

AiM InfoTech

HEWLAND – GCU

Release 1.00



1 Software configuration

This document explains how to connect third party CAN expansion modules to AiM devices CAN2 bus.

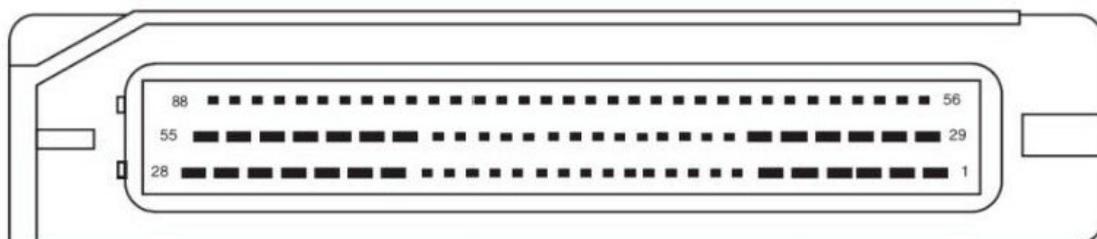
Hewland Gearbox Control units are expected to communicate with the AiM device using the standard “customer” CAN link as set by the manufacturer.

If any specific change is brought to the GCU CAN link setup, the driver here documented is not supposed to work.

Please note: In case this module is going to be used with different parameters, the user can set up a custom driver from the **CAN Protocols** section of the AiM configuration software Race Studio 3. Check the dedicated manual from the AiM website www.aim-sportline.com, Documentation – Firmware/Software area.

2 Wiring connection

These modules feature a bus communication protocol based on CAN, this data stream is accessible through the GCU main connector, here pictured (front view) with its connection table.



GCU connector pin	Function	AiM wire label (optional harness)
8	CAN-Lo	CAN2 -
9	CAN-Hi	CAN2 +

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AiM device configuration

Before connecting the kit to the AiM device set this up using AiM Race Studio software. The parameters to select in the device configuration are:

- ECU manufacturer: **HEWLAND**
- ECU Model: **GCU** (Only RS3 – CAN2 Stream)

If there is only the AiM device connected to this module, enable the CAN Bus 120 Ohm Resistor.

<input checked="" type="checkbox"/> Enable the CAN Bus 120 Ohm Resistor
<input type="checkbox"/> Silent on CAN Bus

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“HEWLAND – GCU” protocol

Channels received by AiM devices configured with “HEWLAND – GCU” protocol are:

CHANNEL NAME	FUNCTION
RPM	Engine speed
Upshift Rev Limit	Engine speed limiter upshift
Gear	Selected gear
Gear Display	Gear displayed
Speed	Vehicle speed
T SYS	Shift system temperature
ECU T	ECU temperature
P SYS	Air system pressure
PPS	Pedal position
TPS targ	Target throttle position
TPS	Throttle angle
Cut severity	Percent torque reduction
V GEAR	Gear voltage
V BATT	Battery voltage
Shift Diagnostic	Shift diagnostic code
Gear ratio	Gear ratio current gear
Mode Sw enum	Mode switch enumeration
Shift Status Bit	Contains the following status messages: 1 =Rampin3 2 =Rampin2 3 =Rampin1 4 =Full power retry 5 =Main cut 6 =Rampout2 7 =Rampout1



Status bit	8 =Shift direction (0 = downshift – 1 = upshift) Contains the following status messages: 6 =Compressor on 7 =Blip cut active 8 =Cut mode (0 = Fuel cuts – 1 = Ignition cuts)
Err Status Bit 1	Contains the following status messages: 1 =GCU B nmaxh 2 =GCU B nmax 8 =TPS sensor failure
Trasm Ctrl State	Transmission control state
GCU sens ERR2	Contains the following status messages: 2 =T sys 3 =Mode switch 4 =P clutch 5 =V gear 6 =P downshift 7 =P upshift 8 =P sys
GCU Sw State	Contains the following status messages: 5 =Clutch sw 6 =Detent sw 7 =Downshift sw 8 =Upshift sw
Shift Diag Code	Shift diagnostic code
GCU sens ERR1	Contains the following status messages: 1 =Cal pot 2 =P blipper