G4 PLUG-IN ECU

SUBARU V5 WRX/STi
SUBARU V6 WRX/STi

INSTALLATION MANUAL

Board Version V1.0 - 4 July 2008

By Link ElectroSystems Ltd.

NOTICE

Due to frequent upgrades, PCLink is not distributed with new Link ECU's.

PCLink is available for free download at the following web site:

www.LinkECU.com

Should internet download not be practical, a copy of the latest version of PCLink on CD can be requested from your nearest Link Dealer.

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INTRODUCTION

Thank you for purchasing your Link ElectroSystems Ltd. Plug-In Engine Control Unit (ECU). Link G4 ECU's are an advanced, fully programmable microprocessor controlled Engine Management System.

The G4 software platform boasts an impressive list of features giving a new level of user adjustment. This flexibility allows the tuner to have complete control over the engine management system. G4 software employs high resolution fuel and ignition tables with configurable load and RPM centers. When coupled with up to six dimensional fuel and ignition mapping, barometric pressure compensation and intake air temperature correction this gives an unprecedented level of tuning accuracy. All G4 ECU's are in field upgradeable, there is no need to return the unit for software updates.

All Link G4 Plug-In Engine Management Systems are designed with flexibility and ease of installation in mind. Link Plug-In systems are deigned to replace the circuit board inside the factory ECU enclosure. This provides an invisible install that requires no modification to vehicle wiring and ECU mounting.

Link Engine Management Systems are designed with the final result in mind. Not only do they boast an impressive range of performance features, but are designed with a focus on safety, reliability and drive-ability. However, the ultimate success of your engine management upgrade is determined by how well the system is installed and tuned.

Installing and tuning any aftermarket engine management system is not to be taken lightly. G4 ECU's give the tuner the control & flexibility that only top after-market engine management systems in the world can provide. While every effort has been made to

keep G4 ECU's as user friendly as possible, it should be recognised that added features bring added complexity.

The complete setup of your ECU can be divided into two important tasks.

1. This manual covers the installation of your G4 ECU. While it is not strictly essential that this work is performed by an automotive electrician, the knowledge and tools available to these professionals makes it highly recommended. Regardless of who does the installation, it is of utmost importance that instructions provided in this manual are followed exactly throughout the installation.

2. Once the G4 ECU has been installed it will need to be tuned using a laptop computer with PCLink software. Information on the configuration and tuning of the G4 ECU is detailed in the online help section of PCLink. G4 ECU's are shipped pre-loaded with a base configuration that should be close enough to get most engines running after a few application specific adjustments have been made. While hearing the engine running on the new ECU for the first time is always a satisfying feeling, it is important to realise that the job is not complete. The amount of tuning performed and the experience of the tuner are the two most important factors in determining how happy you will be with your engine management system.

Should any issues arise during installation, the following options exist for technical support:

1. Contact your nearest Link dealer. A Link dealer list is available on our website.
2. Link website: www.LinkECU.com
3. Technical Support Email: tech@LinkECU.com

4. Online Discussion Board: Available from the Link website.

The majority of questions received by the technical support team are clearly answered in the manuals. To speed up your technical inquiry please consult the manuals to make sure that your question has not already been answered.

SAFETY FIRST

Your Link Plug-In ECU is designed to enhance the performance of your vehicle. However in all cases, your vehicle must be operated in a safe manner. Do not tune your vehicle while operating it on public roads. Obey road rules at all times.

Failure to follow all installation and operating instructions may result in damage to the Link ECU, personal injury, or harm to property.

DISCLAIMER

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

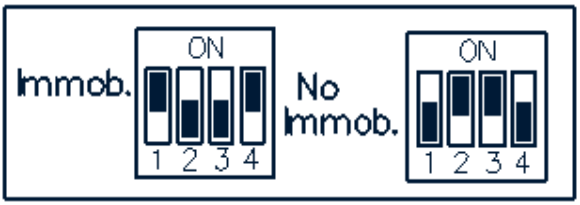
PRE-INSTALLATION

Before installing the ECU into the vehicle some pre-installation checks must be performed.

TRIGGER SIGNAL OPTIONS

Some models are wired with their trigger (engine position) signals wired in opposite polarity to other models. This usually depends on if the vehicle was shipped with a factory fitted immobiliser. To allow for this four dip switches have been provided on the ECU.

Set the DIP switches according to the diagram below:



INJECTOR IMPEDANCE

The Subaru V5-6 G4 Plug-In ECU is NOT designed to be used directly with low impedance injectors.

All models this ECU is designed for are fitted with high impedance injectors from factory. This ECU 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. This means that the ECU is plug-in compatible with factory fitted injectors combinations on all models. However if fitting low impedance injectors then ballast resistors must be wired. Contact your nearest Link dealer to purchase a ballast resistor pack if required.

INSTALLATION

The following sections describe physical installation of the ECU and required sensors. It is recommended that your Link ECU is installed and tuned by a professional. This will ensure you get the most out of your Link ECU and minimise the possibility of damage to the ECU or vehicle. G4 ECU's are sophisticated high end system and require significant knowledge of engine management to tune.

ECU HANDLING PROCEDURES

WARNING

The following installation process will require handling of both the Link ECU and factory ECU. Both of these are highly sensitive to electrostatic discharge and are easily damaged. Follow the anti-static precautions given in this manual carefully to avoid damaging electronic components. Warranty claims for ECU's damaged by electrostatic discharge will NOT be accepted.

ANTI-STATIC HANDLING GUIDELINES

Your body builds up an electrical charge as you move around. This charge can reach very high voltages. Whenever given the opportunity this energy will attempt to discharge (usually through your finger tips!). This can be fatal to most electronic components. Most people have experienced an electrostatic discharge when they step out of their car or touch a metal bench top.

The following guidelines describe precautions that can be taken to reduce the possibility of damaging your ECU:

1. Work only on a conductive surface. A clean steel bench is suitable.
2. Always wear a wrist strap that is electrically connected to the conductive working surface.
3. Touch the working surface regularly.
4. Do NOT touch components on the circuit board.
5. Where possible, only handle the ECU by its plastic header.
6. Do NOT carry the ECU around without static packaging.
7. Do NOT touch the bare terminals in the ECU header.

Observing the above procedures will minimise the chance of damaging the ECU. Note that failure due to static damage often does not appear until well after it was caused.

FITTING THE ECU

The following steps outline the installation procedure:

1. Remove the factory ECU from the vehicle: **Ensure the key is in the OFF position.** The factory ECU is located under a steel cover on the passengers side floor (below the passengers feet). Lift the carpet, remove the cover panel. Unplug the wiring harness from the factory ECU. Remove the 6mm bolts (10mm socket) that retain the ECU and remove the ECU from the vehicle. DO NOT touch the exposed pins in the factory ECU connector.
2. Remove the factory ECU's circuit board from its enclosure: Ensure you are following the given anti-static guidelines and ARE WEARING A CONDUCTIVE WRIST STRAP connected to a conductive working surface. Remove the top and cover from the ECU enclosure by removing the side retaining screws. Remove the circuit board by removing the retaining screws. Hold it only by the plastic header and place it aside.
3. Fit the Link Plug-In ECU: Remove the ECU from its packaging and place it immediately in the factory enclosure. Place the factory ECU in the packaging your Link ECU came in for its protection.
4. If the ECU's USB tuning cable is to be left permanently connected, a slot will need to be cut in the top cover. The best place to do this is usually beside the factory header.
5. Reassemble the enclosure and fit the ECU back to the vehicle.
6. Connect the ECU to the factory wiring loom.

7. Do NOT attempt to start the vehicle. Proceed to read through the remaining sections of this manual first.

FITTING ADDITIONAL SENSORS

G4 Plug-In ECU's offer various options for the installation of additional sensors and devices. As a minimum it is recommended that all ECU's are installed with a Manifold Absolute Pressure (MAP) sensor and Intake Air Temperature (IAT) sensor. These parts can be purchased if required from your nearest Link dealer. Additional details on wiring of various sensors can be found in any

MAP SENSOR

It is important that the pressure source for a MAP sensor be taken from a stable pressure source after the throttle body. It is common to 'T' into the fuel pressure regulators pressure signal. Do NOT share this signal with other devices such as boost gauges or blow off valves.

The Link G4 Subaru V5-6 Plug-In ECU supports several options for fitting of a MAP sensor. Any one of the following options can be used:

1. **Factory MAP Sensor** – From factory, all models supported by this ECU are fitted with a factory MAP sensor. This sensor is rated to 1.2 Bar of boost (approx 17.5 psi). The factory MAP sensor is wired to An Volt 1.
2. **Factory MAP Sensor Upgrade** – The factory MAP sensor can be upgraded by simply replacing the factory MAP sensor. Contact your nearest Link dealer for upgrade options.
3. **MAP Through Expansion Connector** - The expansion connector provides power ground and analog channels for the connection of a MAP sensor.

Make sure that the correct An Volt channel has been selected as

MAP sensor in PCLink and a MAP calibration has been performed before attempting to start the vehicle.

IAT SENSOR

It is highly recommended that an IAT sensor be fitted in all applications to provide an input for correction of fuel and ignition based on the engines air charge temperature.

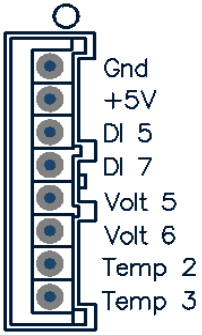
An IAT sensor should be fitted in the intake system in a location that accurately represents intake temperature. The most common location is just prior to the throttle body. Installing in the manifold is not recommended due to heat soak issues. A fast response sensor must be used in all forced induction applications.

From factory, models supported by the Link G4 Subaru V5-6 Plug-In ECU are not fitted with an IAT sensor. No suitable wiring is run into the engine bay therefore the ECU is designed to have an IAT sensor wired to the Expansion Connector.

EXPANSION CONNECTOR

The expansion connector is provided to allow easy connection of additional ECU inputs. No additional outputs are provided on the expansion connector.

The following expansion connector outputs are provided:



- **Gnd** – Sensor Ground Only
- **+5V Out** – Supply for MAP sensor
- **DI5** – Digital Input for switching signal
- **DI7** - N/C
- **An Volt 5 / An Volt 6** – Analog 0-5V input for external MAP sensor or other analog signal such as wideband O2 or a boost control knob.

- **An Temp 2 / An Temp 3** – Temperature channel for additional thermistor temp sensor (such as IAT sensor). Wire sensor between this pin and Gnd pin.

Important points when wiring to the expansion connector:

- Use only the supplied expansion loom.
- Do not overload the +5V Out pin. Although this is protected against ECU damage the +5V out signal also provides power for other sensors.
- **Do not connect the ground pin to chassis ground**. This could cause ground loops and introduce unnecessary interference. Use this pin only to ground external sensors that are isolated from chassis ground.

PC TUNING

Although Link ECU's come with base settings that allow the engine to be started, ALL aftermarket ECU's must be professionally tuned immediately after installation. Failing to have the ECU correctly tuned for your vehicle could result in engine damage or violation of emissions laws.

Link ECU's are tuned using a windows based PC/laptop running PCLink.

Due to frequent upgrades PCLink is not distributed with new ECU's. PCLink Can be downloaded free of charge from:

www.LinkECU.com

Should download of PCLink be impractical an installation CD can be purchased at minimal charge from your nearest Link dealer.

INSTALLING USB DRIVERS

WARNING !!!

The G4 ECU has on board USB.

BEFORE connecting the ECU to your laptop, the USB drivers must be installed. Failure to install the drivers on your laptop first may result in windows assigning incorrect drivers. These drivers will not work with the G4 ECU and are difficult to uninstall.

Before connecting the ECU to your laptop or PC, the ECU USB drivers must be installed. These drivers are installed as part of PCLink installation as described in the following section.

INSTALLING PCLINK

INSTALLING FROM THE WEB

Go to the Link website and navigate to the downloads and software updates section.

1. Download the latest version of PCLink. When prompted to run or save the file, select save. It is recommended to save this file on the desktop.
2. Double click the saved file and follow on screen instructions.
3. When prompted to install USB drivers, select yes. This may take some time.
4. When installed, open PCLink by double clicking on the icon that has been placed on the desktop.

INSTALLING FROM A CD

Insert the PCLink CD into you computer's CD ROM.

1. Open 'My Computer'
2. Double click your CD drive.
3. Double click the file labelled PCLinkSetup.exe (or similar name).
4. Follow the on screen instructions.
5. When prompted to install USB drivers, select yes. This may take some time.
6. When installed, open PCLink by double clicking on the icon that has been placed on the desktop.

COMMUNICATING WITH THE ECU

PCLink must be installed on a Windows based laptop/notebook before any adjustments or tuning can be performed. The latest version of PCLink will be required to tune your ECU and is freely available for download from:

www.LinkECU.com

Link G4 ECU's have on board USB support. PCLink Installation will also install the required USB driver software. **You MUST do a complete install of PCLink before connecting the ECU to the PC for the first time.**

After PCLink installation, you will be able to connect to the Link ECU to the laptop to perform setup and tuning work.

1. Connect the ECU to your laptop using a Link G4 ECU USB Cable. If not supplied with the ECU, these can be purchased from a Link dealer. No other adapter or cabling is required. Connect the cable to the connector labelled USB (sometimes marked with an orange O'ring)
2. If this is the first time you have connect a G4 USB ECU to you laptop follow the driver installation instructions that appear. When prompted if you want to install drivers select 'Continue Anyway'.
3. Start PCLink by double clicking on the PCLink icon on the windows desktop.
4. Switch the key to the ON position. This will provide power to the ECU.
5. In PCLink, under the 'Options' menu, select 'Connection'. The connection options dialogue will open. Select the correct COM Port number from the drop down list or select Auto for automatic com port detection.

6. PCLink offers both mouse and keyboard control. To establish a connection between the PC and ECU using the mouse, click the ‘L’ icon located near the top centre of the PCLink screen. Alternatively, press F3. The same process can be used to disconnect. If a successful connection is established, PCLink will download settings from the ECU, otherwise you will be warned that an error has occurred.

7. Make sure the connection shows “ONLINE” in the top right corner of PCLink. The logo should also be spinning in the top right corner.

8. To permanently STORE any changes made to the ECU click on the 'S' icon near the top centre of the screen or press F4. If this is not done before turning the ECU's power off all changes made will be lost.

If connection can not be established, contact one of the support options given at the beginning of this manual.

Help on individual tuning functions is available through the PCLink on line help (Press F1, or right click on any item and select 'What's This?').

INITIAL ADJUSTMENTS

It is important that the procedures described in the following sections are performed before any attempt to start the engine is made.

BASE CONFIGURATION

All G4 Plug-In ECU's are shipped with base configuration settings. Note that these are provided to reduce initial setup and tuning times. They are NOT recommended tuning values. PCLink includes base configurations for various models. Download the appropriate base configuration into your ECU with PCLink by connecting to the ECU (described in the Connecting To PCLink section of this manual), then selecting 'Open' under the 'File' menu. Select the appropriate .pcl file and then select 'Open'. Downloading large configuration files can take up to a few minutes. Be patient and acknowledge any messages PCLink shows.

MAP SENSOR CALIBRATION

The following procedure must be performed before tuning to ensure that the MAP Sensor is correctly calibrated. This is done by calibrating the MAP sensor to the ECU's internal Barometric Absolute Pressure (BAP) sensor. The BAP sensor is calibrated before the ECU is shipped. To calibrate the MAP sensor:

1. Connect a laptop/notebook PC to the ECU and connect to the ECU using PCLink.
2. Under the Analog Channels menu, select the An Volt channel that has been wired to the MAP sensor. Select the correct MAP Sensor Type.
3. Under the 'Options' menu, select 'MAP sensor calibration'.

4. Follow the on screen instructions.
5. Select the 'Analog Inputs' tab in the runtime values section of PCLink (lower part of the screen).
6. Compare the MAP and BAP values and ensure they have a similar reading (within 1 kPa).
7. Perform a 'Store' by clicking on the S button (top center of screen) or press F4.

TPS CALIBRATION

The Throttle Position Sensor (TPS) is used by the ECU to calculate various engine management parameters used by functions such as idle speed control,acceleration enrichment and motorsport features. It is important that the ECU knows when the throttle is open and closed (or part way in between). The following procedure calibrates the ECU to match the TPS:

1. Connect a laptop/notebook PC to the ECU and connect to the ECU using PCLink.
2. Under the Analog Channels menu, ensure that An Volt 3 is set to 'TPS (Main)'.
3. Under the 'Options' menu, select 'TPS calibration'.
4. Follow the on screen instructions.
5. Select the 'Analog Inputs' tab in the runtime values section of PCLink (lower part of the screen).
6. Ensure the Throttle Position value reads 0% when the throttle is closed and 100% when fully open.
8. Perform a 'Store' by clicking on the S button (top centre of screen) or press F4.

IAT SENSOR SELECTION

This section only applies when an Intake Air Temperature (IAT) sensor has been wired and fitted to the intake system. It is important that the ECU is calibrated to match the sensor installed in the engine. This procedure is as simple as selecting the correct sensor type as follows:

1. Connect a laptop/notebook PC to the ECU and connect to the ECU using PCLink.
2. Click on 'Analogue Channel' in the configuration tree
3. Select the An Temp channel the sensor has been wired to.
4. Ensure that channel (and only that channel) is set to 'Inlet Air Temperature'.
5. Select the correct 'Temp Sensor Type'.
6. Select the 'Analog Inputs' tab in the runtime values section of PCLink (lower part of the screen).
7. Ensure that IAT reads the correct temperature.
8. Perform a 'Store' by clicking on the S button (top centre of screen) or press F4.

INPUT AND OUTPUT SETUP

As the Link G4 Subaru V5-6 Plug-In ECU is designed to run several models there are a few items that must be setup to make the ECU specific to your model. This is due to the same ECU header pin being used for different functions between models.

Appendix A in the back of this manual gives a list of the functions of each channel based on vehicle model.

It is the tuners responsibility to make sure that the following

channels are setup up correctly for the vehicle model the ECU is fitted to:

- All Auxiliary Output Channels – Use the 'Test On' and 'Test PWM' (at 10 Hz) functions to test the wiring of channels.
- Auxiliary Output – Fuel Channels 5 and 6 - Use the 'Test On' and 'Test PWM' (at 10 Hz) functions to test the wiring of channels.
- All Digital Inputs – Look at the Digital Inputs runtime values (lower section of the PCLink screen) to confirm each channels operation.
- All Analog Volt Inputs – Look at the Analog Inputs runtime values (lower section of the PCLink screen) to confirm each channels operation.
- All Temperature Inputs – Look at the Analog Inputs runtime values (lower section of the PCLink screen) to confirm each channels operation.

PRE-STARTUP

After performing all steps discussed in previous sections of this manual, you should be ready to start the engine. This section discusses steps required to run the engine. It is the tuners responsibility to ensure the engine mechanically ready to run and that no safety hazards exist.

Should the engine not start, do not crank the motor over endlessly. Stop and diagnose the problem or seek professional help.

For further help on any of the settings discussed in the following sections, consult the online Help in PCLink. Online help can be invoked by pressing F1, or right clicking any item and selecting 'What's this?'.

PRE-START SETUP

To avoid potential engine damage and wasted time, the adjustments presented in the following sections **must** be made before attempting to start the engine.

1. Ensure the ECU and all associated components are connected and correctly wired/installed.
2. Fully charge the vehicle's battery, as the engine will be required to be cranked during the setup procedure.
3. Check all oil and water levels are correct.

TRIGGER CALIBRATION

Trigger Calibration is the process of calibrating the ECU to actual engine position. This procedure is required for all applications to ensure actual ignition timing is exactly as expected.

1. Connect the ECU to PCLink.
2. Select 'Fuel', then 'Fuel Setup':
    a. Set ‘Injection Mode’ to OFF. This will prevent the engine from trying to start while the triggers are calibrated.
    b. Perform a Store (press F4) to make sure fuelling is not re-enabled if power to the ECU is lost.
3. Click on ‘Triggers’ then ‘Calibrate Triggers’.
4. Perform the correct trigger calibration procedure as described in the PCLink online help (Press F1).
5. Set the 'Injection Mode' back to 'Sequential' and perform a Store by pressing F4.

Note that trigger calibration must be performed again once the engine is running. Due to the acceleration and deceleration of the crankshaft at low speeds, an inaccurate measurement of engine timing is usually made. Also it is often harder to see timing marks with a timing light at slow engine speeds. Trigger calibration should be checked again at between 2000-4000 RPM where engine speed is stable and a more consistent timing reading can be obtained.

FIRST TIME STARTUP

After performing steps described in previous sections of this manual you should now have the ECU in a state where the engine is ready to run.

This section describes important tuning adjustments that should be made once the engine is running.

ESSENTIAL TUNING ADJUSTMENTS

MASTER

Master is the ECU's overall fuel trim number or “coarse adjustment” it is important that this number is correct to prevent the numbers in the main fuel table running out of range. This setting also provides a fast way to enrich or lean the engine over the entire range.

Master is found in the Fuel->Fuel Setup menu and should be set so that the numbers in the middle of the fuel table end up around a value of 50. This is to allow sufficient span of the numbers in the main fuel table. A typical value for Master is between 10 to 15 ms.

INJECTOR VOLTAGE (DEAD TIME) CORRECTION

There is always a delay between the injector being energised and the injector actually opening. Likewise, there is a small delay between the injector being de-energised and the injector closing. The opening time is considerably longer than the closing time, however the overall result is that less fuel will flow for a given pulse width than would be expected with an 'ideal injector'. To compensate for this the injector pulse widths are increased to compensate for this 'dead-time'. The dead-time for a given injector is a function of the battery voltage, differential fuel pressure and the type of injector driver (saturated or peak and

hold). A typical dead-time at 3 Bar differential fuel pressure and 14 volts is just under 1ms (ms = millisecond = 1 thousandth of a second).

The injector dead-time table allows the dead- time for different battery voltages to be entered. The values represent the dead-time in milliseconds. These should increase with falling system voltage.

A professional tuner will know how to correctly set injector dead time. It is essential that this value is correct to ensure stable fuel mixture over the entire battery voltage range.

NOTE: any change to the fuel pressure or injectors will require a recalibration of the injector dead-times.

APPENDIX A – PIN FUNCTIONS

	Subaru V5-6 WRX/STi
Auxiliary Outputs	
Aux 1	Fuel Pump Relay
Aux 2	Wastegate Solenoid
Aux 3	A/C Out
Aux 4	Tacho
Aux 5	Idle Stepper Motor
Aux 6	Idle Stepper Motor
Aux 7	Idle Stepper Motor
Aux 8	Idle Stepper Motor
Aux – Ignition Outputs	
Aux – Ign 3	Fan Relay 1
Aux – Ign 4	Fan Relay 2
Aux – Injection Outputs	
Aux - Inj 5	CE Light
Aux - Inj 6	Main Relay (ECU Hold Power)
Analog Channels	
An Volt 1	Factory MAP Sensor
An Volt 2	AFM Signal
An Volt 3	TPS (Main)
An Volt 4	Oxygen Sensor Signal
An Volt 5	Expansion Connector
An Volt 6	Expansion Connector
An Temp 1	ECT
An Temp 2	Expansion Connector
An Temp 3	Expansion Connector
Digital Inputs	
DI 1	Start Signal
DI 2	Power Steer Signal
DI 3	Vehicle Speed
DI 4	Ignition Switch
DI 5	Expansion Connector
DI 6	A/C In

APPENDIX B – PINOUT

B134

9	8	7	6	5	4	3	2	1
18	17	16	15	14	13	12	11	10
25	24	23			22	21	20	19
32	31	30			29	28	27	26

B135

9	8	7	6	5	4	3	2	1
18	17	16	15	14	13	12	11	10
25	24	23			22	21	20	19
32	31	30			29	28	27	26

B136

9	8	7	6	5	4	3	2	1
18	17	16	15	14	13	12	11	10
25	24	23			22	21	20	19
32	31	30			29	28	27	26

Pin	ECU Function	Pin	ECU Function
B134-1	Aux 1	B136-20	An Volt 3
B134-4	Aux – Ign 3	B136-21	An Volt 4
B134-5	Aux 6	B136-25	DI 4
B134-6	Aux 5	B136-28	An Temp 1
B134-7	Ignition 1		
B134-13	Aux – Ign 4		
B134-14	Aux 7		
B134-15	Aux 8		
B134-16	Ignition 2		
B134-18	Injection 4	**Other Connections**	
B134-19	Aux 2		
B134-21	Aux 1	Expansion 1	Signal Ground
B134-22	Aux 3	Expansion 2	+5V Out
B134-25	Injection 3	Expansion 3	DI 5
B134-28	Aux – Inj 5	Expansion 4	N/C
B134-31	Injection 1	Expansion 5	An Volt 5
B134-32	Injection 2	Expansion 6	An Volt 6
B135-1	DI 2	Expansion 7	An Temp 2
B135-2	DI 1	Expansion 8	An Temp 3
B135-11	DI 6		
B135-14	Aux 4		
B135-26	DI 3		
B136-1	An Volt 2		
B136-7	An Volt 1		

APPENDIX C – KNOWN ISSUES

Current known issues with the Link G4 Subaru V5-6 Plug-In ECU:

- There are currently no known issues.

APPENDIX D – WARRANTY

Link ElectroSystems Ltd. Warranty Statement

Effective 5pm, April 5th, 1992

All products manufactured or distributed by Link ElectroSystems Ltd. Are subject to the following, and only the following, LIMITED EXPRESS WARRANTIES, and no others

For a period of one (1) year from and after the date of purchase of a new Link ElectroSystems Ltd. Product, Link ElectroSystems Ltd. Warranties and guarantees only to the original purchaser / user that such a product shall be free from defects of materials and workmanship in the manufacturing process. A product claimed to be defective must be returned to the place of purchase. Link ElectroSystems Ltd., at its sole option, shall replace the defective product with a comparable new product or repair the defective product. This expressive warranty shall be inapplicable to any product not properly installed and properly used by the purchaser – user or to any product damaged or impaired by external forces. This is to the extent of warranties available on this product. Link ElectroSystems Ltd. Shall have no liability whatsoever for consequential damages following from the use of any defective product or by reason of the failure of any product. Link ElectroSystems Ltd. Specifically disclaims and disavows all other warranties, express or implied including, without limitation, all warranties of fitness for a particular purpose (except for those which apply to product or part thereof that is used or bought for use primarily for personal, family or household purposes), warranties of description, warranties of merchantability, trade usage or warranties of trade usage.

Link ElectroSystems Ltd. License Agreement

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