



# Elite 2000 Plug 'n' Play Adaptor Harness HT-141249

## Supported Models

Toyota LandCruiser FJZ80 MY95-97 1FZ-FE (ADM, JDM, USDM)  
Lexus LX450 1FZ-FE (ADM, JDM, USDM)

## Package Contents

THIS TOYOTA LANDCRUISER MY95-97 PACKAGE CONTAINS THE FOLLOWING:

- TOYOTA LANDCRUISER 1FZ-FE MY95-97 ELITE 2000 PLUG 'N' PLAY ADAPTOR (HT-141249)
- ELITE SERIES PLUG 'N' PLAY ADAPTOR HARNESS (HT-130201)
- HALTECH AIR TEMPERATURE SENSOR (HT-010200)



# Application Notes

THIS TOYOTA LANDCRUISER MY95-97 ELITE 2000 PLUG 'N' PLAY ADAPTOR HARNESS IS SUITABLE FOR USE WITH A HALTECH **ELITE 2000 & ELITE 2500** ECU ONLY.

ENSURE THAT THE CORRECT BASEMAP IS LOADED BEFORE STARTING THE VEHICLE.

THE BASEMAP IS ONLY FOR USE AS A STARTING POINT AND THE ECU WILL REQUIRE APPROPRIATE TUNING.

**HALTECH WILL NOT BE HELD RESPONSIBLE FOR ENGINE DAMAGE DUE TO THE IMPROPER USE OF BASEMAPS.**

THE 16 PIN AUXILIARY CONNECTOR PROVIDES A NUMBER OF ADDITIONAL INPUT/OUTPUT LINKS TO THE HALTECH ELITE ECU. THIS KIT IS SUPPLIED WITH SPARE PINS FOR USE WITH THE 16 PIN AUXILIARY CONNECTOR.

**AN APPROPRIATE CRIMPING TOOL IS RECOMMENDED TO USE THE 16 PIN AUXILIARY CONNECTOR.**

A CRIMPING TOOL KIT (PART # HT-070300) CAN BE PURCHASED AT [WWW.HALTECH.COM](http://WWW.HALTECH.COM)

**AFTER THE INSTALLATION OF THIS PLUG 'N' PLAY KIT, FACTORY PANELS MAY BE RE-INSTALLED.**

## Elite 2000 Basemap

MAKE	MODEL	CODE	ENGINE	BASEMAP
TOYOTA	LANDCRUISER	FJZ80	1FZ-FE	HT-141249 - Toyota Landcruiser MY95-97 1FZ-FE.e2000

## Basemap Notes

THE BASEMAPS SUPPLIED WITH THIS PRODUCT HAVE BEEN SETUP USING THE ELITE ECU INTERNAL 3 BAR MAP SENSOR.

PLEASE CONNECT THE ELITE ECU INTERNAL MAP SENSOR TO THE INTAKE MANIFOLD PRIOR TO STARTING THE VEHICLE.

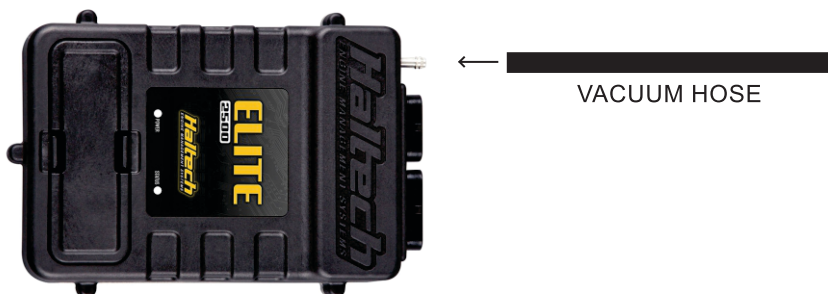


Figure 1 - Elite ECU internal MAP sensor

# Stepper Motor Calibration

THE TOYOTA LANDCRUISER USES A 6 WIRE STEPPER MOTOR FOR IDLE SPEED CONTROL. WITH THE HALTECH ECU INSTALLED, THE STEPPER MOTOR WILL AUTOMATICALLY CALIBRATE ON ECU POWER UP. THIS PROCESS MAY TAKE UP TO 4 SECONDS. FAILURE TO WAIT 4 SECONDS PRIOR TO STARTING THE VEHICLE MAY RESULT IN A HIGHER THAN NORMAL IDLE RPM.

NOTE: THE IDLE RPM WILL NORMALISE ONCE THE STEPPER MOTOR FINISHES ITS CALIBRATION.

## ECU Location

THE FACTORY TOYOTA LANDCRUISER MY95-97 ECU IS LOCATED BEHIND THE PASSENGER SIDE GLOVE COMPARTMENT (RIGHT-HAND DRIVE MODELS). REMOVING THE SPEAKER SURROUND WILL ALLOW FOR THE INSTALLATION OF THE ECU AND THE ADAPTOR HARNESS. ALL FACTORY PANELS MAY BE RE-USED AFTER INSTALLATION.

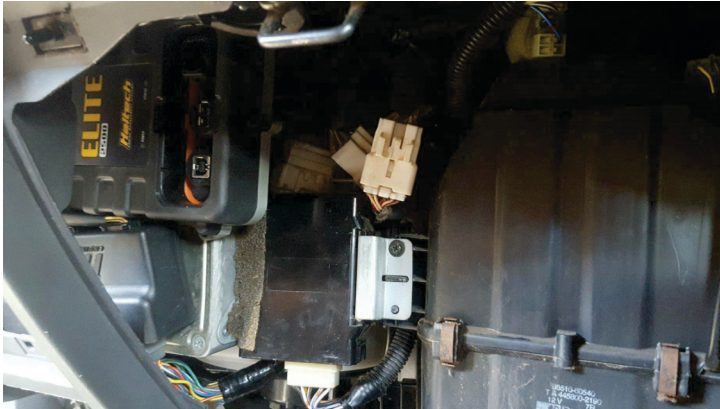


Figure 2 - Factory ECU located behind glove compartment

# Air Temperature Sensor

An air temperature sensor is a required sensor used in Volumetric Efficiency (VE) tuning to compensate for changes in air density due to air temperature. Cold air has a higher density than warm air and therefore requires a greater volume of fuel to maintain the same air/fuel ratio.

The Haltech ECU can automatically compensate the fuel delivery for changes in air density based on temperature using the signal received from the air temperature sensor.

On many vehicles the OEM air temperature sensor is located either within the mass airflow sensor or molded into the intake air manifold, however in performance applications the airflow sensor and air intake piping are often modified, removed or replaced. For this reason an air temperature sensor (HT-010200) is provided for use as a substitute to the factory air temperature sensor.

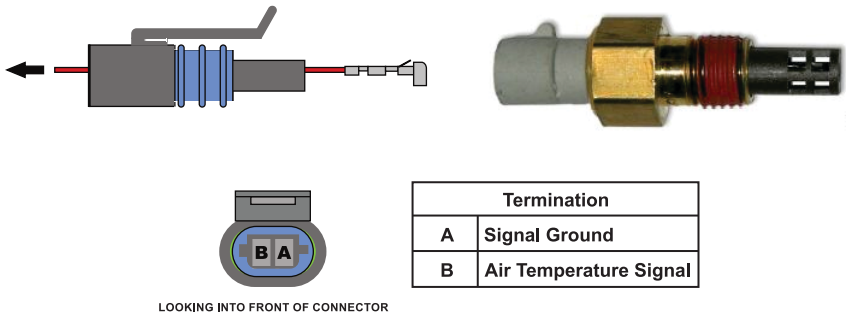
This sensor should be mounted to provide the best representation of the actual temperature of the air entering the combustion chamber, i.e. after any turbocharger, supercharger and intercooler.

The sensor needs to be in the moving air stream to give fast response times and reduce heat soak effects. Be aware in some situations, mounting the sensor into the inlet manifold (especially at the rear) may cause heat soak problems (where the sensor reads the temperature of the manifold itself rather than the air that is moving through the manifold into the engine).

Once a suitable position has been located for the air temperature sensor to be installed, a hole should be drilled and tapped to accept the sensor. The intake manifold or inlet piping should be removed from the engine before this is done to prevent any metal shavings or swarf entering the engine.

This package includes an air temperature sensor (HT-010200). This air temperature sensor should be installed by utilising an auxiliary Analogue Voltage Input (AVI) and signal ground located on the 16 pin auxiliary connector.

Please refer to the auxiliary connector pinout table and sensor wiring diagram below.



LOOKING INTO FRONT OF CONNECTOR

**INSERT WIRE THROUGH PLUG, THEN CRIMP THE PIN INTO THE WIRE AND DRAW BACK TO LOCK**

**Figure 3 - Air Temperature Sensor wiring**

# Auxiliary Connector

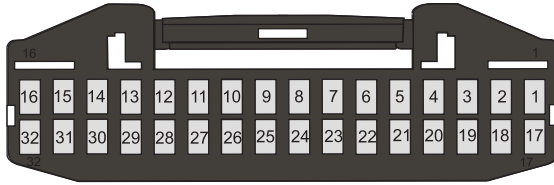


AUXILIARY CONNECTOR (16 PIN)  
REAR VIEW (WIRE SIDE)

An auxiliary connector allows easy connection of additional ECU inputs and outputs.  
Please see pinout information below for spare inputs and outputs available to this application.

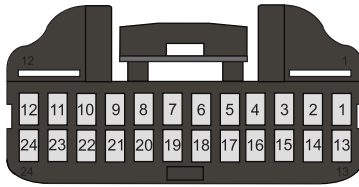
Position (16 Pin Plug)	Connection	Function	Notes
1	From Haltech ECU (A9)	+5V	+5V DC Sensor Supply (50mA Max)
2	From Haltech ECU (A16)	AVI 2	Spare Analogue Voltage Input
3	From Haltech ECU (A12)	AVI 6	Spare Analogue Voltage Input
4	From Haltech ECU (B14, B15, B16)	SIGNAL GROUND	Signal Ground For Input Sensors
5	From Haltech ECU (B17)	IGN 7	Spare Output
6	From Haltech ECU (B18)	IGN 8	Spare Output
7	From Haltech ECU (B10)	SPI 3	Spare SPI (Optional Flex Fuel Input)
8	From Haltech ECU (A26)	+12V (INJ)	+12V Supply for Relays and Solenoids (500mA Max)
9	From Haltech ECU (A9)	+5V	+5V DC Sensor Supply (50mA Max)
10	From Haltech ECU (B23)	CAN H	CAN High
11	From Haltech ECU (B24)	CAN L	CAN Low
12	From Haltech ECU (B14, B15, B16)	SIGNAL GROUND	Signal Ground For Input Sensors
13	From Haltech ECU (A29)	INJ 7	Spare Output
14	From Haltech ECU (A30)	INJ 8	Spare Output
15	From Haltech ECU (B7)	SPI 4	Spare Synchronised Pulsed Input
16	From Haltech ECU (A26)	+12V (INJ)	+12V Supply for Relays and Solenoids (500mA Max)

# Main Connectors



CONNECTOR (32 PIN)  
REAR VIEW (WIRE SIDE)

Position (32 Pin Plug)	ECU Connector (34 Pin Plug)	Function	Description
1	A1	DPO 2	Fuel Cut Output
2	A2	AVI 4	Spare Analogue Voltage Input
3	A3	IGN 1	Ignition (Distributor)
4	A4	IGN 2	Spare Output
5	A5	IGN 3	Spare Output
6	A6	IGN 4	Spare Output
7	A7	IGN 5	Spare Output
8	A8	IGN 6	Spare Output
9	A9	+5V	+5V DC Sensor Supply
10	A10	BATTERY GROUND	Battery Negative
11	A11	BATTERY GROUND	Battery Negative
12	A12	+8V	Not Used
13	A13	IGNITION INPUT	Ignition Switch
14	A14	AVI 10	Throttle Position Sensor
15	A15	AVI 9	A/C Request
16	A16	AVI 2	Spare Analogue Voltage Input
17	A17	AVI 3	Spare Analogue Voltage Input
18	A18	DPO 1	Check Engine Light
19	A19	INJ 1	Injector #1
20	A20	INJ 2	Injector #2
21	A21	INJ 3	Injector #3
22	A22	INJ 4	Injector #4
23	A23	DPO 3	Fuel Transfer Pump/Solenoid (Sub Tank)
24	A24	DPO 5	Fuel Pump Relay
25	A25	DPO 6	-
26	A26	+12V (INJ)	Fused Power
27	A27	INJ 5	Injector #5
28	A28	INJ 6	Injector #6
29	A31	STEP1 P1	Idle Speed Control Valve 1
30	A32	STEP2 P2	Idle Speed Control Valve 3
31	A33	STEP3 P3	Idle Speed Control Valve 2
32	A34	STEP4 P4	Idle Speed Control Valve 4



CONNECTOR (24 PIN)  
REAR VIEW (WIRE SIDE)

Position (24 Pin Plug)	ECU Connector (26 Pin Plug)	Function	Description
1	B1	TRIGGER	Crankshaft Position Sensor
2	B2	HOME	Camshaft Position Sensor
3	B3	AVI 7	Air Temperature Sensor
4	B4	AVI 8	Coolant Temperature Sensor
5	B5	TRIGGER -	Not Used
6	B6	HOME -	Not Used
7	B7	SPI 4	Spare Synchronised Pulsed Input
8	B8	SPI 1	Main Fuel Tank Level Switch
9	B9	SPI 2	Sub Fuel Tank Level Switch
10	B10	SPI 3	Spare SPI (Optional Flex Fuel Input)
11	B11	+12V (ECU)	Fused Power
12	B12	AVI 6	Spare Analogue Voltage Input
13	B13	AVI 1	Fuel Transfer Request Switch
14	B14	SIGNAL GROUND	Signal Ground for Input Sensors
15	B15	SIGNAL GROUND	Signal Ground for Input Sensors
16	B16	SIGNAL GROUND	Signal Ground for Input Sensors
17	B23	CAN HIGH	CAN High
18	B24	CAN LOW	CAN Low
19	B19	DPO 4	Fuel Transfer Switch Light
20	B20	AVI 5	Mass Air Flow Signal
21	B21	KNOCK 1	Knock Sensor 1 Signal
22	B22	KNOCK 2	Knock Sensor 2 Signal
23	B25	DBW 1	Available to Elite 2500 Only
24	B26	DBW 2	Available to Elite 2500 Only

## WARNING - HALTECH OFF-ROAD USAGE POLICY

It is unlawful to tamper with your vehicle's emissions equipment.

Haltech products are designed and sold for sanctioned off-road/competition non-emissions controlled vehicles only. Using Haltech products for street/road use on public roads is prohibited by law. It is the responsibility of the installer and/or user of this product to ensure compliance with all applicable local and federal laws and regulations. Please check with your local vehicle authority before using any Haltech product

## INSTALLATION OF HALTECH PRODUCTS

No responsibility whatsoever is accepted by Haltech for the fitment of Haltech Products. The onus is clearly on the installer to ensure that both their knowledge and the parts selected are correct for that particular application. Any damage to parts or consequential damage or costs resulting from the incorrect installation of Haltech products are totally the responsibility of the installer.

Always disconnect the battery when doing electrical work on your vehicle. Avoid sparks, open flames or use of electrical devices near flammable substances. Do not run the engine with a battery charger connected as this could damage the ECU and other electrical equipment. Do not overcharge the battery or reverse the polarity of the battery or any charging unit. Disconnect the Haltech ECU from the electrical system whenever doing any welding on the vehicle by unplugging the wiring harness connector from the ECU. After completing the ECU installation, make sure there is no wiring left un-insulated. Uninsulated wiring can cause sparks, short circuits and in some cases fire. Before attempting to run the engine ensure there are no leaks in the fuel system. All fuel system components and wiring should be mounted away from heat sources, shielded if necessary and well ventilated. Always ensure that you follow workshop safety procedures. If you're working underneath a jacked-up car, always use safety stands!

## HALTECH LIMITED WARRANTY

Unless specified otherwise, Haltech warrants its products to be free from defects in material or workmanship for a period of 12 months from the date of purchase, valid in the original country of purchase only. Proof of purchase, in the form of a bill of sale or receipted invoice, which indicates that the product is within the warranty period, must be presented to obtain warranty service. Haltech suggests that the purchaser retain the dealer's dated bill of sale/receipt as evidence of the date of retail purchase. If the Haltech product is found to be defective as mentioned above, it will be replaced or repaired if returned prepaid along with proof of purchase. This shall constitute the sole liability of Haltech. To the extent permitted by law, the foregoing is exclusive and in lieu of all other warranties or representations, either expressed or implied, including any implied warranty of merchantability or fitness. In no event shall Haltech be liable for special or consequential damages.

## PRODUCT RETURNS

Please include a copy of the original purchase invoice along with the unused, undamaged product and its original packaging. Any product returned with missing accessory items or packaging will incur extra charges to return the item to a re-saleable condition. All product returns must be sent via a freight method with adequate tracking, insurance and proof of delivery services. Haltech will not be held responsible for product returns lost during transit. The sale of any sensor or accessory that is supplied in sealed packaging is strictly non-refundable if the sealed packaging has been opened or tampered with. This will be clearly noted on the product packaging. If you do not accept these terms please return the sensor in its original unopened packaging within 30 days for a full refund.

**Returning a sensor or accessory product within 30 days of purchase:** Product may be returned for credit or full refund. (Any sealed packaging must not have been opened or tampered with)

**Returning a sensor or accessory product after 30 days of purchase:** Product may be returned for credit only (no refunds given) and is subject to a 10% Restocking fee. (Any sealed packaging must not have been opened or tampered with)

V.1.2

## Need more help?



**AUS:** +61 2 9729 0999 **USA East:** (888) 298 8116 **USA West:** (949) 490 5660  
**Europe:** +43 720 883968 **UK:** 0121 285 6650 **NZ:** 09 887 0616



[www.haltech.com/support](http://www.haltech.com/support)



[support@haltech.com](mailto:support@haltech.com)