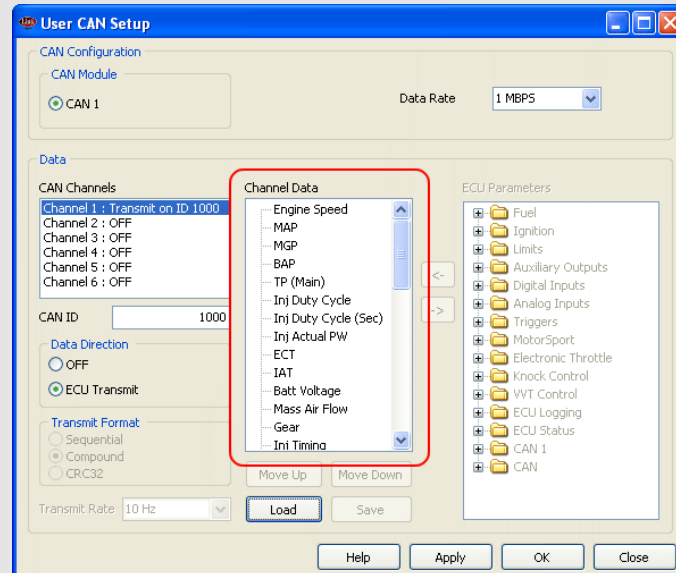
Once these parameters verified press "Apply" and "OK"



The system warns you to check your ECU serial number to verify that it is 10000 or higher. Press "OK" and transmit the configuration to the ECU.



Please note: once “Generic Dash” file loaded, Channels Data” box, highlighted here below, must show exactly the list that follows



Channel Data list:

| | | |
|----------------------|-------------------|-------------------|
| Engine speed | Inj Timing | Speed (DI #1) |
| MAP | Ign Angle | Speed (DI #2) |
| MGP | Inlet/LH Posn | Speed (DI #3) |
| BAP | Inlet/RH Posn | Speed (DI #4) |
| TP (Main) | Exh/LH Posn | Knk Level Cyl 1 |
| Inj Duty Cycle | Exh RH Posn | Knk Level Cyl 2 |
| Inj Duty Cycle (sec) | WideBand1 | Knk Level Cyl 3 |
| Inj Actual PW | WideBand2 | Knk Level Cyl 4 |
| ECT | Trig1 Err Counter | Knk Level Cyl 5 |
| IAT | Fault Codes | Knk Level Cyl 6 |
| Battery Voltage | Fuel Pressure | Knk Level Cyl 7 |
| Mass Air Flow | Oil Temp | Knk Level Cyl 8 |
| Gear | Oil Pressure | Limits Flags Word |

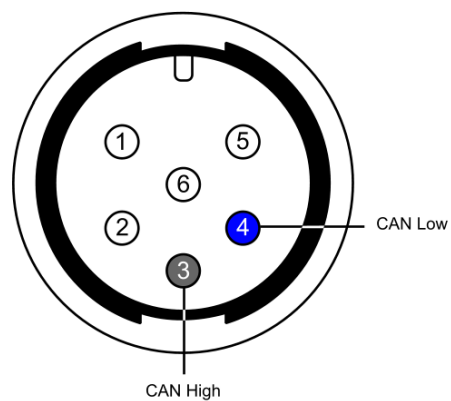
3

Wiring connection

Link G4 ECU CAN Bus is on the bottom right connector shown here below.



Here below are connector pinout and connection table.



| ECU connector pin | Function | Cable colour | AiM cable |
|-------------------|----------|--------------|-----------|
| 3 | CAN High | White | CAN+ |
| 4 | CAN Low | Green | CAN- |

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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 "Link"
- ECU Model:
 - "CAN_BUS_BASE_LCC" for 1MBPS bit rate;
 - "CAN_500k_BUS_BASE_LCC" for 500 kbps bit rate

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Available channels

Channels received by AiM loggers connected to "Link" with "CAN_BUS_BASE_LCC" protocol and to "CAN_500k_BUS_BASE_LCC" protocol are the same; the only difference is the bit rate:

| ID | CHANNEL NAME | FUNCTION |
|--------|--------------|----------------------------|
| ECU_1 | ECU_RPM | RPM |
| ECU_2 | ECU_SPEED1 | Speed 1 |
| ECU_3 | ECU_SPEED2 | Speed 2 |
| ECU_4 | ECU_SPEED3 | Speed 3 |
| ECU_5 | ECU_SPEED4 | Speed 4 |
| ECU_6 | ECU_TPS | Throttle position sensor |
| ECU_7 | ECU_ECT | Engine coolant temperature |
| ECU_8 | ECU_IAT | Intake air temperature |
| ECU_9 | ECU_OILT | Oil temperature |
| ECU_10 | ECU_GEAR | Engaged gear |
| ECU_11 | ECU_MAP | Manifold air pressure |
| ECU_12 | ECU_MGP | Manifold gauge pressure |
| ECU_13 | ECU_BARO | Barometric pressure |



| | | |
|--------|----------------|------------------------------------|
| ECU_14 | ECU_MAF_GR_SEC | Manifold air flow (g/sec) |
| ECU_15 | ECU_OIL_PRESS | Oil pressure |
| ECU_16 | ECU_FUEL_PRESS | Fuel pressure |
| ECU_17 | ECU_VOLTS | Battery voltage |
| ECU_18 | ECU_WBO2_LAM1 | Lambda 1 |
| ECU_19 | ECU_WBO2_LAM2 | Lambda 2 |
| ECU_20 | ECU_CAM_IN_LF | Camshaft left inlet position |
| ECU_21 | ECU_CAM_IN_RH | Camshaft right inlet position |
| ECU_22 | ECU_CAM_EX_LF | Camshaft left exhaust position |
| ECU_23 | ECU_CAM_EX_RH | Camshaft right exhaust position |
| ECU_24 | ECU_INJECT_TIM | Injection time |
| ECU_25 | ECU_IGN_TIM | Ignition time |
| ECU_26 | ECU_INJ_DC | Injection dwell counter |
| ECU_27 | ECU_INJ_DC_SEC | Injection dwell counter in seconds |
| ECU_28 | ECU_INJ_PULSE | Injection pulse |
| ECU_29 | ECU_TRIG1_ERR | Trigger 1 error |
| ECU_30 | ECU_FAULT_CODE | Fault code |
| ECU_31 | ECU_KNOCK_LEV1 | Knock level 1 |
| ECU_32 | ECU_KNOCK_LEV2 | Knock level 2 |
| ECU_33 | ECU_KNOCK_LEV3 | Knock level 3 |
| ECU_34 | ECU_KNOCK_LEV4 | Knock level 4 |
| ECU_35 | ECU_KNOCK_LEV5 | Knock level 5 |
| ECU_36 | ECU_KNOCK_LEV6 | Knock level 6 |
| ECU_37 | ECU_KNOCK_LEV7 | Knock level 7 |
| ECU_38 | ECU_KNOCK_LEV8 | Knock level 8 |
| ECU_39 | ECU_RPM_LIM | RPM limiter |
| ECU_40 | ECU_MAP_LIM | Manifold air pressure limiter |
| ECU_41 | ECU_SPEED_LIM | Speed limiter |
| ECU_42 | ECU_MAX_IGN | Maximum ignition |