



# digiDL<sup>H</sup>+HX

## User Guide



### Content Overview

- Checking vehicle compatibility
- In-vehicle fitting instructions
- Device configuration (using digiconnect software)
- Company Card Authentication (using digicentral)
- digiDL-HX User guide and Installation



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## **Checking Compatibility of Vehicles**

Remote download was introduced in 2010. The majority of vehicles from 2010 onwards will have digital tachographs that are compatible with the digiDL-H.

**Stoneridge Compatibility:** All revision 7.0 tachographs onwards.

### **VDO Compatibility:**

V1.3 onwards with significant exceptions and caveats.

In the case of VDO a Secondary CAN-Bus, required for remote download, was not included on every one of their models. The deletion of the Secondary CAN mostly affects 12 volt models, however there are some Volvo and Renault that are affected.

If you need to use the front port for remote download on a VDO tachograph you will need a VDO Front Interface Update Card or license code.

### **Front Port Download**

For certain installs which require front port download only, we have our KlineMod which is used with either the digiDL-H or digiDL-HX.

For more information about KlineMod and for the installation guide, [please visit the product page on our website.](#)

### **Tachosys Compatibility Checking tools**

Tachosys are the most experienced manufacturer in this market and we have developed several methods to check tachograph compatibility.

1. Tachograph Lookup is an online tool where you can search for individual tachograph model numbers and check compatibility. You are also able to drag and drop multiple compatible vehicle files which can be exported to .pdf or MS Excel. This program is found on our Dealer Zone ([www.dealerzone.tachosys.com](http://www.dealerzone.tachosys.com)) which requires a login.

Please contact Tachosys for a login.



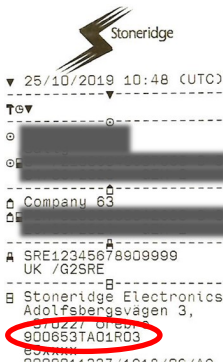
# digIDL-H - Checking Compatibility

2. Tacho File Viewer: you can download Tacho File Viewer from [tachosys.com](http://tachosys.com). The free version of Tacho File Viewer is limited, but allows you to see the model number of the tacho (see below). If you want to view the file downloaded from a vehicle, you will need to purchase a license dongle (SFV-ST) from [tachosys.com](http://tachosys.com).

You can access a printed version of the tachograph model number in the printer tray area of most tachographs.

## Checking Tachograph Model Numbers using Tacho File Viewer

### Stoneridge



Technical  
Printout

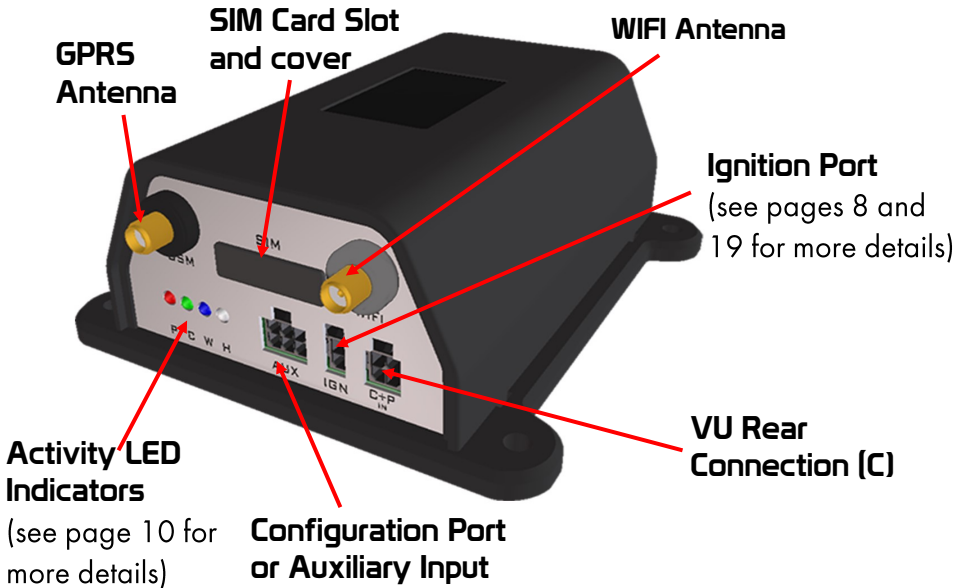


Tachosys Tacho File  
Viewer software

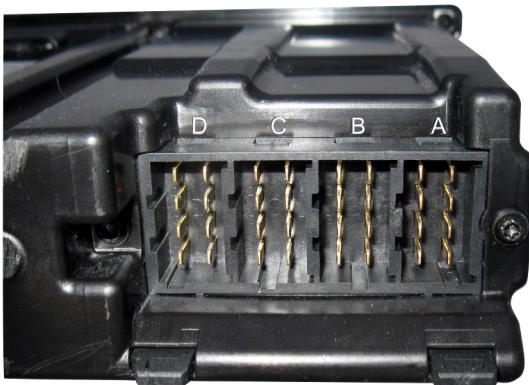
### VDO



## digIDL-H Connections - Front



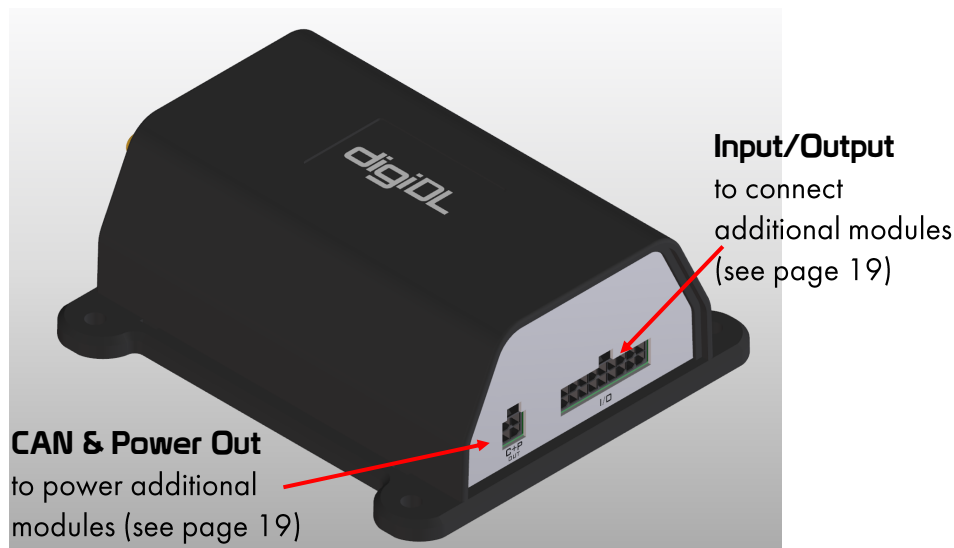
## Vehicle Unit Rear Connections



- A CAN-Bus - A
- B Speed Sender
- C CAN-Bus - C. For use with digIDL-H.
- D Serial Outputs. Not used in this context.

## digiDL-H Connections - Rear

As well as performing remote download, the 'H' part of the digiDL-H allows the user to connect the digiDL-H with various other devices and sensors around the vehicle. These can either be connected via the secure local network enabled by the WiFi antenna (see diagram on page 6 and configuration on page 20), or they can be physically connected to the I/O socket on the rear of the device. If these devices require power or CAN, these can also be physically connected using the 'C+P OUT' socket.



## Connecting the correct Antenna

The antennae are colour coded to make sure they are connected to the correct antenna socket. The black antenna should be connected to the GSM socket while the grey antenna should be connected to the WiFi socket.

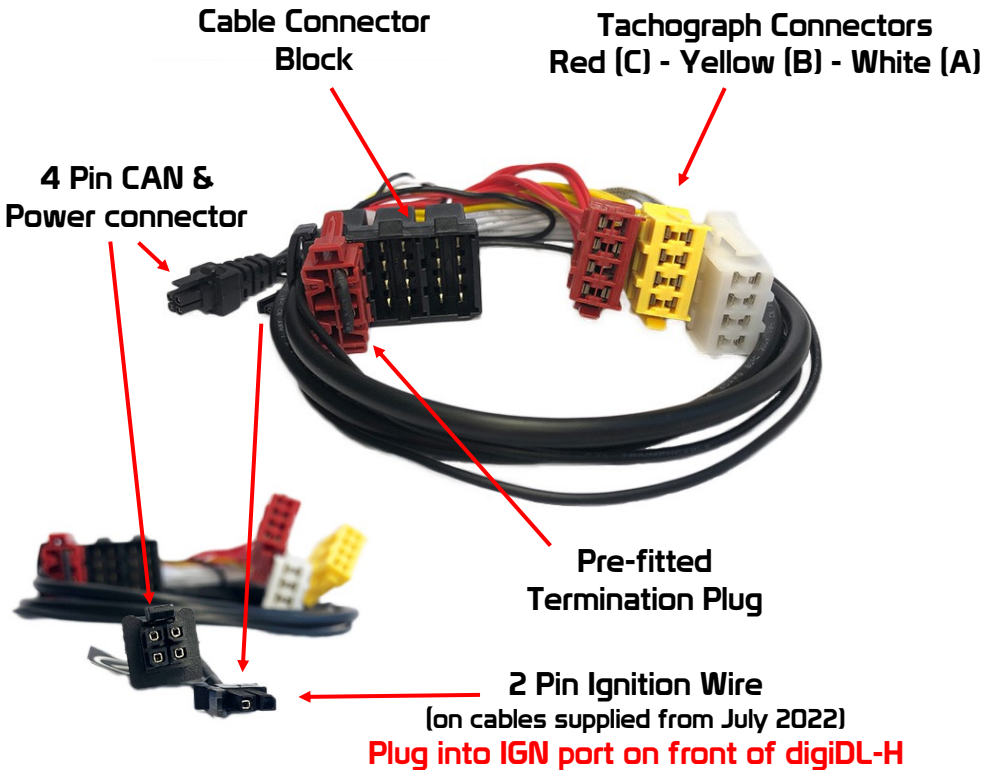
## Inserting the SIM card

With the device sitting flat, insert the SIM card with the metal strip facing down until you feel a click. Do not use excessive force when entering the SIM card.

# digIDL-H - Installation

## Enhanced Tacho Cable - DDL-ETC

The enhanced tacho cable is recommended for all digIDL-H installations as it is designed to be compatible with any vehicle manufacturer.



### Ignition Wire

**Note 1:** The digIDL-H is designed to work with enhanced tacho cables supplied from July 2022 onwards as it includes the split ignition wire. This should be connected to the 'IGN' socket on the digIDL-H. Further configuration of the IGN port settings can be done using digiconnect (see page 19 for more details).

If installing an original version digIDL, do not try to plug the ignition cable into the device.

**Note 2:** The latest version also includes additional wires which connect with C1-C4.

## Installation Steps (using DDL-ETC)

Follow the instructions below to install a digiDL-H using an Enhanced Tacho Cable (DDL-ETC):

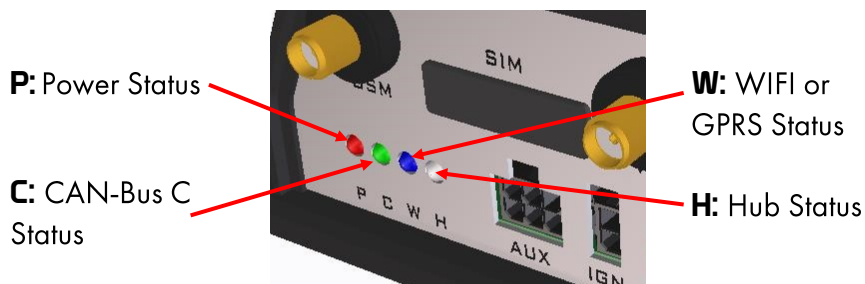
1. Before installing the device in a vehicle, ensure it has been registered and set up with a server. The device must also have both antenna connected to the corresponding socket and have a SIM card inserted.
2. To install in a vehicle, first remove the tachograph.
3. Remove the White (A), and Red (C) plugs already connected to the rear of the tachograph. Replace these with the ETC's plugs of the same colour.
4. If there was a manufacturers red (C) plug in the tachograph, remove the termination plug from the cable connector block and connect the original plug in its place. (See information on pages 11-12 on Secondary CAN-Bus enabling).
5. Connect the existing white plug into the cable connector block.
6. For the Yellow (B) plug, if the vehicle has a conjoined A and B plug (see image), remove the conjoined plug and insert into the DDL-ETC cable connector block (this usually affects Mercedes and Volvo vehicles). If there is a single Yellow (B) plug already in the back of the tachograph leave it in place and simply loop the Yellow plug on the DDL-ETC cable back into the cable connector block.
7. Connect the digiDL-H by inserting the 4 pin connector for CAN & Power into the 'C+P IN' port.
8. Connect the 2 pin ignition wire into the ignition (IGN) port. For more information on this, see pages 8 & 19.



**Mercedes/Volvo Plug**

# digIDL-H - Installation

## digIDL-H Indicator Lights



## LED Status

LED	ON	OFF	Flash
P	Power OK	No Power	Power okay and task is in progress
C	CAN OK	No CAN	Check compatibility or CAN C enabled but remote download disabled
W	Comms OK	No Comms	Slow: On network but no internet. Fast: Internet connected but not registered on digicentral.
H	Hub enabled	Hub disabled	Flash off (flashes off to count the number of connected devices)

### Ignition is ON but GREEN LED OFF, possible causes:

1. CAN-Bus C (RED PLUG) connector is not connected correctly
2. The tachograph may not be of the correct type (see pages 4-5)
3. The manufacturer may not have enabled the Secondary CAN-Bus (CAN2) (see page 12). This is common for DAF vehicles.

**IMPORTANT! - digIDL-H placement information:** please make sure you do not place the digIDL-H too close to other comms devices. Preferably place the unit flat with the antennae as close to an exterior panel as possible.

# digIDL-H – Specific Installation Requirements

## Secondary CAN-Bus Enabling

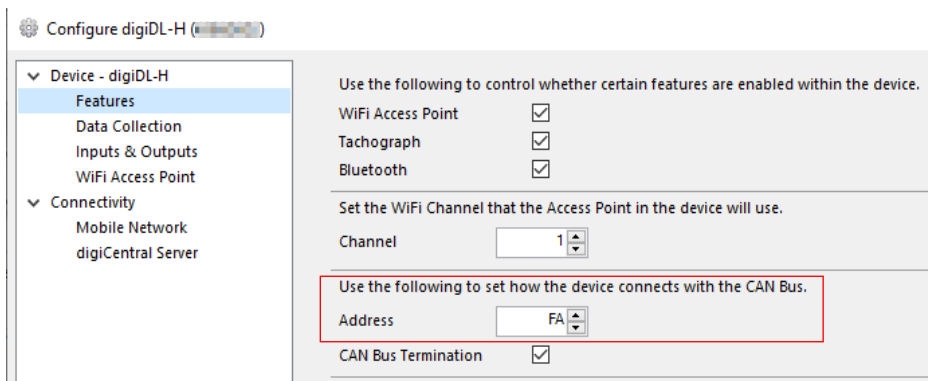
If information is required from the tachograph for a third party service, the enhanced tacho cable (DDL-ETC) allows you to plug both devices into CAN C using the connector block.

Some vehicles from 2015 onwards (Scania and Volvo to date), seem to have systems which are tapping into data from the CAN2 even though they are not doing remote download.

Both devices cannot share the same CAN address and the truck manufacturers do not provide a way to change their address. If you are running V1.33 firmware or later on your digIDL-H, DL, DL-E or DL-EX and running our latest configuration software (digiconnect), we allow you to change the CAN2 address.

N.B: we recommend the DDL-ETC where a Y Cable is required.

The standard CAN bus address for remote download is FB. However for all Tachosys remote download devices programmed from Nov 2020, the CAN bus addresses are set to FA as default. This prevents issues occurring where more than one device is set to FB. For older devices, the CAN bus address should be manually changed using the digiconnect software (see below and page 17). There are further addresses available if required.



Configure digIDL-H

- Device - digIDL-H
  - Features
    - Data Collection
    - Inputs & Outputs
    - WiFi Access Point
  - Connectivity
    - Mobile Network
    - digiCentral Server

Use the following to control whether certain features are enabled within the device.

WiFi Access Point	<input checked="" type="checkbox"/>
Tachograph	<input checked="" type="checkbox"/>
Bluetooth	<input checked="" type="checkbox"/>

Set the WiFi Channel that the Access Point in the device will use.

Channel

Use the following to set how the device connects with the CAN Bus.

Address	<input type="text" value="FA"/>
CAN Bus Termination	<input checked="" type="checkbox"/>

Vehicles most affected: Iveco, MAN, Mercedes, Scania & Volvo

## **digiDL-H – Specific Installation Requirements**

### **VDO and secondary CAN-Bus enabling**

Some VDO tachographs may be configured with the Secondary CAN-Bus disabled by default. In this case the function will need to be enabled with an appropriate tachograph programmer (e.g. Optimo Workshop Tab 4.0).

If the CAN LED (GREEN) does not illuminate on the digiDL-H and the tachograph has a Secondary CAN-Bus this is the likely cause.

The VDO programmer settings as we know them are; Programming – TCO Parameters – CANBus – Remote Download (ON) and TCO Parameters – CANBus – CAN2 (ON). This work, although not classed as a full calibration, will need to be done with a workshop card installed.

**Vehicles most affected: DAF, Renault**

### **CAN-Bus Termination plug DDL-TM for Onboard Systems 2012 onwards**

Some manufacturers fit a telematics unit as standard even if the operator does not subscribe to any services. This telematics unit may use the tachograph to terminate their own CAN-Bus. If the Red Plug is removed from the tachograph errors may occur which are shown on the vehicle dashboard.

Remove the manufacturer's or third party's Red plug and terminate it with our DDL-TM 120 Ohm resistor (only necessary if using the standard tacho cable DDL-TC).

To check for an active third party device, check voltage between GROUND and PIN 5 of their RED plug with the vehicle's ignition ON. It will read +/- 3V if active.

**N.B: we now recommend using the DDL-ETC in all installations.**

**Vehicles most affected: Iveco, MAN, Mercedes, Scania and Volvo**



### **Rear security seal**

In circumstances where a rear security seal is fitted to the tachograph, normally where the speed is being taken from the tachograph, this must be refitted and resealed. Resealing can only be performed by a calibration station. The seal is not required by law in the UK if the speed is being taken from a separate source. UK aftermarket tachographs are supplied by default without a seal. A secondary seal box can be used if the installer wishes to use the Tachosys plug and play cable and make tamperproof the A connection.

Our current understanding is that a seal must always be fitted in Denmark and Spain.

### **ADR / Hazchem Vehicles**

The digiDL-H is compatible with ADR/Hazchem vehicles, however it requires a special install to the vehicle's isolation switch. Please contact Tachosys if this is something you require.

# digiConnect Windows® Software

## digiConnect Windows® Software v5.00 onwards

### Minimum Recommended PC Specification

Processor: Intel P4 1.4GHz, AMD Athlon 1.4 GHz

Memory: 512Mbytes

Hard disk: 40 Gbytes

Video Resolution: 1024 x 768

Operating Systems: Windows 7 / 8 / 8.1 / 10 / 11

**Please note:** You will need the latest configuration kit with Tachosys product code DDLCK02.

*Important: do not connect any cables provided in the digiDL-H Config. Kit with the digiDL-H before commencing the software installation.*

### Installing the digiConnect Windows® Software

1. Download the digiConnect software from our website [www.tachosys.com/digiConnect](http://www.tachosys.com/digiConnect).
2. Select the language required. This will initiate installation.
3. Click 'Next' when prompted whether you want to install digiConnect.
4. Read the terms of the Licence Agreement then click on the 'I accept the terms in the Licence agreement' option and then click 'Next'. *If you choose to not accept the terms the installation will be terminated.*
5. Choose the folder in which you wish the software program files to be installed. The default folder is the standard location for Windows® programs. Click 'next'.
6. Click 'Install' to begin the actual installation. This may take several minutes.
7. Leave the box labelled 'Launch digiConnect' ticked and click 'Finish'.
8. The application will run and display any connected device(s).
9. Now follow the instructions for 'Connecting the digiDL-H to your PC' on page 21.

## Connecting the digiDL-H to your PC

DigDL-H has a different connection method for configuration compared to the digiDL. You should use the new programming cable (pictured). You cannot use the original digidock and cable to configure the digiDL-H, however you can use the new programming cable retrospectively on older versions of the digiDL.

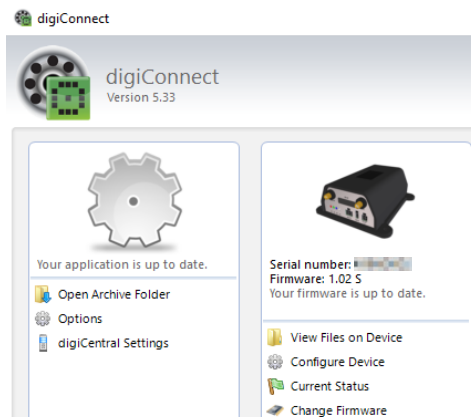
1. Set the new programming cable (pictured) and set the switch so the 'H' is visible in order to configure the digiDL-H. (The 'L' is for programming the original digiDL).
2. Connect the programming cable to a free USB socket on your PC and to the AUX socket below the SIM card slot on the digiDL-H.



**Please Note:** The digiDL-HX has a separate AUX socket on the rear of the box for programming the device for extra functionality.

3. Your digiDL-H must be powered for configuration purposes. Please use the power supply and converter cable provided or power via the tachograph and the supplied loom cable. (You can use the original power supply and converter cable from the standard digiDL config kit.)
4. Once all connections are made, simply open digiConnect and you should see the digiDL-H, along with its configuration options as shown below.

If you are having problems connecting to your digiDL-H then repeat the steps above.





## Configure Device - Device Configuration Window

Configure digiDL-H (40980002)

Device	
Firmware:	1.08 S
Serial Number:	40980002
PWD:	QY123ZKYP
Build Date:	01/03/2023 00:00:00
Connectivity:	Modem
Module:	4: GPRS

Vehicle	
Registration:	PROGRAM
Date of Last Authentication:	

Cancel Authentication

- |                                |   |
|--------------------------------|---|
| 1. Firmware                    | Version of firmware on device   |
| 2. Serial Number               | Unique to each device   |
| 3. PWD                         | Used when registering a device on the digicentral server                            |
| 4. Build Date                  | Date and time of when device was built  |
| 6. Connectivity                | Options (Modem/WiFi/LAN)  |
| 7. Module                      | Module type (GPRS/WiFi/LAN)   |
| 8. Registration                | Vehicle registration as read from the currently connected vehicle                   |
| 9. Date of last authentication | Last time this unit was able to communicate and authenticate against a Company Card |

\* WiFi only devices also have information on the MAC address.

**Please note:** the PWD entry (password) is a unique string which is used by your service provider or on your own digicentral for initial registration of the device. It avoids communication by random devices with digiCentral. Coupled with our encryption it provides added security.



## Configure Device - Features

Configure digiDL-H (40980002)

Device - digiDL-H

Features

Data Collection

Inputs & Outputs

WiFi Access Point

Connectivity

Mobile Network

Server Settings

Use the following to control whether certain features are enabled within the device.

WiFi Access Point☒

Tachograph☒

Bluetooth☒

Set the WiFi Channel that the Access Point in the device will use.

Channel

Use the following to set how the device connects with the CAN Bus.

Address

CAN Bus Termination☒

The features tab allows you to set whether certain features are enabled on the device.

**WiFi Access Point:** Enables/disables the digiDL-H's Hub functionality.

**Tachograph:** Enables/disables the digiDL-H's tachograph connection functionality.

**Bluetooth:** Enables/disables the digiDL-H's Bluetooth. This is for future functionality.

**Channel:** Set Hub access point's WiFi channel. Generally recommended to use 1, 6 or 11 to avoid overlaps. If fitting to a vehicle that has an existing WiFi access point, using a different default channel than the existing access point will reduce the possibility of interference or reduced connection speeds.

**Address:** Sets the device's CAN address. This should only be changed if there is a conflicting device on the CAN Bus. For more information on secondary CAN, see pages 11-12.

**CAN Bus Termination:** This setting should only be changed if instructed.



## Configure Device - Data Collection

Configure digiDL-H (40980002)

Use the following to control the data collected by the device and sent back to the server.

Tachograph Mode ☒

Driver Decision Support ☒

Reduced Tachograph Mode ☐

Send data bundles after at most:  seconds

**Tachograph Mode Data:** refers to real time data on every change of mode that can be sent back to the server to calculate driving and rest times. By default this is turned OFF as it will use more data if it is not specifically required.

**Driver Decision Support data:** again by default this option is OFF. However if the customer has a tachograph that will provide Driver Decision Support (DDS) data or Counter data and their analysis provider presents this data then it should be turned ON.

**Reduced Tachograph Mode Data:** only use this function after talking with Tachosys.

**Sending Data Bundles:** this is the period the unit waits before sending downloaded data to the server. The default is 60 seconds.

When the digiDL-H first connects with the digicentral server, they may inherit the settings based on the account features.



## Configure Device - Inputs & Outputs

Configure digiDL-H (40980002)

Device - digiDL-H

Features

Data Collection

Inputs & Outputs

WiFi Access Point

Connectivity

Mobile Network

Server Settings

Use the following to control whether the device will monitor any of the following inputs.

	Monitor	Log		Monitor	Log
Digital 0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Analogue 0	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Digital 1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Analogue 1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Digital 2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Supply Voltage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Digital 3	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Digital 4	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Ignition	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			

To disable access to the Tachograph CAN C bus when ignition OFF, tick the box below:  
☒

Set the interval between when the device samples the analogue inputs.

Analogue 0  seconds

Analogue 1  seconds

Supply Voltage  seconds

Set the default level for these outputs.

Output 0

Output 1

These settings relate to any devices which are connected to the 'Hub', either physically or through the I/O Connector. If you want to log an input, the relevant input must have monitoring enabled.

### Ignition (Digital Input 5)

If you require the digiDL-H's tachograph to be disabled when the ignition is off (currently known to affect MAN vehicles), you must ensure the 2 pin wire of the Enhanced Tacho Cable (DDL-ETC) is connected to the ignition port.

By default digital input 5 is used by the ignition input.

For more information about the possibilities of digiDL-H's I/O functionality, please contact Tachosys.



## Configure Device - WiFi Access Point

Configure digiDL-H (40980002)

The screenshot shows the configuration window for the digiDL-H device. On the left is a sidebar with a tree view containing 'Device - digiDL-H' (expanded), 'Features' (with sub-items 'Data Collection', 'Inputs & Outputs', and 'WiFi Access Point'), and 'Connectivity' (with sub-items 'Mobile Network' and 'Server Settings'). The 'WiFi Access Point' section is selected. The main area is titled 'WiFi Access Point' and contains two radio button options: 'Automatic' (selected) and 'Custom Suffix'. Under 'Automatic', there is an 'SSID' field with the text 'DLH\_40980002\_' and an empty text box. Under 'Custom Suffix', there are empty text boxes for 'SSID' and 'Passphrase'.

The digiDL-H has the ability to create its own secure WiFi network which allows other devices and sensors around the vehicle to connect to it.

**We recommend leaving these set to Automatic.**

**Custom Suffix:** This allows mod devices to maintain automatic connection to the digiDL-H while being able to give the device a custom identifier (e.g. vehicle reg or vehicle ID number).

**Manual Override:** This allows you to override the automatic settings and set a custom SSID and passphrase. **Warning!** This will break any connection with existing devices. To reconnect those devices they will need to be reconfigured to match the digiDL-H SSID and passphrase.





## Configure Device - Mobile Network

Configure digiDL-H (40980002)

Mobile Network

Network:

SIM Number:

IMEI Number:

APN:

User:

Password:

Enter the PIN used to secure the SIM card:

PIN:

The Mobile Network tab is where you can configure the 4G Mobile Connectivity.

The digiDL-H requires an APN, Username and Password to use with the SIM card in the device. Please check with your network provider.

If your SIM card has a PIN applied to it, enter it in the PIN field and click OK/Apply.

When you have completed all necessary fields, click "Save to Device" to write the settings to the device memory. The digiDL-H will save the settings and reboot. Within a short period of time, if the network settings are correct, you should see the blue LED on the device begin to flash and then stay on, indicating that the device has successfully connected. If this does not happen, please refer to the troubleshooting section.

Please note that if the blue LED is not solid then you do not have connection and you should call your service provider.



## Configure Device - digicentral Server



Configure digiDL-H (40980002)

Device - digiDL-H

- Features
- Data Collection
- Inputs & Outputs
- WiFi Access Point
- Connectivity
  - Mobile Network
  - Server Settings

digiCentral

Host name:

Port number:

The digicentral Server tabs allows you to edit the Host name and port number in order to connect your device with a digicentral server. These details will either be provided by your analysis provider or will match your own digicentral server settings. The Port Number should be left as 4616 unless the digicentral server is exposed on a different port.



## View Files on Device

View Files on digiDL ( )

### File Types

- Driver Card (2)
- Vehicle Unit (2)**
- Workshop Card

### File Management

- Upload
- Download
- Download New
- Delete
- Delete All
- Properties

### Progress

Registration	Contents	Download Date	Size
<b>SNS58SRN</b>	<b>Overview, Activities (1 days), Faults and events, Technical data</b>	<b>09/05/2018 10:26:59</b>	<b>9 KB</b>
SNS58SRN	Overview, Activities (375 days), Faults and events, Detailed speed, Technical data	25/05/2018 15:27:07	184 KB
STONE478	Overview, Activities (5 days), Faults and events, Technical data	25/09/2019 12:32:09	9 KB
<b>STONE478</b>	<b>Overview, Activities (1 days), Faults and events, Technical data</b>	<b>25/09/2019 12:35:10</b>	<b>8 KB</b>

The digiDL-H stores the files it downloads from the Vehicle Unit. In digiconnect these are classified in either the 'Driver Card' or 'Vehicle Unit' folders. As the unit nears its memory capacity it overwrites the oldest files. Whilst this storage provides some level of backup it is simply designed to deal with situations where the unit is offline for whatever reason. It also allows the unit to independently download and store files whether the vehicle is connected to the network or not, provided it has received an authentication in the last 24 hours.

During installation testing or on retrieval of a unit from a vehicle you can view the current files on the digiDL-H (see above). These files can be downloaded to your PC using the "Download" button in the File Management options. You can also delete files from the device should you be installing in another vehicle for instance.

# Company Card Authentication

## Authentication

The introduction of Remote Download makes it possible for the tachograph to communicate remotely with a Company Card, in this case by using digiDL-H as a gateway. digiDL-H will try and authenticate every 18 hours.

## The role of digicentral

digicentral is a Tachosys product which runs on Windows servers to provide a communications platform for our devices. All of the UK online tachograph analysis providers have a digicentral server in operation. digiDL-H needs to communicate with a designated digicentral server in order to open a dialogue with the appropriate company card, to pass data and to receive schedules and tasks.

Options for company card authentication:

digicard (DC03)	A simple and cost effective solution. However it requires a permanent connection to a Windows PC.
digicard Hotel (DCH02)	(Preferred Option) A company card authentication solution provided by your reseller.
digicard-AUT (DCA01)	(2nd preferred option) A stand-alone solution which only requires power and a WiFi connection.

Your designated digicentral server will have access to a relationship created between the vehicle and the company card(s). This would be set up in one of three ways; by the service provider, via a web interface provided by your service provider, or via your own server. Your reseller may offer a card hosting service using our digicard Hotel.

## Mobile Network connectivity issues

If the blue LED is flashing it means that a SIM card is present but the unit is unable to initiate communication with the mobile network. Initially check all of your mobile network settings (see page 24). If the unit still fails to connect first try repowering the unit. If the unit still fails then you can view the status of connectivity in the digiconnect Current Status window. The code displayed will show the stage of connection.

You must make sure that the SIM card is not PIN locked and is a 'data enabled SIM'.

## Green LED flashing or OFF

You may not have a connection to CAN2. This could be caused by one of the following:

- Ignition is OFF.
- The secondary CAN is not enabled (see pages 12-13).
- The tachograph is too old or of the wrong type (see pages 4-5).
- The cabling is faulty. Try another loom.

## Blue LED Flashing or OFF with ignition ON

- OFF = SIM card not enabled or unit mounted too close to another radio signal. First try moving the unit.
- Flashing; not registered on destination server or unable to connect to 4G network.

# Troubleshooting

## Blue LED Flashing with ignition ON - Continued

There have been several cases where remote download units have been placed close to other communications sources. In this instance one or both of the units may no longer operate or connections are sporadic. Examples would be things like online weighing, tracking, or onboard computers.

If the blue light is flashing and you know that all APN Settings and server settings are correct then try temporarily moving the digiDL-H away from other sources towards the confines of the vehicle cabin. In theory, if your problem is reception then the blue LED should now go solid.

If you are struggling to find a position where the digiDL-H is far enough away from sources of interference, Tachosys produces a 1 metre extension cable with code DDL-TCX. These cables can be daisy-chained to create more length if required.

Such occurrences are rare but with vehicles becoming busier with comms equipment positioning needs to be more carefully considered.

## Status

If in-depth troubleshooting is needed, please call Tachosys. They may ask you to view the current status of the device within digiconnect.

## **Overview of digicentral Web**

All of the key UK online providers have their own digicentral servers. Each will have a different web address. digicentral is not just used for digiDL-H, it can receive data from any Tachosys product using different communication methods.

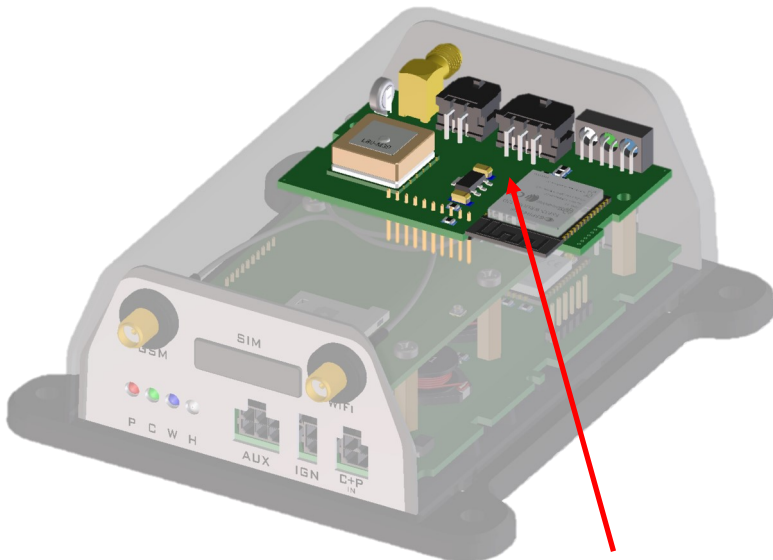
The great thing about digicentral is that it can be integrated with other systems and it therefore means that the customer's data goes straight from the vehicle and then onwards to their chosen analysis system.

Whilst fitters should receive digiDL-H units that are already setup for the appropriate server it is worth understanding the process and what needs to be in place for digiDL-H to function.

# digiDL-HX Overview

## digiDL-HX Overview

The digiDL-HX incorporates the standard digiDL-H along with the 'X' module which facilitates the collection of FMS and GPS data (hence digiDL-HX). Although the 'X' module physically sits within the device (see below), it acts as a separate module, connecting with the digiDL-H base via its secure WiFi network. This means the 'X' module requires separate configuration.



*The 'X' Module for FMS & GPS sits inside a digiDL-H base  
(making a digiDL-HX).*

## Separate Server Registration

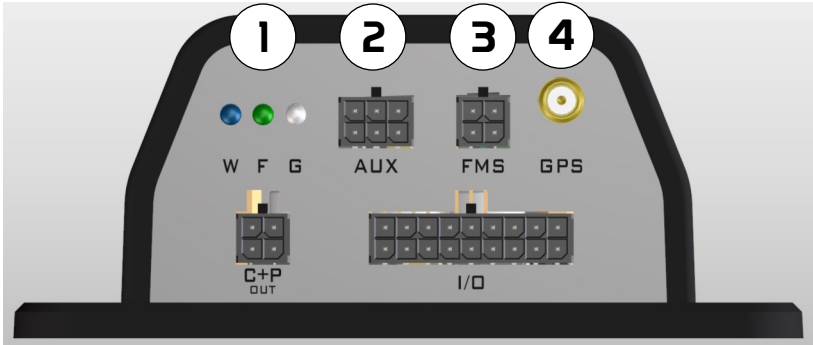
The 'X' module requires separate registration on your server to the digiDL-H. So for the digiDL-HX, there will be two server entries; one for the digiDL-H and another for the FMS/GPS module (or 'X' module.)



# digiDL-HX Overview

## digiDL-HX's Extra Physical Features

The front of the digiDL-HX is the same as the digiDL-H, however the back of the digiDL-HX has additional ports which allow both FMS and GPS connection and the programming of the 'X' module (see below).



1

LED	ON	OFF	Flash
W	Connected to DL-H	Not connected to DL-H	Slow: Connected to DL-H network but no internet. Fast: Internet connected but not registered on digicentral.
F	FMS OK	No FMS	N/A
G	GPS OK	No GPS	Obtaining GPS positional lock

2

Aux port: Auxiliary socket for use in configuring the 'X' part of the digiDL-HX with your programming cable (DDL-PRC02).

3

FMS: The port connects with the vehicle's CAN-Bus channel for use with the standard FMS or proprietary CAN feeds. Use the DDL-FMS or DDL-CS cable to facilitate this feature.

4

GPS: Socket for external GPS antenna. The device has an internal GPS antenna which should be sufficient for most installs. However, depending on the placement of the digiDL-HX in the vehicle you may require a GPS antenna extension (GPS-ANT) which connects to this port.

# digiDL-HX Installation

## Before Installation

To install a digiDL-HX, follow the guide to digiDL-H installation (pages 6-13) and then use the following steps for the 'X' part of the device.

Before installing the device in a vehicle, ensure the 'X' module has been registered and set up on a server (such as digicentral).

To use FMS or GPS functions, ensure you have enabled those features using digiconnect before installation (see pages 33-34).

## GPS Installation

If you are utilising the tracking function of the digiDL-HX and using the external GPS antenna (GPS-ANT), ensure this is connected to the GPS port (the internal antenna is usually sufficient, however the external antenna should be used if the GPS reception is poor).

## FMS Installation

The digiDL-HX has a second CAN-Bus port (labelled FMS) for connection to the vehicle CAN-Bus. You can use our FMS cable (DDL-FMS) which has a 12-pin green plug for standard connection with the CAN-Bus.



Alternatively, if there is not a green FMS socket accessible or you are not allowed to plug into this port, you can use the digiCAN Slide (DDL-CS) which slides onto an existing pair of CAN-Bus wires (high and low). The CAN-Slide listens to the CAN-Bus to retrieve data but is not electrically connected to it and so does not transmit data in the other direction. For more information about this option, please contact Tachosys.

# digiDL-HX Configuration Using digiconnect

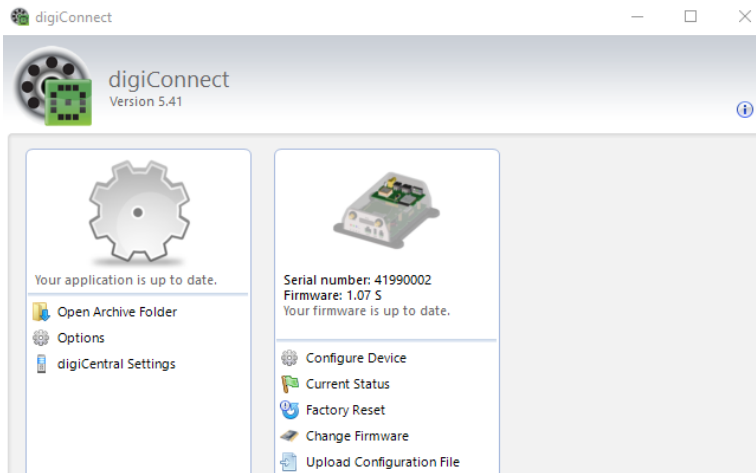
## Device Configuration using digiConnect

Before configuring the 'X' part of the digiDL-HX, you need to configure the digiDL-H part to ensure the two parts are able to communicate with each other.

In the digiDL-H configuration, make sure the 'WiFi Access Point' option is enabled, take a note of the WiFi Channel and set the WiFi Access Point as 'Automatic' (unless otherwise instructed). See pages 17-20.

Connect the digiDL-HX to a spare USB port your PC using the programming cable (see page 15). Ensure that the programming cable is attached to the 'X' side of the device (between the LED's and the FMS port - see number 2 on page 29).

## digiconnect Main Menu

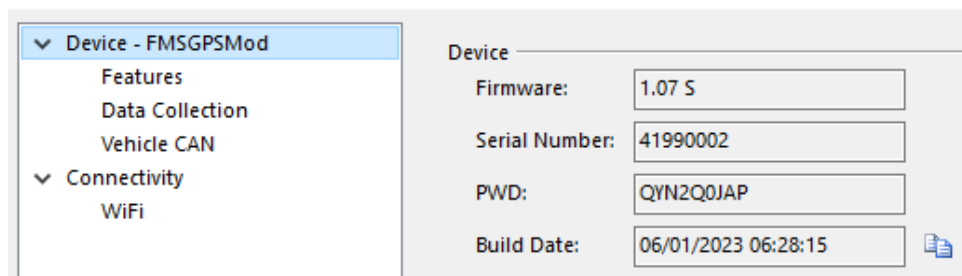


Configure Device	To Access device configuration
Current Status	Status codes for support purposes
Factory Reset	Allows you to factory reset the device. Use cautiously
Change Firmware	Allows you to upgrade the device's firmware
Upload Config File	For FMS configuration only. Talk to Tachosys

# digiDL-HX Configuration Using digiconnect

## Configure Device - Device Configuration Window

 Configure FMSGPSMod (41990002)

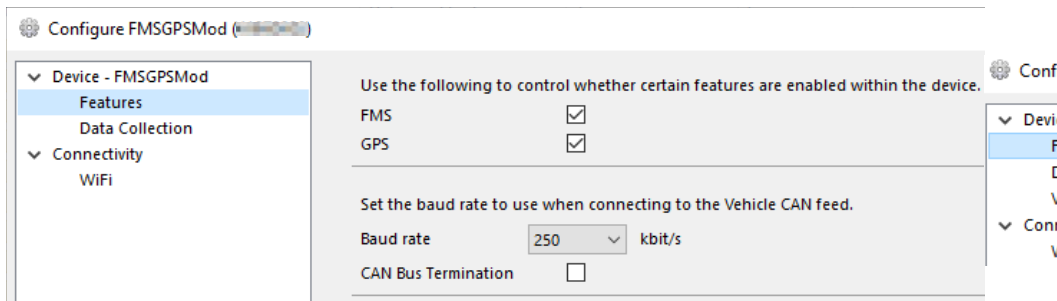


Device	
Firmware:	1.07 S
Serial Number:	41990002
PWD:	QYN2Q0JAP
Build Date:	06/01/2023 06:28:15

- |                  |  |
|------------------|--|
| 1. Firmware      | Version of firmware on the 'X' module                          |
| 2. Serial Number | Unique to each 'X' module                                      |
| 3. PWD           | Used when registering the 'X' module on the digicentral server |
| 4. Build Date    | Date and time of when device was built                         |

# digiDL-HX Configuration Using digiconnect

## Configure Device - Features



Configure FMSGPSMod

Device - FMSGPSMod

- Features
- Data Collection

Connectivity

- WiFi

Use the following to control whether certain features are enabled within the device.

FMS ☒

GPS ☒

Set the baud rate to use when connecting to the Vehicle CAN feed.

Baud rate 250 kbit/s

CAN Bus Termination ☐

### FMS/GPS enabling

Select FMS and/or GPS to enable these features within the device.

GPS: enables tracking of the vehicle

FMS: allows the digiDL-HX to connect with the vehicle's FMS Gateway in order to collect FMS data, such as fuel consumption, brake information and much more. We supply two different cables (depending on your need) for this purpose: the FMS Cable (DDL-FMS) or the digiCAN Slide (DDL-CS).

To configure what FMS data you require the HX to collect, please contact the Tachosys development team.

## Configure Device - Data Collection

Configure FMSGPSMod (41990002)

Use the following to control the data collected by the device and sent back to the server.

FMS ☒

GPS ☒

Send GPS packets automatically ☒ Automatically

or every 60 seconds

Send data bundles after at most: 60 seconds

This configuration menu allows you to customise how frequently the data collected is sent back to the server.

Select FMS and/or GPS to control what data is collected by the device and sent back to the server. (see page 33 for more information on FMS).

### GPS packets

You are able to configure whether GPS data gets sent automatically or define how often the GPS packets are sent.

### Data bundles

Allows you to configure the frequency of data bundles being sent.

## Configure Device - Vehicle CAN

### Baud rate

Set the baud rate to the same speed as the vehicle CAN.

### CAN Bus Termination

This setting should only be changed if instructed.

The other settings in this menu determine the specific data you collect and how often. Adjust the settings accordingly.

# digiDL-HX Configuration Using digiconnect

Configure FMSGPSMod (41990002)

Set the baud rate to use when connecting to the Vehicle CAN feed.

Baud rate: 250 kbit/s

CAN Bus Termination ☒

Alter the settings that control the collection of In Journey and On Change messages.

In Journey ☒

Sample In Journey data every: 60 seconds

Alter the settings that control when Vehicle CAN events occur.

Short idle time: 2 minutes

Long idle time: 5 minutes

High engine load: 90 %

Harsh braking threshold: 1.50 m/s<sup>2</sup>

Harsh acceleration threshold: 1.50 m/s<sup>2</sup>

## Configure Device - WiFi

Configure FMSGPSMod (41990002)

WiFi

☒ Automatic

☐ Custom Suffix

SSID: DLH\_4

☐ Manual override

SSID:

Passphrase:

If both the digiDL-H and digiDL-HX (for FMS & GPS) are set to 'Automatic' within the WiFi settings then the digiDL-HX will automatically connect to the digiDL-H's secure WiFi network.

**We recommend leaving these set to Automatic.**

**Custom Suffix:** This allows the digiDL-HX (for FMS & GPS) to maintain automatic connection to the digiDL-H while giving it a custom identifier.

**Manual Override:** This allows you to override the automatic settings and set a custom SSID and passphrase. **Warning!** This will break any connection with an existing digiDL-H. To reconnect to the digiDL-H it will need to be reconfigured to match the digiDL-HX SSID and passphrase.



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