

LEM G3 – Subaru WRX V1-2 AdaptaLink

ALS2 – Board Revision V1.1

This AdaptaLink is designed to reduce installation effort by allowing an almost direct plug-in of a Link LEM^{G3} ECU to the following vehicles:

- Subaru RS Legacy (Single Turbo)
- Subaru WRX V1-2

The AdaptaLink must be configured for each application by fitting the jumpers in the correct locations. To do this, remove one end plate from the AdaptaLink enclosure then slide out the top cover. In some cases additional modifications are required.

Disclaimer

All care has been taken to ensure the pin outs and interconnections of this ECU AdaptaLink board are correct. However due to variations between vehicle models it is the installers responsibility to check wiring connections BEFORE installing the AdaptaLink. Link ElectroSystems will not be held responsible for any damage caused by the incorrect installation of this product.

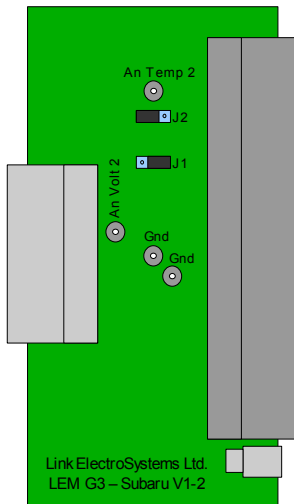
Warning

This AdaptaLink has been designed to be used with HIGH impedance (greater than 6 Ohms) injectors. Ballast resistors must be wired if low impedance injectors are to be used. Consult the LEM G3 Wiring and Installation manual for more information on injector wiring.

Limitations

- This AdaptaLink has been designed for use with manual transmissions only. Use of this AdaptaLink with an automatic transmission may cause unexpected transmission operation.
- As the LEM^{G3} has a limited number of inputs and outputs, not all of the sensors and actuators used by the factory ECU can be used. If a sensor/actuator is required that is not used wiring modification may be required.

Adapter Options



Intake Air Temperature (IAT)

The position of Jumper J2 determines what is connected to the ECU's An Temp 2 pin. It is highly recommended that an IAT sensor is connected to this pin. The following options exist for assisting the wiring of an IAT sensor:

1. External IAT Wiring – By placing Jumper J3 in the 'External IAT' position an IAT sensor can be wired to either the four pin expansion connector or the AdaptaLink boards 'An Temp 2' and 'Gnd' breakout pads.
2. Use of Air Flow Meter (AFM) Wiring – Placing Jumper J3 in the 'IAT on AFM Sig.' position allows the factory AFM's wiring to be used to bring IAT into the ECU. This saves running additional wiring through the firewall. Wire the IAT sensor to the AFM's signal and ground wires. Consult manufacturers wiring diagrams for information on the location of these wires in the AFM's connectors.. The AFM must remain unplugged when this option is used.

Digital Input Options

Jumper J1 selects what is connected to the ECU's DI1 (Aux4) pin. Set the jumper in the “DI1 = A/C In” position if the air conditioning is to be retained. Otherwise, fit the jumper in the “DI1 = Speed” position. This

will allow the ECU to measure vehicle speed for functions such as launch control and idle speed control.

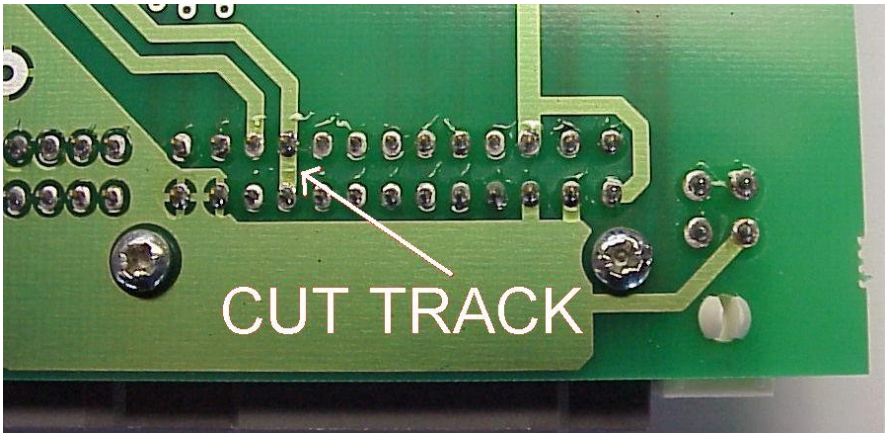
Known Issues

Since development of this AdaptaLink the following issues have been identified:

1. Engine Cooling Fan Comes on with key in ACC Position

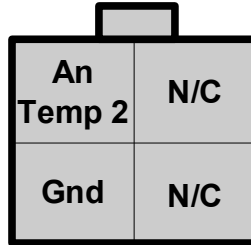
Some models (RS Legacy and WRX V1) have only one engine fan, other models have two. The AdaptaLink joins both fan control relays to one LEM G3 auxiliary output. Depending on the type of air conditioning controller fitted, this can cause both fans to come on when the key is in the ACC position.

If this problem occurs, remove the AdaptaLink from its enclosure and cut the bottom side track between the header pins where shown in the picture below. After doing this modification, use the auxiliary output 'Test On' function on the fan channel (Aux 5) to ensure at least one engine fan runs.



Expansion Connector Pin-out

The adapter boards white four pin connector provides a means of wiring IAT sensors without modifying the factory loom. A pre-built loom can be purchased from your Link dealer. The following pinout applies:



Note: To use this connector set jumper J2 to the 'External IAT' position.

Subaru WRX V1-2

LEM^{G3} Function	Sensor / Actuator	Note
Inj 1	Injectors 1 and 3	
Inj 2	Injectors 2 and 4	
Ign 1	Ignition Cylinder 1	
Ign 2	Ignition Cylinder 2	
Ign 3	Ignition Cylinder 3	
Ign 4	Ignition Cylinder 4	
Aux 1	ISC Open	
Aux 2	ISC Close	
Aux 3	Tachometer	
DI 1 / Aux 4	Speed or AC In	Select DI 1 input using J1
Aux 5	Fan Relay (Fans 1 and 2)	
Aux 6	Fuel Pump	
Aux 7	Waste-gate Solenoid	
Aux 8	A/C Out	
An Temp 1	Engine Coolant Temperature (ECT)	
An Temp 2	Intake Air Temp (IAT)	Set sensor location with J2
An Volt 1	Oxygen Sensor	
An Volt 2	N/C	Breakout pad on adapter board
An Load 3 (TPS)	Throttle Position	