Haltech

iC-7

DISPLAY DASH
QUICK START GUIDE

The iC-7 Display Dash is available in two kits:

Part No. HT-067010 is pre-configured for connection to all Haltech ECUs via a supplied DTM-4 to DTM-4 CAN extension cable.

Part No. HT-067012 is pre-configured for connection to an OBD-II port via a supplied DTM-4 to OBD-II CAN cable.

This quick start guide will walk you through the installation of a Haltech iC-7 Display Dash into a vehicle already fitted with a Haltech ECU or equipped with an OBD-II port.

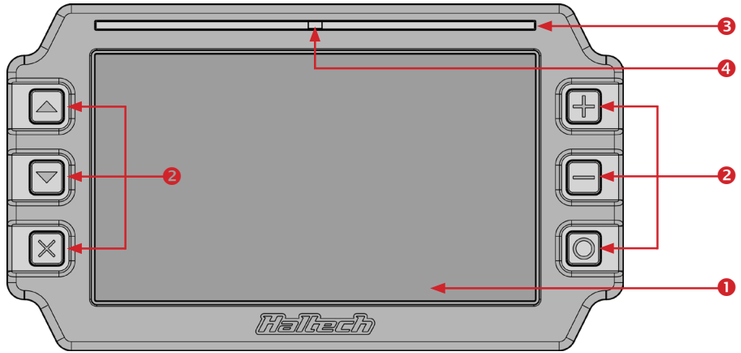
This guide is accompanied by the Help information available within the iC-7 software (iCC), located on the USB key provided.



What's in the box?

- Haltech iC-7 Display Dash
- 34 Pin main connector harness
- DTM-4 to OBD-II CAN cable (with HT-067012)
- DTM-4 to DTM- 4 CAN cable (with HT-067010)
- USB to M5 right angle cable
- USB cable
- Mounting screws
- 15 x spare pins to suit AUX connector
- USB flash drive with iCC software
- Quick start guide
- Haltech product catalogue
- Haltech stickers and a keyring





FRONT VIEW

1 Display Screen

2 Control Buttons

3 Shift / Alarm Light Panel

4 Ambient Light Sensor

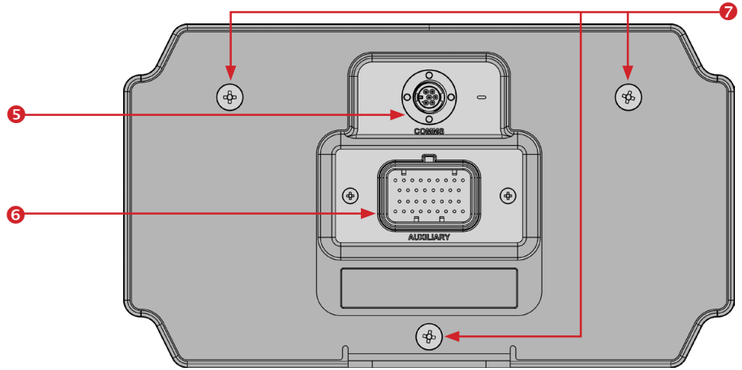
REAR VIEW

5 Comms Connector

6 Auxiliary Connector

7 Mounting Screw Holes

Display Size	7"
Resolution	800 x 480
Shift Lights	14 RGB
Dimensions	217mm x 122mm x 39mm
Connectors	1 x M5 USB connector (COMMS)
	1 x 34-pin Superseal (AUXILIARY/MAIN)
External Sensor and Connections	Haltech CAN
	OBD-II CAN
	5 x switched inputs (left indicator, right indicator, high beam, parking lights, handbrake)
Internal Sensors / Inputs	6 x Control Buttons
	4 x AVI, 1 x Ambient Light, VSS, RPM Sensors
Operating Voltage	6V - 20V
Max Current Draw	1A @ 12V
Ambient Temperature Range	-10°C ~ +60°C



iC-7 DISPLAY DASH OPERATION



Screen Navigation

Three keys perform the screen navigation.

- Press ^ key to go back to the previous screen in the sequence.
- Press v key to go to the next screen in the sequence.
- Press O to go to the home (default) screen.

When the dash is powered up it will display a Haltech Logo Screen. After an initial configuration time the dash will display the default home screen.

You can choose from a number of display layouts available in the Haltech iCC software. Display channels are user-customisable.

Brightness Control

The dash has an ambient light sensor placed in the light bar to detect ambient light conditions.

In addition, the dash has a manual brightness control which alters the range of the ambient light sensor.

There are five brightness settings. On minimum brightness setting, the display is at its minimum brightness when the environment is dark, and the brightness of the display increases as the environment becomes brighter.

On the maximum brightness setting, the display is always at full brightness regardless of the ambient light level.

The default setting is brightness level 3.

Press the + key to increase the brightness level by 1.

Press the − key to decrease the brightness level by 1.

Shift / Alarm Lights

The default function of the shift / alarm light panel is as a shift light bar, however alarms can be progremmed for any channel in the iC-7.

There are 14 lights in the sequence. Each LED has a threshold to trigger, and a colour which it lights up when the RPM exceeds the threshold.

The colours available are red, green, blue and their combinations (yellow, cyan, magenta and white).

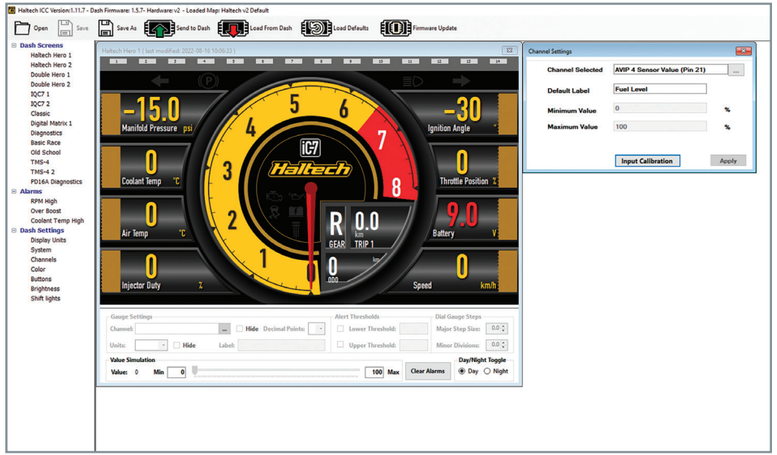
Alarms are configured using the Haltech iCC software. When an alarm event occurs, a message will appear on the screen.

The lights on the light bar can be set to flash in a preset colour.

When an alarm is triggered there are two options of turning it off:

1. Press the ✖ key to acknowledge the alarm.
2. Pre-set your alarm to turn off automatically when the alarm condition is no longer active after a preset amount of time.

For more information, please see the Help file in the Haltech iCC software.



First Start Up

1. Remove the protective film from the screen.
2. Turn on the ignition power.
3. Initially, the dash will display a Haltech logo while it starts up. It will go to black briefly before the main dash image appears.
4. After a few seconds, the dash will display the default screen selected in the software, with data from your Haltech ECU or vehicle's OBD-II.

Haltech ICC Software

With this software you can change various aspects of the dash behaviour including:

- Ranges of channels. Eg. the maximum RPM on a needle style tacho or a bar graph.
- Red ranges for channels. Eg. when a numeric display changes to red, red zone on a tacho.
- Display units. Eg. metric or imperial, lambda or AFR.
- The channel to be displayed at each location on the screen.
- The connection method. Eg. Haltech CAN or OBD-II.
- Shift light RPM points and colours.
- Alarm thresholds, colour for on-screen display and shift lights, manual or auto reset methods.

Installing the software

1. Insert the supplied USB Key into your PC. If you have lost your USB key, you can download the Haltech iCC software directly from the "Downloads" section of the Haltech website.

2. If the window does not open automatically, open My Computer and find the USB drive. Double click on the USB drive.

3. Double click on the installer icon you see in the root directory of the USB drive.

4. Once the Haltech iCC is installed, run the software.

5. With the the software opened, press F1 to read the Help file.

If you need help contact our Tech Support on:

Email: ..... support@haltech.com
USA: ..... +1 888 298 8116
UK: ..... +44 121 285 6650
AUS: ..... +61 2 9729 0999
NZ: ..... +64 9 887 0616

iC-7 MOUNTING OPTIONS

Moulded Panel Mount ➜
HT-060090

Bolts directly to the back of your iC-7 using three mounting screws provided. 10" x 20", can be trimmed to fit a variety of cluster surrounds.



Universal Mounting Bracket with Integrated Visor ➜
HT-060071

Bolts directly to the back of your iC-7 using three mounting screws provided. Includes a sun visor which reduces glare and protects the screen.



Universal Mounting Bracket ➜
HT-060070

Bolts directly to the back of your iC-7 using three mounting screws provided.



Tube Mount ➜

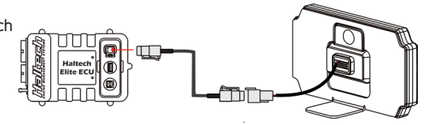
Connects the Universal Mounting Bracket to a roll cage or steering column.

HT-060072 suits tube OD 1.25in



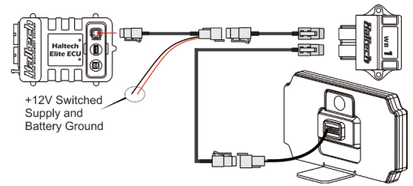
If you do not have any devices on your Haltech CAN bus already:

Connect the DTM-4 into the Auxiliary CAN Bus Port as shown ➜



If you already have devices on your Haltech CAN bus (eg Haltech wideband, TCA, I/O expander):

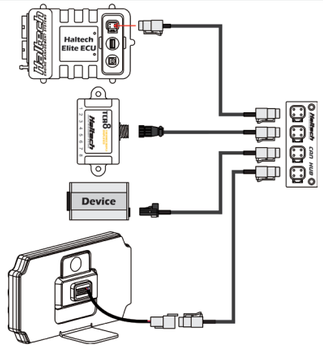
If there is an open port at the end of the CAN bus (e.g the spare DTM-4 connector on a Haltech WB1/WB2), connect the DTM-4 to the new device into this port as shown ➜



Otherwise, you will need to add a CAN Hub (HT-159000).

The Elite CAN Hub features four DTM4 ports and can be used for connecting up to three CAN devices.

Here is an example of a typical CAN Hub connection ➜



iC-7 TO HALTECH ECU INSTALLATION

1. Find a suitable place to mount your iC-7 Display Dash. A pull-out mechanical template is provided in the centre of this booklet if holes need to be cut in an existing panel.

2. Plug the supplied M5 (small circular connector) to USB cable into the "Comms" connector on the dash.

3. Plug the supplied Main Connector Harness (34-pin Superseal connector) into the 34 pin connector on the dash labelled "Auxiliary".

4. Plug the DTM-4 to DTM-4 CAN extension cable into the Main Connector Harness DTM-4 connector.

5. Thread the cables through the hole in the mounting bracket or panel.

6. Mount the USB connector where it can be easily accessed for programming and configuration.

7. Securely mount your iC-7 Display Dash into your vehicle.

8. Run the DTM-4 cable to your Haltech ECU or CAN hub.

9. Connect the DTM-4 cable into a spare port on your Haltech CAN bus.

iC-7 TO OBD-II INSTALLATION

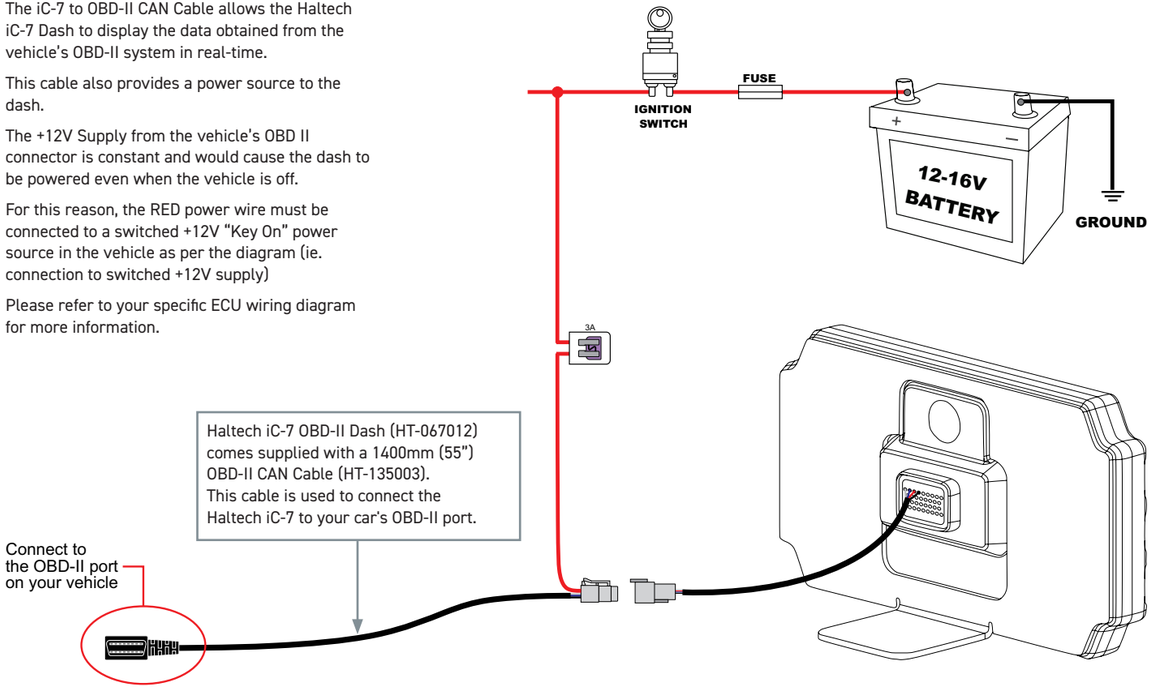
The iC-7 to OBD-II CAN Cable allows the Haltech iC-7 Dash to display the data obtained from the vehicle's OBD-II system in real-time.

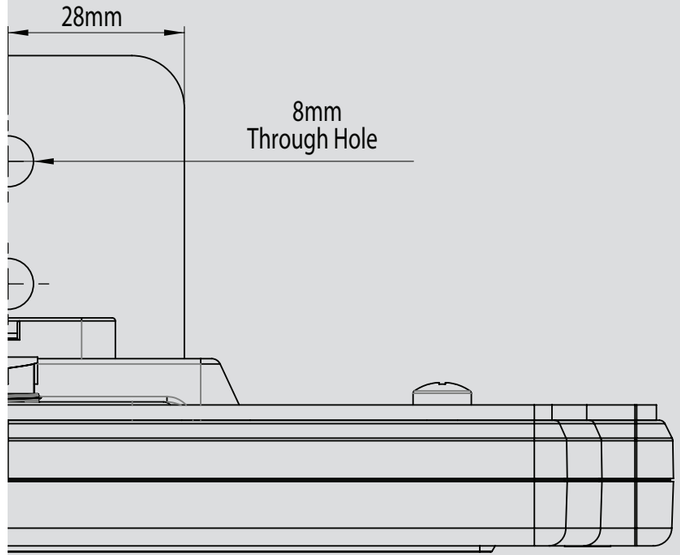
This cable also provides a power source to the dash.

The +12V Supply from the vehicle's OBD II connector is constant and would cause the dash to be powered even when the vehicle is off.

For this reason, the RED power wire must be connected to a switched +12V "Key On" power source in the vehicle as per the diagram (ie. connection to switched +12V supply)

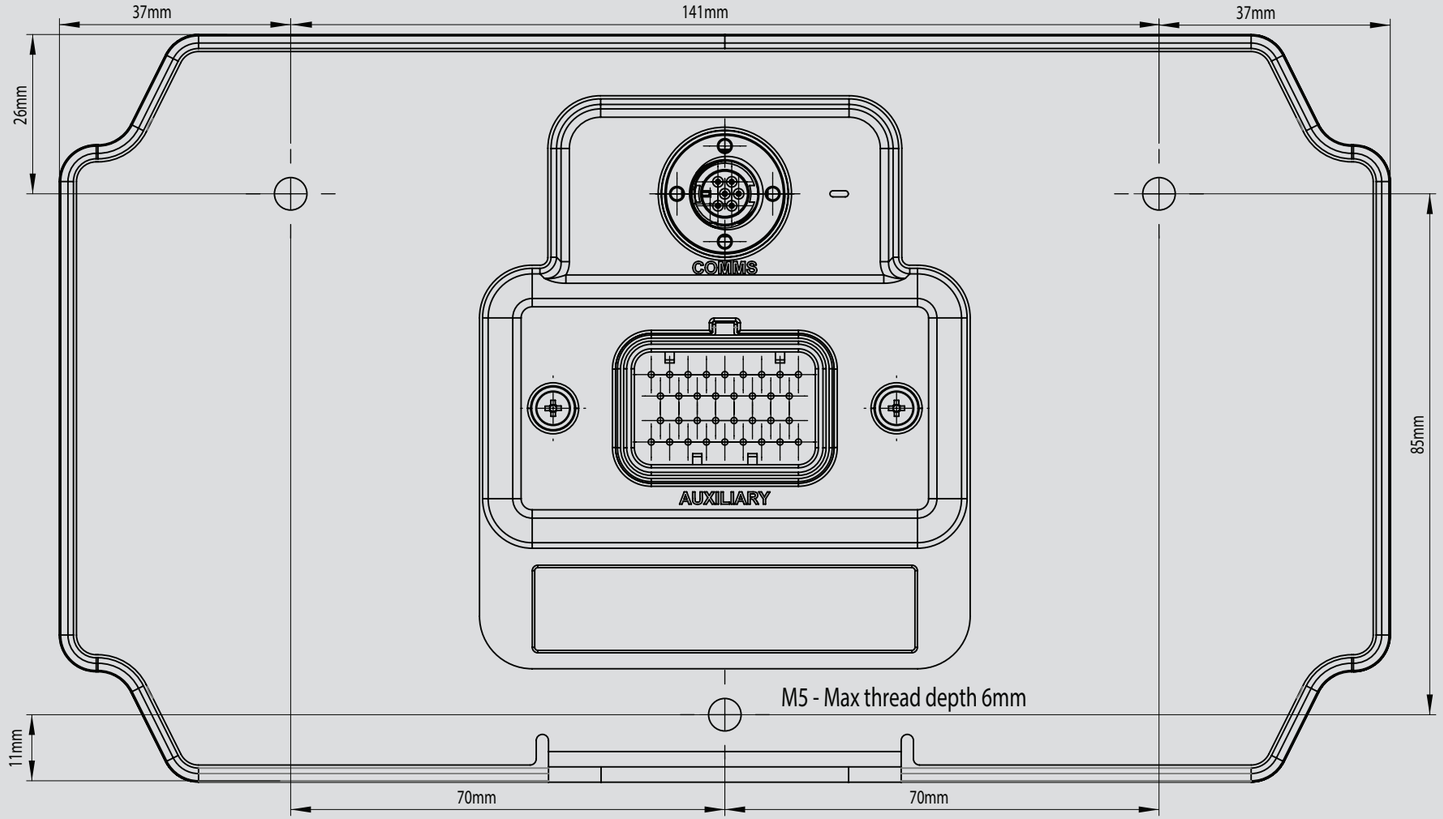
Please refer to your specific ECU wiring diagram for more information.





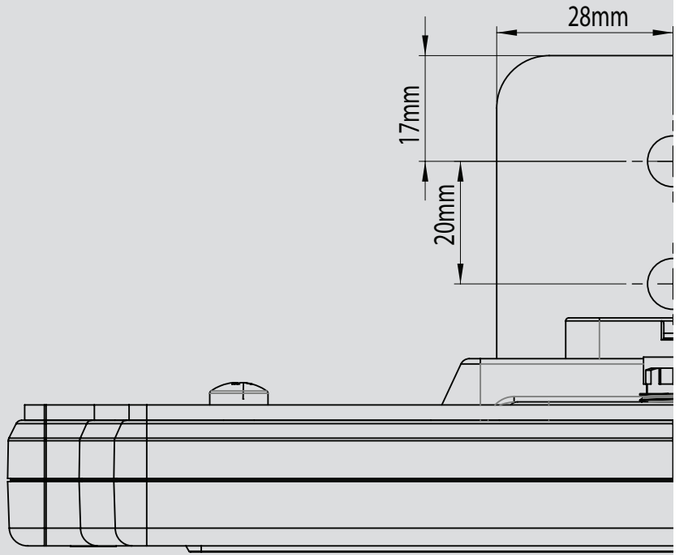
MOUNTING TEMPLATE

MOUNTING TEMPLATE



MOUNTING TEMPLATE

MOUNTING TEMPLATE



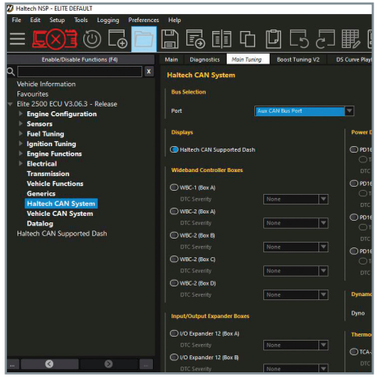
ECU configuration for Elite Series ECUs using NSP

1. Connect to the ECU with the NSP Software (Nexus Software Programmer)

2. Select "Haltech CAN System" from the Navigation Menu down the left hand side of the software.

3. Enable "Haltech CAN Supported Dash" Under the "Display" heading

4. On dual connector ECUs (Elite 1500/2500) ensure the Dash is connected to the CAN port described in the "Bus Selection" option. "Aux CAN Bus Port" is the DTM4 connector located next to the USB port. "Main Connectors" indicates the dash is wired to Pins B23 (CAN LOW) and B24 (CAN HIGH) of the main ECU connectors.



CAN Connection: DTM-4 receptacle

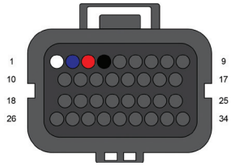
Pin Number	Connection
1	+12V Supply
2	Battery Ground
3	CAN High
4	CAN Low



Rear View, Wire Side

CAN Connection: 34 pin Superseal Connector

Pin Number	Connection
1	CAN High
2	CAN Low
3	+12V Supply
4	Battery Ground

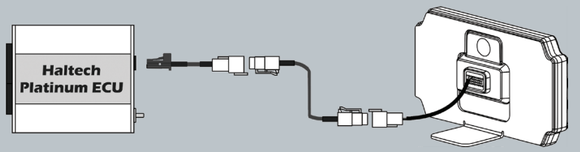


Rear View, Wire Side

Connecting iC-7 Display Dash to a Haltech Platinum Series ECU:

You will need to use an 8-pin Tyco to DTM-4 cable to connect all Platinum Series ECUs to this device. This cable is supplied with the ECU.

If you already have a Platinum Series ECU and are adding the iC-7 display dash to your system this cable can be purchased separately (HT-130040).



iC-7 TO THIRD PARTY ECU SETUP

Your Haltech iC-7 Display Dash is compatible with a number of third-party ECUs via a Haltech iC-7 Adapter Harness (sold separately).

ECUs currently supported by the iC-7 Dash:

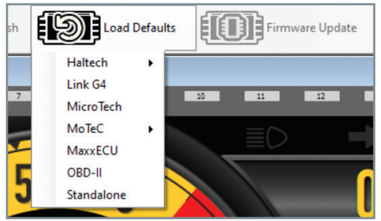
- Link: Atom, Monsoon, Storm, Extreme, Fury, Thunder, Force GDI, G5.
- MoTeC: M1 series MoTeC hundred series (M400,600,800 "gold box" ECUs)
- Microtech
- MaxxEcu
- Syvecs

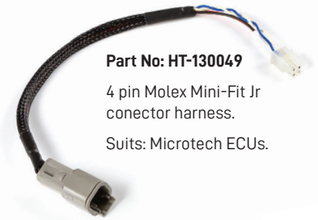
Third-Party ECU Setup

1. Connect to the iC-7 with the ICC software.

2. In the "Load Defaults" drop down menu select your ECU brand and model.

3. A base configuration will be loaded. This default configuration can now be customised.





Part No: HT-130049

4 pin Molex Mini-Fit Jr conector harness.

Suits: Microtech ECUs.



Part No: HT-130046

Flying lead harness with pins for AMP superseal connectors.

Suits: Link Atom, Monsoon, Motec ECUs using CAN communications through AMP superseal connector.

NOTE: For extended functionality of the iC-7 Display Dash, iCC firmware 1.7.3 or later is required. Earlier firmware versions are supported, but some channels may not display.

More information located in the ICC Help section.



Part No: HT-130047

Circular M12, 5 pin connector harness.

Suits: Link Storm, Extreme, Fury, Thunder, Force GDI ECUs using front circular CAN connector.



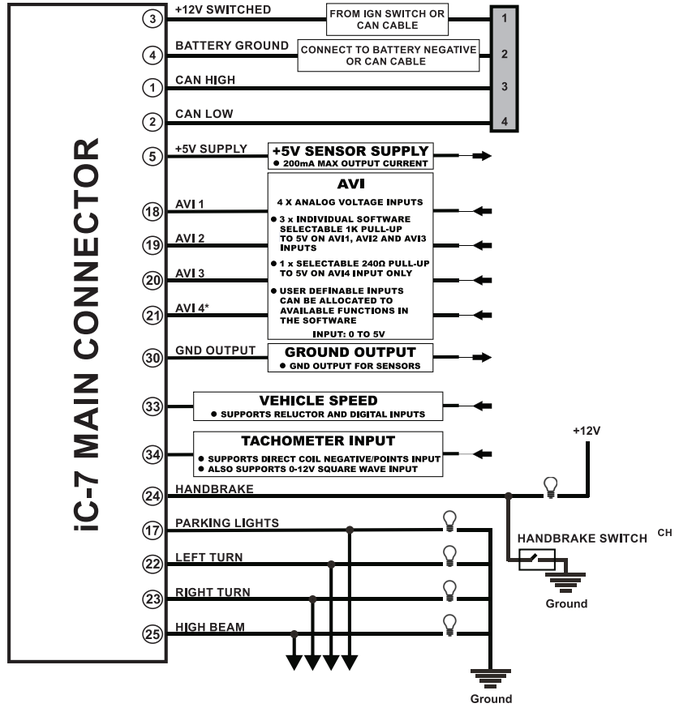
Part No: HT-130048

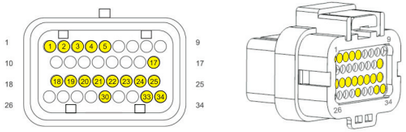
JST 5 pin connector with a flying lead power connector harness.

Suits: Link G5 Plug-In ECUs.

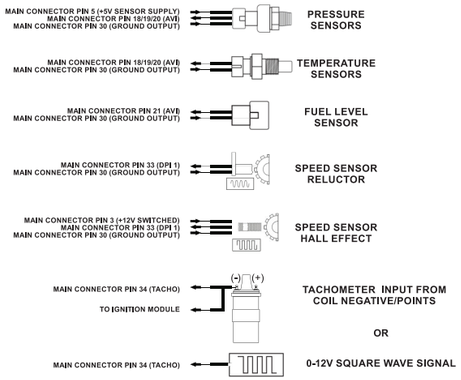
iC-7 WIRING DIAGRAM

iC-7 Wiring Diagram for units with Version 2 Hardware. See ICC software for your hardware version details.





LOOKING INTO CONNECTOR ON DASH



The iC-7 can be used as a "Standalone" dash on cars without a Haltech (or any aftermarket) ECU as well as carburated or mechanically injected applications using the semi-terminated harness (HT-060300).

This harness comes complete with labeled terminated sensor connectors as well as flying lead connections for integrating additional inputs such as high beam, park lights, turn signals or fuel level sender.

This harness supports both the CAN and the OBDII versions of the iC-7 Display Dash.

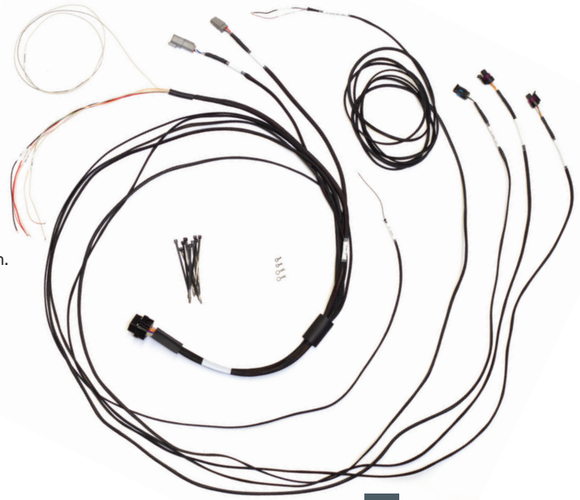
This harness connects directly to Haltech's iC-7 Display Dash with a 34 Pin Superseal Connector.

Make sure your iC-7 Display Dash has the latest firmware and software.

The latest ICC software can be downloaded from www.haltech.com/downloads

Features:

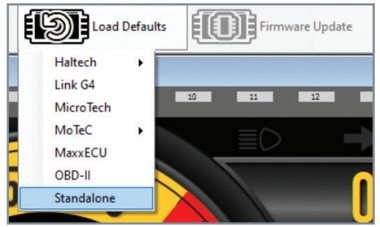
- Integrated Coolant Temperature connection.
- Integrated Fuel and Oil Pressure connection.
- Integrated Turn Signal indicator(s) connection.
- Integrated Handbrake, Park Light, High Beam, and Fuel Level connection.
- Plug'n'Play compatible with a Haltech GPS Speed Input Module.

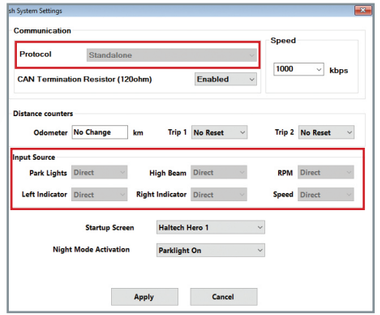


Loading iC-7's Standalone Default

From the main screen click on the "Load Defaults" menu and select "Standalone".

All the iC-7 inputs are now automatically set to "Direct" input mode.





Speedometer Input

The speed sensor provides a signal which, when received by the iC-7 can be used to display vehicle speed and/or set up speed-based alarms.

The Haltech iC-7 harness will connect directly to a Haltech GPS Speed Input Module (HT-011310) without any additional calibration or configuration required.

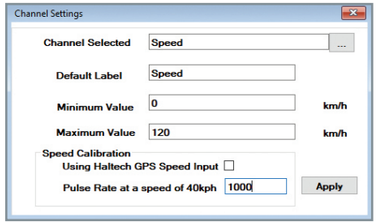
You can also connect your iC-7 to an existing OEM vehicle speed sensor.

In the Channel Settings window untick the "Using Haltech GPS Speed Input" box.

If you already know your sensor's Pulse Rate (PPM), enter it and click Apply.

If you don't know your sensor's PPM calculate it using the following steps:

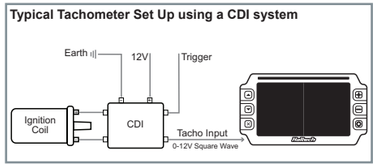
1. Ensure your speed sensor and iC-7 dash have a common power and ground supply.
2. Connect the sensor signal wire to "SPEED IN" (Pin 33).
3. Display the Speed Pulse Rate channel on an available gauge.
4. Drive the vehicle at 40KPH (25MPH) and note the Speed Pulse Rate value.
5. Enter the Speed Pulse Rate value in the relevant box and click "Apply" and you're all set!

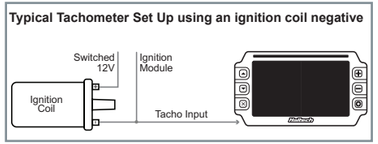


Tachometer Input

The "**TACHO IN**" is used to supply the display with engine RPM signal. This signal this can be provided by multiple ignition types.

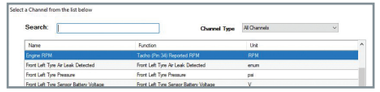
The "TACHO IN" input is an unterminated flying lead type which allows for an easy integration into many different types of OEM and custom-made wiring harnesses.





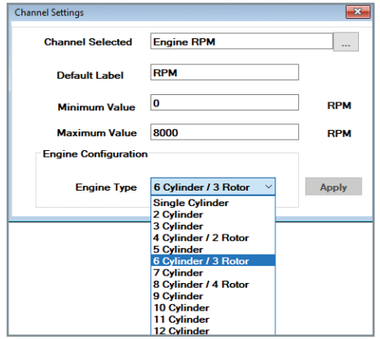
Connect this input to your current tachometer input wire. This wire can originate from a factory ECU, an ignition coil or your engine wiring harness.

To configure the RPM (TACHO IN) channel in the ICC software, select the tachometer on the main dash layout page.



In the "Channel Settings"dialog box set your minimum and maximum RPM values (eg. 0-8000).

Choose your engine configuration from the "Engine Type" drop down menu and hit "Apply".



NOTE: some factory ECUs such as the GM LS output a four cylinder ignition signal (two pulses per revolution).

Analogue Voltage Inputs (AVIP)

The Analogue Voltage Inputs on Haltech's iC-7 can accept variable voltage levels from 0V to 5V.

The pre-calibrated inputs include air and coolant temperature, oil and fuel pressure and fuel levels (volume) inputs. If your sensor is not listed in the "Sensors Connected" drop down menu of the "Channel Settings", you can use the "Custom" option and enter the calibration values manually.

Oil Pressure (AVIP 1)

The connector labeled "OIL PRESS" attaches directly to the Haltech oil pressure sensor.

This connection is pre-terminated with a 3 pin Delphi connector.



Fuel Pressure (AVIP 2)

The connector labeled "FUEL PRESS" attaches directly to a Haltech fuel pressure sensor.

This connection is pre-terminated with a 3 pin Delphi connector.



Coolant Temperature (AVIP 3)

The connector labeled "CTS" attaches directly to a Haltech engine coolant temperature sensor. This connection is pre-terminated with a DTM-2 connector.



Fuel Level (AVIP 4)

The flying lead connection labelled "FUEL LVL AVIP 4" is used to connect your existing fuel level sender to the iC-7 Display Dash. The harness also features a DTM-2 in-line connection for servicing.



Once connected you can you calibrate your fuel level sender using Haltech's ICC software.

To calibrate your fuel level sender go to "Dash Settings" / "Channel Settings" on the navigation menu.

Choose "AVIP 4 Sensor Value". Select "Input Calibration". The sensor dialog box will show a list of pre-configured sensors including optional Ohm ranges for common sending units.

If you have one of the pre-configured sensors, select it and click "Apply".

If your sensor type or Ohm range is not listed, you will need to input the "Custom" sensor type.

With the fuel sender connected to your iC-7, connect a Volt meter across your fuel sender gauge posts, and measure the minimum and maximum float height voltages.

Input those voltages to their corresponding value (0-100). For maximum accuracy measure all eight data points. Otherwise leave them blank and allow the software to interpolate the values.

Oil and Fuel Pressure Configuration

The AVIP1 and AVIP2 channels are already pre-configured for Haltech's 0-150 PSI pressure sensors. They are labeled "Oil Pressure" and "Fuel Pressure" respectively.

Follow the steps below if you need to change the sensor type or the display target of this channel:

Choose "Dash Settings" / "Channels" from the navigation menu.

Choose "AVIP1 Sensor Value". You can change its default label "Oil Pressure" if required.

Select "Input Calibration".

From this dialog menu, you can choose a different sensor type. You can also input a custom sensor type providing you know the voltage range and values for that sensor.

Most pressure transducers have a range of 0-5V, but this may vary and it is important to obtain the correct manufacturer's sensor data prior to calibration.

These sensors are available as a complete kit: Haltech iC-7 Sensor Pack (HT-010001)

WARRANTY CERTIFICATE

At Haltech we make every effort to design and manufacture fault-free products that perform up to or above the market expectations. All our products are covered by a Limited 12 Month Warranty.

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.

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. Proof of purchase in the form of a copy of the original purchase invoice, receipt or bill of sale which indicates that the product is within the warranty period, must be presented to obtain warranty service.

Replacement or repair of a defective product 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, receipt or bill of sale 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.

Returns of Products Supplied in Sealed Packaging

The sale of any sensor or accessory 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.

A sensor or accessory product may be returned after 30 days of purchase (with its sealed packaging in tact) for credit only (no refunds given) and will be subject to a 10% restocking fee.

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 Off-Road Usage Policy

In many states 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 and may never be used on a public road or highway.

Using Haltech products for street/road use on public roads or highways is prohibited by law unless a specific regulatory exemption exists (more information can be found on the SEMA Action Network website www.semasan.com/emissions for state by state details in the USA).

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 purchasing, using or installing any Haltech product.

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